
 STATUTORY INSTRUMENTS

1985 No. 849

CUSTOMS AND EXCISE

The Export of Goods (Control) Order 1985

Made - - - - - 3rd June 1985
Coming into Operation 25th July 1985

The Secretary of State, in exercise of powers conferred by section 1 of the Import, Export and Customs Powers (Defence) Act 1939(a) and now vested in him(b), and of all other powers enabling him in that behalf, hereby makes the following Order:

Citation, commencement and interpretation

1.— (1) This Order may be cited as the Export of Goods (Control) Order 1985 and shall come into operation on 25th July 1985.

(2) In this Order, unless the context otherwise requires—

“Commissioners” means the Commissioners of Customs and Excise;

“country” includes territory;

“goods”, unless otherwise specified, means both used and unused goods;

“hovercraft” has the same meaning as in section 4(1) of the Hovercraft Act 1968(c);

“international import certificate” means a certificate issued by the Secretary of State for the purposes of this Order or any Order revoked by this Order certifying that an importer has undertaken with the Secretary of State to import into the United Kingdom the goods specified in the certificate or to deal with them in such other manner as is authorised by a licence granted under this Order;

“importation” and “exportation” in relation to a ship or aircraft includes the taking into or out of the United Kingdom of the ship or aircraft notwithstanding that the ship or aircraft is conveying goods or passengers, and whether or not it is moving under its own power; and cognate expressions shall be construed accordingly;

“Member State” means a Member State of the European Communities;

“scheduled goods” means goods of a description specified in Schedule 1 hereto and any reference to such goods being indicated by a letter shall be taken as a reference to the goods being so indicated in Schedule 1 hereto;

(a) 1939 c. 69.

(b) See S.I. 1970/1537.

(c) 1968 c. 59.

“scheduled journey” means one of a series of journeys which are undertaken between the same two places and which together amount to a systematic service operated in such a manner that the benefits thereof are available to members of the public from time to time seeking to take advantage of it;

“ship” includes the hull or part of the hull of a ship;

“software” means one or more programmes fixed in any tangible medium of expression, “programme” means a sequence of instructions to carry out a process in, or convertible into, a form executable by an electronic computer and includes a microprogramme, and “microprogramme” means a sequence of elementary instructions, maintained in a special storage, the execution of which is initiated by the introduction of its reference instruction into an instruction register;

“technological document” means any document containing information relating to the design, production, testing or use of goods or to technologies or processes and “document” includes any record or device by means of which information is recorded or stored;

a prohibition on exportation means a prohibition on exportation from the United Kingdom and shall include a prohibition on shipment as ships’ stores;

numerical references in Schedule 1 hereto to British Standards are references to the standards so numbered published by the British Standards Institution in the year indicated after such references with such amendments (if any) thereto as may have been made before the making of this Order;

references in Schedule 1 hereto to percentages of the contents of any goods are references to percentages by weight;

any description of goods in Groups A and C of Part I of Schedule 1 hereto in relation to a tariff heading number, other than one covering a whole heading, shall be taken to comprise all goods which would be classified under an entry in the same terms constituting a subheading in the relevant heading in the common customs tariff of the European Economic Community(a).

Prohibitions and restrictions on exportation

2. Subject to the provisions of this Order—

- (i) scheduled goods indicated by the letter “A” are prohibited to be exported to any destination;
- (ii) scheduled goods indicated by the letter “T” are prohibited to be exported to any destination except that when in relation to such goods the provisions of Regulation (EEC) 223/77, as amended(b), relating to the use of Community transit documents requiring anything to be done at or before the time of

(a) See Council Regulation (EEC) No. 3400/84 (O.J. No. L320, 10.12.84) amending Regulation (EEC) No. 950/68.

(b) O.J. No. L38, 9.2.77, p. 20, amended by Regulations (EEC) 1601/77 (O.J. No. L182, 22.7.77, p. 1), 526/79 (O.J. No. L74, 24.3.79, p. 1), 1964/79 (O.J. No. L227, 7.9.79, p. 12), 137/80 (O.J. No. L18, 24.1.80, p. 13), 902/80 (O.J. No. L97, 15.4.80, p. 20), 3298/80 (O.J. L344, 19.12.80, p.16), 1664/81 (O.J. No. L166, 24.6.81, p. 11), 2105/81 (O.J. No. L207, 27.7.81, p. 1), 3220/81 (O.J. No. L324, 12.11.81, p. 9), 1499/82 (O.J. L161, 12.6.82, p. 11) and 1482/83 (O.J. No. L151, 9.6.83, p. 29).

- exportation have been complied with, the goods may be exported to a destination in another Member State;
- (iii) scheduled goods indicated by the letter "E" are prohibited to be exported to any destination except a destination in another Member State;
 - (iv) scheduled goods consisting of classes of ships indicated by the letter "S" are prohibited to be exported to any destination after delivery or for the purpose of delivery, directly or indirectly, to a person in Afghanistan, Albania, Bulgaria, China, Czechoslovakia, the German Democratic Republic, Hungary, Democratic Kampuchea, the Lao People's Democratic Republic, Mongolia, North Korea, Poland, Romania, the Union of Soviet Socialist Republics or the Socialist Republic of Vietnam;
 - (v) all goods in relation to the export of which from any country an international import certificate has been issued and which have been imported into the United Kingdom are prohibited to be exported to any destination;
 - (vi) specialised components of any of the apparatus, appliances or equipment falling within a description in Group 1 of Part II of Schedule 1 hereto, whether or not such components are specified in the description, are prohibited to be exported to any destination in South Africa or Namibia;
 - (vii) goods of a description specified in Group C of Part I of Schedule 1 hereto are prohibited to be exported to any destination in the United States of America or the Commonwealth of Puerto Rico;
 - (viii) technological documents, other than documents generally available to the public, the information contained in which relates to any goods specified in Groups 1 to 3 of Part II of Schedule 1 hereto or to any goods, technologies or processes specified in Group 4 of Part II of Schedule 1 hereto are prohibited to be exported to any destination in any country specified in paragraph (iv) above;
 - (ix) scheduled goods indicated by the letter "I" are prohibited to be exported to any destination in Iran or Iraq.

Community steel products

3. The prohibition in Article 2(vii) of this Order shall not apply to any exportation to any destination in the United States of America or the Commonwealth of Puerto Rico in accordance with a European Community export licence issued by the competent authority of a Member State in conformity with the provisions of Commission Decision 82/2873/ECSC(a) or Commission Regulation (EEC) No. 2874/82(b) or Commission Regulation (EEC) No. 61/85(c).

(a) O.J. No. L307, 1.11.1982.
(b) O.J. No. L307, 1.11.1982.
(c) O.J. No. L9, 10.1.1985.

Exceptions

4. Nothing in Article 2 of this Order shall be taken to prohibit the exportation of—

Licensed exports and permitted ships' stores

- (a) any goods under the authority of a licence granted by the Secretary of State, or the shipment of any goods as ships' stores with the permission of the proper officer of Customs and Excise at the port of departure for use on board the ship, provided that all conditions attaching to the said licence or the said permission are complied with;

Channel Islands

- (b) any goods other than goods of a description included in Group B of Part I of Schedule 1 hereto or in Group 1 of Part II of the said Schedule, to any destination in the Channel Islands;

Samples

- (c) trade samples of any goods, except goods of a description included in Group 1 of Part II of Schedule 1 hereto, if the samples have no saleable value;

Aircraft

- (d) (i) any aircraft which is being exported after temporary importation into the United Kingdom, provided that there has been no change of ownership or registration since such importation;
(ii) any aircraft engaged on a scheduled journey;

Cocoa

- (e) cocoa beans, whole or broken, raw or roasted, and the following cocoa products namely cocoa paste (in bulk or block) whether or not defatted, cocoa butter (fat or oil) and unsweetened cocoa powder to any destination if there is produced to the proper officer of Customs and Excise at the place of export the appropriate certificate prescribed for this purpose by the economic and control rules and transitional arrangements of the International Cocoa Agreement 1980(a) which were adopted by the International Cocoa Council on 7th August 1981 and were set out in the annex to Regulation (EEC) 2818/81(b);

Firearms and ammunition

- (f) firearms and ammunition to any destination other than a destination in South Africa or in Namibia, not being goods of a description included in Group B of Part I of Schedule 1 hereto, authorised to be held by a valid firearm certificate or shot gun certificate granted or having effect as if granted under the Firearms Act 1968(c) or by a valid firearm certificate granted in Northern Ireland under the

(a) Cmnd. 8226.

(b) O.J. No. L279, 1.10.81.

(c) 1968 c. 27.

Firearms Act (Northern Ireland) 1969^(a) or granted in the Isle of Man under the Firearms Act 1947 (an Act of Tynwald)^(b) and forming part of the personal effects of the holder, if the certificate is produced by the holder, or his duly authorised agent, with the firearms and ammunition to the proper officer of Customs and Excise at the place of export;

Hovercraft

- (g) hovercraft engaged on a scheduled journey;

Live animals of the bovine species, swine and sheep

- (h) (i) any live animal if the place of export is Great Britain;
(ii) live animals of the bovine species, live swine and live sheep from Northern Ireland to the Republic of Ireland;

Ships

- (i) (i) any ship registered or constructed outside the United Kingdom which is being exported after temporary importation into the United Kingdom;
(ii) any ship which is departing from the United Kingdom on trials;
(iii) any ship proceeding on a normal commercial sailing.

Customs powers to demand evidence of destination which goods reach

5. Any exporter or any shipper of goods which have been exported from the United Kingdom shall, if so required by the Commissioners, furnish within such time as they may allow proof to their satisfaction that the goods have reached either—

- (i) a destination to which they were authorised to be exported by a licence granted for the purposes of this Order, or
(ii) a destination to which their exportation was not prohibited by this Order;

and, if he fails to do so, he shall be liable to a customs penalty not exceeding one thousand pounds unless he proves that he did not consent to or connive at the goods reaching any destination other than such a destination as aforesaid.

Offences in connection with applications for licences, etc.

6. If for the purpose of obtaining any international import certificate or of obtaining any licence or permission under this Order for the exportation or shipment as ships' stores of any goods or of obtaining from the Secretary of State a European Community export licence as referred to in Article 3 of this Order any person makes any statement or furnishes any document or information which to his knowledge is false in a material particular or recklessly makes any statement or furnishes any document or information

(a) 1969 c. 12 (N.I.).

(b) Acts of Tynwald 1947, p. 586.

which is false in a material particular he shall be guilty of an offence and liable on summary conviction to a fine not exceeding one thousand pounds and on conviction on indictment to a fine or imprisonment for a term not exceeding 2 years, or to both; and any licence or permission or European Community export licence which may have been granted for the exportation or shipment as ships' stores of any goods, in connection with the application for which the false statement was made or the false document or information furnished, shall be void as from the time it was granted.

Declaration as to goods: powers of search

7.— (1) Any person who, on any occasion, is about to leave the United Kingdom shall, if on that occasion he is required to do so by an officer of Customs and Excise—

(a) declare whether or not he has with him any goods the export of which from the United Kingdom is subject to any prohibition or restriction under this Order; and

(b) produce any such goods as aforesaid which he has with him;

and such officer, and any person acting under his directions, may search that person for the purpose of ascertaining whether he has with him any such goods as aforesaid:

Provided that no person shall be searched in pursuance of this paragraph except by a person of the same sex.

(2) Any person who without reasonable excuse refuses to make a declaration, fails to produce any goods or refuses to allow himself to be searched in accordance with the foregoing provisions of this Article shall be guilty of an offence and liable to a customs penalty not exceeding five hundred pounds.

(3) Any person who under the provisions of this Article makes a declaration which to his knowledge is false in a material particular or recklessly makes any declaration which is false in a material particular shall be guilty of an offence and liable on summary conviction to a customs penalty not exceeding one thousand pounds and on conviction on indictment to a customs penalty of any amount or imprisonment for a term not exceeding two years, or to both.

Overlapping descriptions

8. Where any goods fall within more than one description specified in Schedule 1 hereto and at least one description is specified in Group B of Part I or in Part II and the goods are indicated in that Schedule by more than one of the letters specified in Article 2 those goods shall be deemed to fall only within the prohibition in the paragraph first-mentioned in Article 2 relating to the goods.

Modification and revocation of licences, etc.

9.— (1) Any international import certificate or licence granted by the Secretary of State in pursuance of Article 2(v) or 4(a) or having effect as if so granted may be modified or revoked by him at any time.

(2) Any permission granted by the proper officer of Customs and Excise for

the shipment of any goods as ships' stores may be modified or revoked by such officer at any time.

Revocations etc.

10. The Arms Export Prohibition Orders 1931-37(a) are hereby suspended and the Orders specified in Schedule 2 hereto are hereby revoked.

Paul Channon,
Minister for Trade,
Department of Trade and Industry.

3rd June 1985.

(a) S.R. & O. 1931/413, 1937/525.

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Article 1(2)

SCHEDULE 1

PART I

GROUP A

GOODS SPECIFIED BY REFERENCE TO HEADINGS IN THE COMMON CUSTOMS
TARIFF OF THE EUROPEAN ECONOMIC COMMUNITY

Note. Goods of any description falling within Chapter 73 of the said tariff and expressed in this Group to be subject to rule (1) or rule (2) are excluded from the scope of the description in question if they have all three of the characteristics respectively specified below in relation to those rules:

Rule (1)

- (i) They are in a straightened state.
- (ii) They are free from attachments (including bolts and rivets).
- (iii) They have one dimension not less than 1.50 m.

Rule (2)

The characteristics specified in rule (1) above, but with the substitution of "2.50 m" for "1.50 m" in characteristic (iii).

<i>Tariff Heading No.</i>	<i>Description of Goods</i>	
01.02	Live animals of the bovine species	A
01.03	Live swine	A
ex 01.04	Live sheep	A
18.01	Cocoa beans, whole or broken, raw or roasted	E
18.03	Cocoa paste (in bulk or block), whether or not defatted	E
18.04	Cocoa butter (fat or oil)	E
18.05	Cocoa powder, unsweetened, otherwise than in retail packs each of less than 3.5 kg	E
ex 26.03	Ash and residues, containing copper	T
ex 72.01	Coins of silver alloy of the United Kingdom minted before 1947, but not more than 100 years old at the date of exportation, exported in a quantity exceeding 10 in number .	A
73.03	Waste and scrap metal of iron or steel (ECSC)	T
ex 73.09	Used universal plates, of iron or steel (ECSC), subject to rule (1) above	T
ex 73.10	Unused bars and rods (including wire rod), of iron or steel, less than 0.9 m in length	E
ex 73.10	Used bars and rods (including wire rod), of iron or steel; and used hollow mining drill steel; subject to rule (1) above	T
ex 73.11	Unused angles, shapes, sections and sheet piling, of iron or steel, less than 0.9 m in length	E

<i>Tariff Heading No.</i>	<i>Description of Goods</i>	
ex 73.11	Used angles, shapes, sections and sheet piling, of iron or steel, subject to rule (1) above	T
ex 73.12	Unused hoop and strip (except in coiled form), of iron or steel, of which any dimension of the surface area is less than 0.45 m	E
ex 73.12	Used hoop and strip, of iron or steel, subject to rule (1) above ..	T
ex 73.13	Unused sheets and plates, of iron or steel, of which any dimension of the surface area is less than 0.45 m	E
ex 73.13	Used sheet and plates, of iron or steel, subject to rule (1) above	T
ex 73.14	Used wire, whether or not coated, but not insulated, of iron or steel, subject to rule (1) above	T
ex 73.15	Unused alloy steel and high carbon steel products in the forms mentioned in headings Nos. 73.10 and 73.11, less than 0.9 m in length	E
ex 73.15	Unused alloy steel and high carbon steel products in the forms mentioned in headings Nos. 73.12 (except in coiled form) and 73.13, of which any dimension of the surface area is less than 0.45 m	E
ex 73.15	Alloy steel waste or scrap in ingot form	T
ex 73.15	Used alloy steel and high carbon steel products in the forms mentioned in headings Nos. 73.09 to 73.14 (inclusive), subject to rule (1) above	T
ex 73.16	Used railway and tramway track construction material, of iron or steel, the following:— Switch blades, crossings (or frogs), crossing pieces, point rods, rack rails, sleepers, fish-plates, chairs, chair wedges, sole plates (base plates), rail clips, bedplates, ties and other material specialised for joining or fixing rails, subject to rule (1) above ...	T
ex 73.16	Used steel rails and check-rails, subject to rule (2) above	T
ex 73.18	Used tubes and pipes, of iron or steel, and blanks therefor (except of cast iron), excluding high-pressure hydro-electric conduits, subject to rule (1) above	T
ex 73.19	Used high-pressure hydro-electric conduits, of steel, whether or not reinforced, subject to rule (1) above	T
ex 74.01	Copper waste and scrap	T
ex 76.01	Aluminium waste and scrap	T
ex 78.01	Lead waste and scrap	T

GROUP B

PHOTOGRAPHIC MATERIAL, ANTIQUES, COLLECTORS' ITEMS ETC.

Any photographic positive or negative produced more than 60 years before the date of exportation or any album or other assemblage containing such photographs, the value of which, as required by the Commissioners to be declared, is £400 or more, except any photographic positive or negative or album exported by, and being the personal property of, the manufacturer or producer thereof, or the spouse, widow or widower of that person A

Any goods manufactured or produced more than 50 years before the date of exportation A

except

- (1) photographic positives and negatives, and albums or assemblages thereof;
- (2) postage stamps and other articles of philatelic interest;
- (3) birth, marriage or death certificates or other documents relating to the personal affairs of the exporter or the spouse of the exporter;
- (4) letters or other writings written by or to the exporter or the spouse of the exporter; and
- (5) any goods exported by, and being the personal property of, the manufacturer or producer thereof, or the spouse, widow or widower of that person.

GROUP C

STEEL PRODUCTS PROHIBITED TO BE EXPORTED TO THE UNITED STATES OF AMERICA OR THE COMMONWEALTH OF PUERTO RICO

Note: The following goods are specified by reference to headings in the common customs tariff of the European Economic Community. For information, the corresponding Nimexe Codes in the Nomenclature of Goods of the External Trade Statistics of the European Economic Community and Statistics of Trade between Member States (NIMEXE)(a) are also specified:

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
ex 73.08		Steel coils (ECSC), the following:—
		(1) Less than 1.50 m in width, intended for re-rolling,
	730801	(a) for "electrical" sheets and plates, other than silicon electrical;
		(b) other, of a thickness of—
	730803	(i) more than 4.75 mm;
	730805	(ii) not less than 3 mm but not more than 4.75 mm;
	730807	(iii) less than 3 mm;
		(2) Less than 1.50 m in width, not intended for re-rolling, of a thickness of:
	730821	(a) more than 4.75 mm;
	730825	(b) not less than 3 mm but not more than 4.75 mm;
	730829	(c) less than 3 mm;
		(3) 1.50 m or more in width, of a thickness of:
	730841	(a) more than 4.75 mm;
	730845	(b) not less than 3 mm but not more than 4.75 mm;
	730849	(c) less than 3 mm.
ex 73.09	730900	Steel universal plates (ECSC).
ex 73.10		Steel bars and rods (including wire rod), the following:—
		(1) Not further worked than hot-rolled or extruded, the following:
	731011	(a) wire rod (ECSC), of circular section 0.2 in or more in diameter, or of any other solid section;

(a) See Commission Regulation (EEC) No. 3529/84, O.J. No. L337, 24.12.1984, p. 1, amending Council Regulation (EEC) No. 1445/72, O.J. No. L161, 17.7.1972, p. 1.

Tariff Heading No.	Nimexe Code	Description of Goods
	731016	(b) bars and rods (ECSC), other than— (i) concrete reinforcing bars with minor indentations, flanges, grooves or other deformations produced during the rolling process, whether or not twisted after rolling, and (ii) round blooms and billets;
	731030	(2) Not further worked than cold-formed or cold-finished, of rectangular section more than 1.2 in. in thickness and more than 12 in. in width; (3) Clad or surface-worked, the following:
	731042	(a) not further worked than clad— (i) hot-rolled or extruded (ECSC), coated or plated with metal and of rectangular section less than 3/16 in. in thickness and more than 12 in. in width, or 3/16 in. or more in thickness and more than 8 in. in width;
	731045	(ii) cold-formed or cold-finished, coated or plated with metal and of rectangular section more than 12 in. in width;
	731049	(b) other, of circular section, except with a diameter of 18.8 mm or less and in coils, or of rectangular section, except cold-finished less than 12 in. in width, or of any other solid section.
ex 73.11		Angles, shapes and sections of steel, the following:— (1) Not further worked than hot-rolled or extruded (ECSC), the following: (a) U, I or H sections of a height of less than 80 mm and having a maximum cross-sectional dimension of 3 in. or more; (b) H sections (broad-flanged beams) of a height of 80 mm or more; (c) U or I sections of a height of 80 mm or more— (i) with parallel flange faces; (ii) other;
	731111	
	731112	
	731114	
	731116	

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
	731119	(d) other angles, shapes and sections having a maximum cross-sectional dimension of 3 in. or more;
	731120	(2) Not further worked than forged and having a maximum cross-sectional dimension of 3 in. or more;
		(3) Not further worked than cold-formed or cold-finished and having a maximum cross-sectional dimension of 3 in. or more, the following:
	731131	(a) from coils for re-rolling universal plates, hoop, strip, sheets or plates;
	731139	(b) other;
	731150	Steel sheet piling, whether or not drilled, punched or made from assembled elements.
ex 73.12		Steel hoop and strip, the following:—
		(1) Not further worked than hot-rolled (ECSC), the following:
	731211	(a) "electrical", other than silicon electrical;
	731219	(b) other;
		(2) Not further worked than cold-rolled, more than 12 in. in width, the following:
	731221	(a) in coils for the manufacture of tinplate, other than black plate, of a thickness of 0.0142 in. or more;
	731225	(b) "electrical", other than silicon electrical;
	731229	(c) other, except black plate, of a thickness of 0.0142 in. or more;
		(3) Clad, coated or otherwise surface-worked, more than 12 in. in width or, in the case of hot-rolled more than 3/16 in. in thickness, more than 8 in. in width, the following:
	731240	(a) enamelled;
	731251	(b) tinplate (ECSC), not including black plate, (over 12 in. in width only);
	731259	(c) other tinned (over 12 in. in width only);
	731261	(d) electrolytically zinc-coated (electro-galvanised);

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
ex 73.13	731263	(e) otherwise zinc-coated (including hot-dipped galvanised);
	731265	(f) lead-coated;
		(g) not further worked than clad or plated with metal—
	731271	(i) hot-rolled (ECSC);
	731275	(ii) cold-rolled;
	731281	(h) copper-plated;
	731285	(i) nickel-plated or chrome-plated;
	731287	(j) aluminium-coated;
	731288	(k) lacquered, varnished, painted or plastic-coated;
	731289	(l) other, except silvered, gilded or platinum-plated.
		“Electrical” steel sheets and plates (ECSC), except silicon electrical, the following:—
	731311	(1) With a watt-loss, regardless of thickness, of 0.75 watt or less;
	731316	(2) Other.
		Steel sheets and plates, other than “electrical”, the following:—
		(1) Not further worked than hot-rolled (ECSC), of a thickness of:
		(a) more than 4.75 mm—
	731317	(i) with raised or indented patterns;
	731319	(ii) other;
		(b) not less than 3 mm but not more than 4.75 mm—
	731321	(i) with raised or indented patterns;
731323	(ii) other;	
731326	(c) not less than 2 mm but less than 3 mm;	
731332	(d) more than 1 mm but less than 2 mm;	
731334	(e) not less than 0.5 mm but not more than 1 mm;	
731336	(f) less than 0.5 mm;	

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
		(2) Not further worked than cold-rolled, of a thickness of:
	731341	(a) 3 mm or more;
	731343	(b) not less than 2 mm but less than 3 mm (ECSC);
	731345	(c) more than 1 mm but less than 2 mm (ECSC);
	731347	(d) not less than 0.5 mm but not more than 1 mm (ECSC);
	731349	(e) less than 0.5 mm but not less than 0.36 mm [0.0142 in.], and not including black plate;
	731350	(3) Not further worked than varnished, polished or glazed (ECSC), of a thickness of not less than 0.36 mm, and not including black plate;
		(4) Clad, coated or otherwise surface-treated (ECSC), the following:
	731362	(a) enamelled more than 12 in. in width;
	731364	(b) tinplate, not including black plate;
	731365	(c) other tinned;
	731367	(d) electrolytically zinc-coated (electro-galvanised);
		(e) otherwise zinc-coated (including hot-dipped galvanised)—
	731368	(i) corrugated;
	731372	(ii) other;
	731374	(f) lead-coated;
	731376	(g) tinned and printed;
		(h) clad, of thickness of—
	731378	(i) 3 mm or more;
	731379	(ii) less than 3 mm;
	731384	(i) copper-plated;
	731386	(j) nickel-plated or chrome-plated;
	731387	(k) aluminium-plated;
	731388	(l) lacquered, varnished, painted or plastic-coated;
	731389	(m) other coated or plated with metal.
ex 73.15		High carbon steel, the following:—
	736210	(1) Coils for re-rolling (ECSC);

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
	736230	(2) Universal plates (ECSC);
		(3) Bars and rods (including wire rod); angles, shapes and sections; the following:
	736310	(a) structural shapes, not further worked than forged, having a maximum cross-sectional dimension of 3 in. or more;
		(b) not further worked than hot-rolled or extruded (ECSC)—
	736321	(i) wire rod of circular section 0.2 in. or more in diameter, or of any other solid section;
	736329	(ii) bars and rods, of circular section, other than round blooms and billets, or of any other solid section; and structural shapes having a maximum cross-sectional dimension of 3 in. or more;
	736350	(c) not further worked than cold-formed or cold-finished—
		(i) bars and rods of rectangular section and over 12 in. in width;
		(ii) structural shapes having a maximum cross-sectional dimension of 3 in. or more;
		(d) clad or surface-worked—
		(i) not further worked than clad—
	736372	(a) hot-rolled or extruded (ECSC), coated or plated with metal and of rectangular section, of a thickness of less than 3/16 in. and more than 12 in. in width or of a thickness of 3/16 in. or more and more than 8 in. in width;
	736374	(b) cold-formed or cold-finished, coated or plated with metal, of rectangular section and more than 12 in. in width;
	736379	(ii) other, of circular section, except with a diameter of 18.8 mm or less and in coils, or of rectangular section, except cold-finished less than 12 in. in width, or of any other solid section;

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
		(4) Hoop and strip, the following:
	736420	(a) not further worked than hot-rolled (ECSC);
	736450	(b) not further worked than cold-rolled, more than 12 in. in width;
		(c) clad, coated or otherwise surface-treated—
	736472	(i) not further worked than clad, hot-rolled (ECSC), more than 8 in. in width;
	736475	(ii) not further worked than clad, cold-rolled, coated and plated with metal, more than 12 in. in width;
	736479	(iii) other, of a thickness of less than 3/16 in. and more than 12 in. in width or of a thickness of 3/16 in. or more and more than 8 in. in width;
		(5) Sheets and plates, the following:
		(a) not further worked than hot-rolled (ECSC), of a thickness of—
	736521	(i) more than 4.75 mm;
	736523	(ii) not less than 3 mm but not more than 4.75 mm;
	736525	(iii) less than 3 mm;
		(b) not further worked than cold-rolled, of a thickness of—
	736553	(i) 3 mm or more;
	736555	(ii) less than 3 mm (ECSC) but not less than 0.36 mm [0.0142 in.], and not including black plate;
	736570	(c) polished, clad, and coated, other than with metal, or otherwise surface-treated (ECSC), not less than 0.36 mm in thickness and not including black plate.
		Alloy steel, the following:—
		(1) Coils for re-rolling (ECSC), other than tool steel, high-speed tool steel and chipper knife steel, the following:
	737211	(a) for "electrical" sheets and plates, other than silicon electrical;

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
	737219	(b) other, except stainless or heat-resisting;
	737239	(2) Universal plates (ECSC), other than stainless or heat-resisting or tool steel, high-speed tool steel or chipper knife steel, more than 8 in. in width; (3) Bars and rods (including wire rod); angles, shapes and sections; the following: (a) structural shapes, not further worked than forged, of—
	737313	(i) stainless or heat-resisting;
	737314	(ii) high-speed steel;
	737319	(iii) other;
		(b) not further worked than hot-rolled or extruded (ECSC)— (i) wire rod—
	737325	(a) of S, Pb and P steels (free-cutting and other), of circular section, 0.2 in. or more in diameter, or of any other solid section;
	737326	(b) of mangano-silicon steel;
	737329	(c) other, except tool steel, high-speed tool steel and chipper knife steel, of rectangular section 3/16 in. or more in thickness and 8 in. or less in width, or of any other solid section; (ii) other bars and rods; angles, shapes and sections—
	737333	(a) stainless or heat-resisting (structural shapes only);
	737334	(b) high-speed steel (structural shapes only);
	737335	(c) S, Pb and P steels (free-cutting and other), other than round blooms and billets;
	737336	(d) mangano-silicon structural shapes; and mangano-silicon bars and rods, other than round blooms and billets;
	737339	(e) other, except bars and rods of tool steel, high-speed tool steel or chipper knife steel and round blooms and billets;

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
		(c) not further worked than cold-formed or cold-finished—
		(i) angles, shapes and sections made from coils for re-rolling, universal plates, hoop, strip, sheets or plates—
	737343	(a) stainless or heat-resisting;
	737349	(b) other;
		(ii) other angles, shapes and sections; bars and rods—
	737353	(a) stainless or heat-resisting (structural shapes only);
	737354	(b) high-speed steel (structural shapes only);
	737355	(c) S, Pb and P steels (free-cutting or other);
	737359	(d) other, except bars and rods of tool steel, high-speed tool steel and chipper knife steel;
		(d) clad or surface-worked—
		(i) not further worked than clad—
	737372	(a) hot-rolled or extruded (ECSC), clad, or coated or plated with metal;
	737374	(b) cold-formed or cold-finished, more than 12 in. in width and, if coated or plated with metal, less than 3/16 in. in thickness;
	737383	(ii) stainless or heat-resisting, clad, of rectangular section and more than 12 in. in width or, in the case of hot rolled 3/16 in. or more in thickness, more than 8 in. in width;
	737389	(iii) other, except tool steel, high-speed tool steel or chipper knife steel, of rectangular section and more than 12 in. in width or, in the case of hot-rolled 3/16 in. or more in thickness, more than 8 in. in width, or of circular section except with a diameter of 18.8 mm or less and in coils, or of any other solid section;

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
		(4) Hoop and strip, the following:
		(a) not further worked than hot-rolled (ECSC)—
	737421	(i) “electrical”, other than silicon electrical;
	737428	(ii) other, except stainless or heat-resisting and tool steel, high-speed tool steel or chipper knife steel;
		(b) not further worked than cold-rolled, less than 3/16 in. in thickness and more than 12 in. in width—
		(i) “electrical”, other than silicon electrical—
	737451	(a) with watt loss, regardless of thickness, of 0.75 watt or less;
	737452	(b) other;
	737459	(ii) other, except tool steel, high-speed tool steel and chipper knife steel;
		(c) clad, coated or otherwise surface-treated—
		(i) not further worked than clad—
	737472	(a) hot-rolled (ECSC), coated or plated with metal;
	737474	(b) cold-rolled, coated or plated with metal, more than 12 in. in width;
	737483	(ii) stainless or heat-resisting, clad, and coated or plated with metal;
	737489	(iii) other, except tool steel, high-speed tool steel or chipper knife steel, more than 12 in. in width or, in the case of hot-rolled 3/16 in. or more in thickness, more than 8 in. in width;
		(5) Sheets and plates, the following:
	737511	(a) “electrical” (ECSC), other than silicon electrical—
		(i) with a watt loss, regardless of thickness, of 0.75 watt or less;
		(ii) other;

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
	737519	(b) not further worked than hot-rolled (ECSC) and other than stainless or heat-resisting high-speed steel or tool steel, high-speed tool steel and chipper knife steel, of a thickness of—
	737529	(i) more than 4.75 mm;
	737539	(ii) not less than 3 mm but not more than 4.75 mm;
	737549	(iii) less than 3 mm;
		(c) not further worked than cold-rolled and other than stainless or heat-resisting, high-speed steel or tool steel, high-speed tool steel and chipper knife steel, of a thickness of—
	737559	(i) 3 mm or more;
	737569	(ii) less than 3 mm;
		(d) polished, clad, or otherwise surface treated (ECSC)—
	737573	(i) stainless or heat-resisting, clad, or plated or coated with metal;
	737579	(ii) other, except tool steel, high-speed tool steel and chipper knife steel, clad, or coated or plated with metal.
ex 73.16		Steel railway and tramway track construction material (ECSC), the following;—
		(1) New rails, with weight per metre of:
	731614	(a) not less than 20 kg;
	731616	(b) less than 20 kg;
	731617	(2) Used rails;
	731620	(3) Check-rails.
ex 73.18		Steel tubes and pipes and blanks thereof, other than high-pressure hydro-electric conduits, the following:—
		(1) Straight and of uniform wall-thickness, unworked, seamless, of circular cross-section, solely for the manufacture of tubes and pipes with other cross-sections and wall-thicknesses, the following:
	731801	(a) of stainless or heat-resisting steel;
	731805	(b) of other alloy steel;
	731813	(c) other;

Tariff Heading No.	Nimexe Code	Description of Goods
	731851	(2) Straight and of uniform wall-thickness, other, of a maximum length of 4.5m, of alloy steel containing by weight not less than 0.9% but not more than 1.15% of carbon, not less than 0.5% but not more than 2% of chromium and not more than 0.5% of molybdenum;
		(3) Other, the following:
	731821	(a) tubes of the kind referred to in head (2) above but of a length of more than 4.5m;
	731822	(b) electric conduit tubes;
		(c) tubes, of circular cross-section, more than 406.4 mm in external diameter, the following—
	731823	(i) seamless;
	731824	(ii) longitudinally welded;
	731826	(iii) spirally welded;
		(d) tubes, of circular cross-section, not more than 406.4mm in external diameter, the following:
		(i) seamless high pressure petroleum and gas line pipes, of an external diameter of
	731827	(a) not more than 168.3 mm;
	731828	(b) more than 168.3 mm;
		(ii) longitudinally welded high pressure petroleum and gas line pipes, of an external diameter of
	731832	(a) not more than 168.3 mm;
	731834	(b) more than 168.3 mm;
	731836	(iii) spirally welded high pressure petroleum and gas line pipes;
		(iv) tubes fitted with sockets or flanges, the following:
	731838	(a) seamless;
	731841	(b) welded;
	731842	(v) casings or tubings for oil, natural gas and water wells;
		(vi) seamless precision tubes—
	731844	(a) of stainless or heat-resisting steel;
	731846	(b) of other alloy steel;
	731848	(c) other;

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
		(vii) welded precision tubes and thin-walled welded tubes—
	731851	(a) of stainless or heat-resisting steel;
	731852	(b) of other alloy steel;
	731854	(c) other;
		(viii) threaded or threadable tubes (gas pipes), the following—
	731856	(a) seamless, zinc-coated;
	731858	(b) seamless, other;
	731862	(c) welded, zinc-coated;
	731864	(d) welded, other;
		(ix) other seamless tubes, of circular cross-section—
	731866	(a) of stainless or heat-resisting steel;
	731867	(b) of other alloy steel of an external diameter of not more than 168.3 mm;
	731868	(c) of other alloy steel of external diameter of more than 168.3 mm;
	731872	(d) other, of an external diameter of not more than 168.3 mm;
	731874	(e) other, of an external diameter of more than 168.3 mm;
		(x) other welded tubes, of circular cross-section—
	731876	(a) of stainless or heat-resisting steel;
	731878	(b) of other alloy steel;
	731882	(c) other, of an external diameter of not more than 168.3 mm;
	731884	(d) other, of an external diameter of more than 168.3 mm;
	731897	(e) seamless or welded tubes of other than circular or square or rectangular section;
	731899	(f) other tubes.

<i>Tariff Heading No.</i>	<i>Nimexe Code</i>	<i>Description of Goods</i>
ex 73.19		Steel high-pressure hydro-electric conduits, whether or not reinforced, the following:—
	731910	(1) Seamless;
	731930	(2) Longitudinally welded;
	731950	(3) Spirally welded;
	731990	(4) Other.
ex 84.23	842325	Parts for boring and sinking machinery.

PART II

Note. The goods in this Part are for convenience specified by reference to the classification system used by the Department of Trade and Industry for export control purposes.

GROUP 1

Note. Goods specified in the heads of this Group may also be specified in Groups 3E, 3F and 3G of this Part of this Schedule.

Military aircraft, Arms and related materiel, Ammunition, Military Stores and Appliances, and Security and Para-military Police Equipment.

ML1, ML2, ML3, ML16	Arms and ammunition and specially designed components and software therefor, the following:—	
	(1) Small arms, machine guns, rifled and smooth bore guns and specially designed components therefor, the following:—	
	(a) carbines, pistols (including machine pistols), revolvers, rifles and smooth bore guns, except air weapons (other than those declared by the Firearms (Dangerous Air Weapons) Rules 1969 to be specially dangerous)	A
	(b) machine guns and mountings therefor	A
	(2) Large calibre armament or weapons and projectors and military smoke producing appliances, and specially designed components and software therefor, the following:—	
	(a) cannon, guns, howitzers, military flame throwers, mortars, recoilless rifles, projectile launchers, rocket launchers and tank destroyers.....	A

	(b) military smoke, gas and pyrotechnic projectors and appliances specially designed to produce smoke for military purposes	A
	(3) Ammunition, including projectiles, for any of the weapons mentioned in heads (1) or (2) of this entry, and specially designed components and software therefor.....	A
	(4) Forgings, castings and semi-finished products specially designed for any of the foregoing specified in heads (1) to (3) above (inclusive).....	A
ML4, ML16	Bombs, mines, missiles, rockets, torpedoes, demolition charges, pyrotechnic flare signals, apparatus designed for use therewith, and specially designed components and software therefor, the following:—	
	(1) Bombs, torpedoes, grenades (including smoke grenades), smoke canisters, rockets, mines, missiles (guided or unguided), depth charges, fire bombs, incendiary bombs, military demolition charges, devices and kits; and pyrotechnic flare signals for military use, cartridges therefor and simulators thereof	A
	(2) Apparatus and devices specially designed for the handling, control, activation, refuelling, launching, laying, sweeping, discharging, detonation, detection or disruption of items mentioned in head (1) of this entry or of booby traps or of explosive devices.....	A
	(3) Military fuel thickeners specifically formulated for the purpose of producing materials which, when added to petroleum products, provide a gel-type incendiary material for use in bombs, projectiles, flame-throwers or other implements of war.....	A
	(4) Forgings, castings and semi-finished products specially designed for any of the foregoing specified in heads (1) to (3) inclusive	A
ML5	Fire-control equipment and range finders, and specially designed components, accessories and software therefor, the following:—	
	(1) Fire-control, gun-laying, night-sighting, missile-tracking and guidance equipment	A
	(2) Range, position and height-finders, and spotting instruments, specially designed for military purposes.....	A
	(3) Aiming devices, electronic, gyroscopic, acoustic and optical, specially designed for military purposes	A
	(4) Bomb sights, bombing computers, gun sights and periscopes, specially designed for military purposes	A
	(5) Television sighting units specially designed for military use.....	A

ML6, ML16	Tanks and vehicles specially designed for military purposes, engines therefor, and specially designed components and software therefor, the following:—	
	(1) Tanks, and self-propelled guns.....	A
	(2) Military type armed or armoured vehicles and vehicles fitted with mountings for arms.....	A
	(3) Armoured railway trains.....	A
	(4) Military half tracks.....	A
	(5) Military type recovery vehicles.....	A
	(6) Gun carriers and tractors specially designed for towing artillery.....	A
	(7) Trailers specially designed to carry ammunition	A
	(8) Amphibious and deep water fording military vehicles...	A
	(9) Military mobile repair shops specially designed to service military equipment.....	A
	(10) Other vehicles specially designed for military use	A
	(11) Engines specially designed or essentially modified for military use, for the propulsion of the vehicles specified in heads (1) to (10) above (inclusive).....	A
	(12) Pneumatic tyre casings, other than tractor and farm implement types, of a kind specially constructed to be bullet proof or to run when deflated	A
	(13) Forgings, castings and semi-finished products specially designed for any of the foregoing specified in heads (1) to (12) above (inclusive).....	A
ML7	Toxicological agents, noxious chemicals and tear gas and related equipment, and specially designed components and software therefor, the following:—	
	(1) Biological, chemical and radioactive materials adapted for use in war to produce casualties in men or animals or to damage crops	A
	(2) Noxious chemicals, the following:—	
	(a) Bromobenzyl cyanide.....	A
	(b) <i>o</i> Chlorobenzylidenemalononitrile (<i>o</i> Chlorobenzalmalononitrile).....	A
	(c) <i>mono</i> Chloromethyl chloroformate.....	A
	(d) 2-Chlorotriethylamine	A
	(e) Dibenzoxazepine.....	A

ML7 (cont.)	(f) Dibromodimethyl ether.....	A	
	(g) Dichlorodimethyl ether.....	A	
	(h) 2:2'-Dichlorotriethylamine.....	A	
	(i) Diphenylaminechloroarsine.....	A	
	(j) Diphenylchloroarsine.....	A	
	(k) Diphenylcyanoarsine.....	A	
	(l) Ethyl NN-dimethylphosporamidocyanidate.....	A	
	(m) Ethyldibromoarsine.....	A	
	(n) Ethyldichloroarsine.....	A	
	(o) Lewisite (chlorovinylchloroarsine and dichlorodivinyldichloroarsine).....	A	
	(p) Methyldichloroarsine.....	A	
	(q) Mustard gas (dichlorodiethyl sulphide).....	A	
	(r) Phenylcarbylamine chloride (phenylaminocarbonyl chloride).....	A	
	(s) Phenylacetyl chloride (<i>w</i> -Chloroacetophenone).....	A	
	(t) Phenyldibromoarsine.....	A	
	(u) Phenyldichloroarsine.....	A	
	(v) Pinacolyl methylphosphonofluoridate.....	A	
	(w) <i>iso</i> Propyl methylphosphonofluoridate.....	A	
	(x) 2:2':2'' Trichlorotriethylamine.....	A	
	(3) Equipment specially designed for the dissemination of the materials specified in heads (1) and (2) above.....	A	
	(4) Equipment and materials specially designed for defence against and decontamination from the materials specified in heads (1) and (2) above, and for their detection and identifica- tion.....	A	
	ML8	Explosives, propellants and related substances, the follow- ing:—	
		(1) Explosives as defined in section 3 of the Explosives Act 1875, except those specially designed for toys, novelty goods and display fireworks.....	A
		(2) Military propellants and fuels not elsewhere specified...	A
		(3) Military pyrotechnics.....	A
		(4) Additives, precursors and stabilisers, and specially designed software, for the materials specified in heads (1) to (3) above (inclusive).....	A
ML9	Naval equipment and specially designed components, accesso- ries, attachments and software therefor, the following:—		

ML9 (cont.)	(1) Diesel engines of 1,500 brake horse power and over with rotary speed of 700 rev/min or over, specially designed for submarines.....	A
	(2) Electric motors over 1,000 brake horse power, quick reversing type, liquid cooled and totally enclosed, specially designed for submarines.....	A
	(3) Hull penetrators and connectors specially designed for military purposes and enabling interaction with equipment external to a vessel.....	A
	(4) Magnetic pressure and acoustic underwater detection devices specially designed for military use, and controls therefor.....	A
	(5) Non-magnetic diesel engines capable of developing 50 brake horse power and over, specially designed for military purposes.....	A
	(6) Submarine and torpedo nets.....	A
ML9	Ships of war, designed for offensive or defensive action (surface or under-water) whether or not converted to non-military use, and specially designed components, accessories, attachments and software therefor.....	A
ML10	Military aircraft and helicopters, of the piloted or pilotless type, aircraft or helicopter engines and aircraft or helicopter equipment and associated equipment, the following:—	
	(1) Combat aircraft and helicopters and other aircraft and helicopters specially designed for military purposes and any other aircraft and helicopters having special structural features for transporting and airdropping troops, military equipment and supplies.....	A
	(2) Aircraft engines specially designed or adapted for use with aircraft or helicopters specified in head (1) of this entry.	A
	(3) Airborne equipment specially designed for use with aircraft, helicopters or engines specified in heads (1) and (2) of this entry.....	A
	(4) Apparatus and appliances specially designed for use in or with aircraft and helicopters, the following:—	
	(a) pressurised breathing equipment and partial pressure suits.....	A
	(b) anti-g suits.....	A
	(c) military crash helmets.....	A
	(d) military parachutes.....	A
	(e) liquid oxygen converters used for aircraft, helicopters and missiles.....	A

ML10 (cont.)	<p>(f) catapults and cartridge actuated devices used in emergency escape of personnel from aircraft and helicopters..... A</p> <p>(5) Supply-dropping apparatus for use with aircraft specified in head (1) of this entry..... A</p> <p>(6) Pressure refuellers, pressure refuelling equipment, equipment specially designed to facilitate operations in confined areas and ground equipment, not elsewhere specified, developed for aircraft, helicopters or engines specified in heads (1) or (2) of this entry..... A</p> <p>(7) Specially designed components and software for aircraft, helicopters, engines or equipment specified in heads (1) to (5) above (inclusive)..... A</p>
ML11	Electronic equipment specially designed for military use and specially designed components and software therefor..... A
ML12	<p>Photographic and electro-optical imaging equipment, and specially designed components and software therefor, the following:—</p> <p>(1) Cameras, the following:</p> <p style="padding-left: 2em;">(a) air reconnaissance cameras and associated equipment, designed for military purposes..... A</p> <p style="padding-left: 2em;">(b) other cameras and electro-optical imaging devices designed for military purposes..... A</p> <p style="padding-left: 2em;">(c) specialised equipment for the cameras and devices specified in sub-head (b) above designed to make the recorded information usable for military purposes.... A</p> <p>(2) Film processing and printing machines designed for military purposes..... A</p>
ML13	<p>Special armoured equipment and specially designed components therefor, the following:—</p> <p>(1) Armoured plate..... A</p> <p>(2) Combinations of metallic or non-metallic materials specially designed to provide ballistic protection for military systems..... A</p> <p>(3) Military helmets..... A</p> <p>(4) Body armour, bullet-proof or bullet-resistant clothing and flak suits..... A</p>
ML14	Specialised military training equipment and specially designed components, accessories and software therefor..... A

ML15	Military infra-red and thermal imaging equipment and image-intensifier equipment, and specially designed components and software therefor.....	A
ML17	Construction equipment built to military specifications, specially designed for airborne transport, and specially designed components and software therefor.....	A
ML17	Searchlight control units and specially designed components and software therefor.....	A
ML17	Searchlights, power-controlled, designed for military use, and specially designed components and software therefor.....	A
ML17	Self-contained diving and underwater swimming apparatus and specially designed components and software therefor, the following:—	
	(1) Closed and semi-closed circuit (rebreathing) apparatus.	A
	(2) Specially designed components for use in the conversion of open circuit apparatus to military use.....	A
	(3) Articles exclusively designed for military use with self-contained diving and underwater swimming apparatus.....	A
ML17	Silencers and telescopic sights, for firearms, and specially designed components and software therefor.....	A
ML18	Equipment specially designed for the design, examination, development, production, manufacture, testing and checking of goods specified in this Group and specially designed components and software therefor.....	A
ML19	Environmental chambers capable of pressures below 10^{-4} Torr, (0.133 microbar) except equipment fitted with industrial machinery not specified in this Schedule, and specially designed components therefor.....	A
ML20	Cryogenic and superconductive equipment and specially designed components, accessories and software therefor, the following:—	
	(1) Equipment specially designed or configured for installation in a vehicle for military ground, marine, airborne or space applications and capable of operating while the vehicle is in motion and of producing or maintaining temperatures below 103K (-170°C).....	A
	(2) Superconductive electrical equipment (rotating machinery and transformers) designed for operation at temperatures below 103K (-170°C) being equipment specially designed or configured for installation in a vehicle for military ground, marine, airborne or space applications and capable of operating while the vehicle is in motion, except direct-current hybrid	

ML20 (cont.)	homopolar generators having single-pole normal metal armatures which rotate in a magnetic field produced by superconducting windings, provided that such windings are the only superconducting component in the generator.	A
ML22	Electrically triggered shutters of the carbon injection or photochromic function type having a shutter speed of less than 100 microseconds and specially designed components and software therefor, except shutters specially designed for high speed cameras	A
ML23	Directed energy weapon systems and specially designed components and software therefor, the following:— (1) Laser systems specially designed for the destruction or for effecting abortion of the mission of a target	A
	(2) Particle beam and microwave systems capable of the destruction or of effecting abortion of the mission of a target.....	A
ML24	Software not elsewhere specified, the following:— (1) Software specially designed for the modelling, simulation or evaluation of military weapons systems	A
	(2) Software for determining the effects of conventional, nuclear, chemical or biological warfare weapons	A
—	Security and para-military police equipment, the following:— (1) Acoustic devices represented by the manufacturers or suppliers thereof as suitable for riot control purposes, and specialised components therefor	A
	(2) Anti-riot shields and components therefor.....	A
	(3) Leg-irons, shackles (excluding handcuffs) and gangchains, specially designed for restraining human beings..	A
	(4) Portable anti-riot devices for administering an electric shock or an incapacitating substance, and specialised components therefor	A
	(5) Water cannon and components therefor	A

GROUP 2

ATOMIC ENERGY MINERALS AND MATERIALS, AND NUCLEAR FACILITIES,
EQUIPMENT AND APPLIANCES

Note 1: Goods specified in the heads of this Group may also be specified in Groups 3B and 3H of this Part of this Schedule.

Note 2: The definitions applying to crude or semi-fabricated forms are those given under Group 3H.

GROUP 2A

Atomic Energy Minerals and Materials

A1, A2	<p>Nuclear materials, the following:—</p> <p>(1) Special and other fissionable materials, the following:</p> <p style="padding-left: 20px;">(a) plutonium, all isotopes, alloys, compounds and any material containing any of the foregoing..... A</p> <p style="padding-left: 20px;">(b) uranium 233, uranium enriched in the isotopes 235 or 233, alloys, compounds and any material containing any of the foregoing..... A</p> <p style="padding-left: 20px;"><i>Note:</i> “Uranium enriched in the isotopes 235 or 233” is defined as uranium containing the isotopes 235 or 233, or both, in an amount such that the abundance ratio of the sum of these isotopes to the isotope 238 is greater than the ratio of the isotope 235 to the isotope 238 occurring in nature.</p> <p>(2) Source material: any of the following source materials in any form or incorporated in any substance in which the concentration of source material exceeds 0.05%, except compounds of natural uranium or thorium for medical purposes:</p> <p style="padding-left: 20px;">(a) uranium containing the mixture of isotopes occurring in nature..... A</p> <p style="padding-left: 20px;">(b) uranium depleted in the isotope 235..... A</p> <p style="padding-left: 20px;">(c) thorium, except alloys containing less than 5% thorium A</p> <p style="padding-left: 20px;">(d) any of the foregoing in the form of metal, alloy, chemical compound or concentrate A</p>
A3	<p>Deuterium and compounds, mixtures and solutions containing deuterium, including heavy water and heavy paraffins, in which the ratio of deuterium atoms to hydrogen atoms exceeds 1:5,000 by number..... A</p>
A4	<p>Zirconium in which the ratio of hafnium content to zirconium content is less than one part to five hundred parts by weight, the following:—</p> <p>(1) Zirconium and alloys containing more than 50% zirconium, in crude or semi-fabricated forms..... A</p> <p>(2) Zirconium compounds, except zirconium oxide thermally stabilized with calcium oxide or magnesium oxide or both A</p> <p>(3) Manufactures wholly of any of the foregoing A</p>

A5	Nickel powder having a nickel content of 99% or more and a particle size of less than 100 microns, whether compacted or not.....	A
A6	Graphite nuclear grade i.e. having a purity level less than 5 parts per million boron equivalent and with a density greater than 1.5 g/cm ³	A
A7	Lithium, the following:— (1) Lithium and alloys containing 50% or more of lithium, in crude or semi-fabricated forms..... (2) Lithium and alloys, mixtures, concentrates and compounds, containing lithium enriched in the lithium-6 isotope. (3) Alloys containing a higher percentage of magnesium than of any other element and 10% or more of lithium..... (4) Hydrides in which lithium, whether normal, depleted or enriched in the lithium-6 isotope, is compounded with hydrogen or its isotopes or complexed with other metals or aluminium hydride..... (5) Substances not specified above containing lithium enriched in the lithium-6 isotope	A A A A
A8	Hafnium, the following:— (1) Hafnium and alloys containing more than 60% of hafnium, in crude or semi-fabricated forms..... (2) Hafnium compounds containing more than 60% of hafnium..... (3) Manufactures of any of the foregoing	A A A
A9	Beryllium, the following:— (1) Beryllium and alloys containing more than 50% of beryllium, in crude or semi-fabricated forms..... (2) Beryllium compounds	A A
—	Fluorine	A
—	Chlorinetrifluoride.....	A
A12	Tritium, compounds and mixtures containing tritium, in which the ratio of tritium to hydrogen by atoms exceeds 1 part in 1,000, and products containing one or more of the foregoing except	A

A12 (cont.)	<p>(1) labelled compounds not exceeding 100 curies per shipment (In this entry "labelled compounds" means compounds in which one of the atoms is a different isotope from that found normally);</p> <p>(2) luminous paint, self luminous products, gas and aerosol detectors, electron tubes, lightning or static electricity gradient meters, devices designed for the ionisation of air including static elimination devices, ion generating tubes, detector cells of gas chromatography devices, calibration standards, or apparatus and instruments not elsewhere specified in this Schedule incorporating such products or devices, provided that each product or device contains not more than 40 curies of tritium in any chemical or physical form; and</p> <p>(3) compounds and mixtures of tritium, where the separation of the constituents cannot result in the evolution of an isotopic mixture of hydrogen in which the ratio of tritium to hydrogen by atoms exceeds 1 part in 1,000.</p>	
—	<p>Calcium containing both less than 100 parts per million by weight of impurities other than magnesium and less than 10 parts per million by weight of boron.....</p>	A

GROUP 2B

Nuclear Facilities, Equipment and Appliances

B1	<p>Plants for the separation of isotopes of source material and special and other fissionable materials, and specially designed or prepared equipment and components therefor, including:—</p> <p>(1) Valves wholly made of or lined with nickel, nickel alloy, phosphor bronze, stainless steel, aluminium or aluminium alloy, corrosion resistant to uranium hexafluoride (UF₆) or hydrogen fluoride (HF), 0.5 cm or greater in diameter with bellows seal.....</p> <p>(2) Units capable of separating isotopes of source material and special and other fissionable materials, such as:</p> <p style="margin-left: 20px;">(a) Gas centrifuges.....</p> <p style="margin-left: 20px;">(b) Jet nozzle separation units.....</p> <p style="margin-left: 20px;">(c) Vortex separation units.....</p> <p style="margin-left: 20px;">(d) Laser isotopic separation units.....</p> <p style="margin-left: 20px;">(e) Chemical exchange separation units.....</p> <p style="margin-left: 20px;">(f) Electromagnetic separation units.....</p> <p style="margin-left: 20px;">(g) Plasma separation units.....</p> <p style="margin-left: 20px;">(h) Gaseous diffusion separation units.....</p> <p>(3) Blowers and compressors (turbo, centrifugal and axial flow types) wholly made of or lined with nickel, nickel alloy,</p>	A
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B1 (cont.)	phosphor bronze, stainless steel, aluminium or aluminium alloy, corrosion resistant to uranium hexafluoride (UF ₆) or hydrogen fluoride (HF) and having a capacity of 1,700 litres (1.7 m ³) per minute or greater, including compressor seals, except blowers and compressors not so defined.....	A
	(4) Heat exchangers made of aluminium, copper, nickel or nickel alloys, separately or together, and heat exchangers incorporating tubing clad with aluminium, copper, nickel or nickel alloys, separately or together, and in which the other parts are made wholly of the foregoing metals, separately or together, designed to operate at sub-atmospheric pressure with a leak rate of less than 10 pascal (0.1 millibar) per hour under a pressure differential of 10 ⁵ pascal (1 bar) except heat exchangers not so defined	A
	(5) Gaseous diffusion barriers.....	A
	(6) Gaseous diffuser housings	A
B2	Plants for the reprocessing of irradiated nuclear fuel and equipment and components specially designed or prepared therefor, or capable of being adapted for use therein, including:—.....	A
	(1) Fuel element chopping machines.....	A
	(2) Criticality safe tanks (e.g. small diameter, annular or slab tanks).....	A
	(3) Countercurrent solvent extractors.....	A
	(4) Process control equipment or instrumentation specially designed or prepared for monitoring or controlling the reprocessing or irradiated source and special and other fissionable materials	A
	(For process control equipment for lithium, see relevant entry in this Group).	
B3	Nuclear reactors, i.e. reactors capable of operation so as to maintain a controlled, self-sustaining fission chain reaction, and equipment and components specially designed or prepared for use in connection with a nuclear reactor, including:—	
	(1) Pressure vessels, i.e. metal or other vessels as complete units or as major shop-fabricated parts therefor.....	A
	(2) Fuel element handling equipment, including reactor fuel charging and discharging equipment.....	A
	(3) Control rods, including the neutron absorbing part and the support or suspension structures therefor, and control rod guide tubes	A

B3 (cont.)	(4) Electronic controls for controlling the power levels in nuclear reactors, including reactor control rod drive mechanisms and radiation detection and measuring instruments to determine neutron flux levels.....	A
	(5) Pressure tubes.....	A
	(6) Coolant pumps.....	A
	(7) Internals specially designed or prepared for the operation of a nuclear reactor, including core support structures, thermal shields, baffles, core gridplates, diffuser plates.....	A
	(8) Heat exchangers.....	A
B4	Plants specially designed for the fabrication of nuclear reactor fuel elements and specially designed equipment therefor	A
B5	Plants for the production or concentration of heavy water, deuterium, or deuterium compounds, and specially designed or prepared equipment and components therefor.....	A
B6	Plants for the production of uranium hexafluoride (UF ₆) and specially designed or prepared equipment (including UF ₆ purification equipment) and components therefor.....	A
C1	Neutron generator systems, including tubes, designed for operation without an external vacuum system and utilising electrostatic acceleration to induce a tritium-deuterium nuclear reaction.....	A
C2	Power generating or propulsion equipment specially designed or adapted for use with nuclear reactors.....	A
C3	Electrolytic cells for the production of fluorine, with a production capacity greater than 250g of fluorine per hour	A
C4	Equipment specially designed for the separation of isotopes of lithium.....	A
	(For plants for the separation of isotopes other than lithium, see entry for such plants in this Group).	
C5	Equipment specially designed for the production or separation of tritium.....	A
—	Equipment specially designed for the manufacture or assembly of gas centrifuges capable of the enrichment or separation of isotopes and specially designed parts, components and equipment therefor.....	A
	(For gas centrifuge plants, see entry for plants for the separation of isotopes in this Group).	
—	Mass spectrometers and mass spectrometer sources designed for measuring the isotopic composition of uranium hexafluoride (UF ₆) gas, uranium and uranyl compounds.....	A

—	Pressure gauges capable of measuring pressures to 100 Torr (13332.2 newtons per square metre) or less having sensing elements of nickel, nickel alloy, phosphor bronze, stainless steel, aluminium or aluminium alloy, corrosion resistant to uranium hexafluoride (UF ₆) or hydrogen fluoride (HF); and such sensing elements	A
—	Process control equipment or instrumentation specially designed or prepared for monitoring or controlling the reprocessing of irradiated lithium	A

GROUP 3

STRATEGIC GOODS NOT SPECIFIED IN GROUPS 1 AND 2

GROUP 3A

Metal Working Machinery and Associated Equipment

IL1075	Machines, spin-forming and flow-forming, specially designed or adapted for use with numerical or computer controls and specially designed components and software therefor.....	A
IL1080	Specially designed equipment, tooling and fixtures for the manufacture or measuring of gas turbine blades or vanes, the following:—	
	(1) Blade or vane aerofoil or root automatic measuring equipment	A
	(2) Precision vacuum investment casting equipment, including core-making equipment	A
	(3) Small-hole drilling equipment for producing holes having depths more than four times their diameter and less than 0.76 mm in diameter	A
	(4) Directional solidification casting equipment and directional recrystallisation equipment	A
	(5) Segmented cast blade or vane bonding equipment	A
	(6) Integral blade-and-disc casting equipment	A
	(7) Blade or vane casting equipment, except furnaces, molten-metal baths and iron-plating baths.....	A
	(8) Ceramic blade or vane moulding and finishing machines.....	A
	(9) Moulds, cores and tooling for the manufacture and finishing of:	
	(a) cast hollow turbine blades or vanes	A

IL1080 (cont.)	<p>(b) turbine blades or vanes produced by powder compaction..... A</p> <p>(10) Composite metal turbine blade or vane moulding and finishing machines..... A</p> <p>(11) Inertial blade or vane welding machines..... A</p> <p>(12) Specially designed components and accessories for the equipment specified in heads (1) to (11) above (inclusive), and specially designed software for the use of the equipment, components and accessories..... A</p> <p>(See also the entry in Group 4 relating to technology for the use of certain blade or vane machines not specified in this entry).</p>
IL1081	<p>Equipment, tools, dies, moulds and fixtures specially designed or modified for the manufacture or inspection of aircraft, airframe structures and aircraft fasteners, the following:—</p> <p>(1) Equipment, tools, dies, moulds and fixtures for:</p> <p style="padding-left: 20px;">(a) hydraulic stretch-forming—</p> <p style="padding-left: 40px;">(i) of which the machine motions or forces are digitally controlled or controlled by electrical analogue devices; or..... A</p> <p style="padding-left: 40px;">(ii) which are capable of thermal-conditioning the workpiece..... A</p> <p style="padding-left: 20px;">(b) milling aircraft skins or spars..... A</p> <p>(2) Tools, dies, moulds and fixtures for:—</p> <p style="padding-left: 20px;">(a) diffusion bonding..... A</p> <p style="padding-left: 20px;">(b) superplastic forming..... A</p> <p style="padding-left: 20px;">(c) hot die forging..... A</p> <p style="padding-left: 20px;">(d) metal powder compaction by vacuum hot pressing, high pressure extrusion or isostatic pressing..... A</p> <p style="padding-left: 20px;">(e) direct-acting hydraulic pressing of aluminium alloys and titanium alloys..... A</p> <p style="padding-left: 20px;">(f) manufacturing, inspecting, inserting or securing specially designed high-strength aircraft fasteners..... A</p> <p>(3) Specially designed components and accessories for the equipment, tools, dies, moulds or fixtures specified in heads (1) and (2) above, and specially designed software for the use of the equipment, components and accessories..... A</p>
IL1086	<p>Equipment, tools, dies, moulds, fixtures and gauges specially designed or modified for the manufacture or inspection of aircraft and aircraft-derived gas turbine engines the following:</p> <p>(1) Equipment, tools, dies, moulds, fixtures and gauges for:</p> <p style="padding-left: 20px;">(a) automated production inspection A</p>

IL1086 (cont.)	<p>(b) automated welding A</p> <p>(2) Tools, dies, moulds, fixtures and gauges for:</p> <p>(a) solid-state joining by inertial welding or thermal bonding A</p> <p>(b) manufacture and inspection of high-performance gas turbine bearings A</p> <p>(c) rolling specially configured rings such as nacelle rings. A</p> <p>(d) forming and finishing turbine discs..... A</p> <p>(3) Compressor or turbine disc broaching machines A</p> <p>(4) Specially designed components and accessories for the equipment, tools, dies, moulds, fixtures and gauges specified in heads (1) to (3) above (inclusive), and specially designed software for the use of the equipment, components and accessories..... A</p>
IL1088	<p>Machines, gear making or gear finishing, the following:—</p> <p>(1) Bevel gear making machines, the following:</p> <p>(a) gear grinding machines (non-generating type).....A</p> <p>(b) other machines capable of the production of bevel gears having a diametral pitch finer than 48 (a module finer than 0.5 mm) and meeting a quality standard better than Admiralty Class I A</p> <p>(2) Machines capable of the production of gears meeting a quality standard better than British Standard 436:190 Grade 2 . A</p>
IL1091, IL1093	<p>Machine tools and numerical control systems, the following:—</p> <p>(1) Machine tools and dimensional inspection machines equipped or capable of being equipped with numerical control systems (as specified in head (2) below)..... A</p> <p>except</p> <p>(a) boring mills, milling machines and machining centres, having all of the following characteristics—</p> <p>(i) not more than three axes capable of simultaneously coordinated contouring motion;</p> <p>(ii) maximum slide travel in any axis equal to or less than 3,000 mm;</p> <p>(iii) spindle drive motor power of not more than 35 kW;</p> <p>(iv) single working spindle;</p> <p>(v) axial and radial axis motion measured at the spindle axis in one revolution of the spindle equal to or greater than $D \times 2 \times 10^{-5}$ mm TIR (peak to peak) where D is the spindle diameter in millimetres;</p>

IL1091,
IL1093
(cont.)

- (vi) incremental positioning accuracy equal to or greater (coarser) than ± 0.002 mm in any 200 mm of travel; and
- (vii) overall positioning accuracy in any axis equal to or greater (coarser) than—
 - (a) ± 0.01 mm for machines with total length of axis travel of not greater than 300 mm;
 - (b) $\pm (0.01 + (0.0025/300 \times (L-300)))$ mm for machines with a total length of axis travel of greater than 300 mm and not greater than 3,300 mm;
 - (c) ± 0.035 mm for machines with a total length of axis travel greater than 3,300 mm;
- (b) machine tools, other than those specified in sub-head (a) above, and dimensional inspection machines having both of the following characteristics—
 - (i) radial-axis motion measured at the spindle axis equal to or greater than 0.0008 mm TIR (peak to peak) in one revolution of the spindle (for lathes, turning machines, contour grinding machines and similar machinery); and
 - (ii) meeting the requirements specified in sub-heads (a)(i), (vi) and (vii) above.

(Note also the entry in Group 3D relating to machine tools for generating optical quality surfaces).

(2) Units for numerically controlling simultaneously co-ordinated (contouring and continuous path) movements of machines in two or more axes..... A

except those having all of the following characteristics:

- (a) no more than two contouring interpolating axes capable of simultaneous coordination;
- (b) minimum programmable increment equal to or greater than 0.001 mm;
- (c) interfaces limited as follows—
 - (i) no integral interface designed to meet ANSI/-IEEE standard 488-1978, IEC publication 625-1, or any equivalent standard;
 - (ii) no more than two interfaces meeting EIA standard RS-232-C or any equivalent standard;
- (d) on-line (real-time) modification of the tool path, feed rate and spindle data limited to the following—
 - (i) cutter diameter compensation normal to the centreline path;
 - (ii) automatic acceleration and deceleration for starting, cornering and stopping;

IL1091,
IL1093
(cont.)

- (iii) axis transducer compensation including lead screw pitch compensation;
 - (iv) constant surface speed with or without limits;
 - (v) spindle growth compensation;
 - (vi) manual feed rate and spindle speed override;
 - (vii) fixed and repetitive cycles;
 - (viii) tool and fixture offset;
 - (ix) part programme tape editing, excluding source programme language and centreline location data (CLDATA);
 - (x) tool length compensation;
 - (xi) part programme storage;
 - (xii) variable pitch threading;
 - (xiii) inch/metric conversion; and
 - (xiv) feed rate override based on spark voltage for electrical discharge machines;
- (e) word size not greater than 16 bits (excluding parity bit(s));
- (f) software/firmware, including that of any programmable unit or device furnished, not exceeding the control unit functions specified in sub-heads (a) to (e) above (inclusive) and restricted as follows—
- (i) furnishing only the following application programmes, capable of execution without further compilation, assembly, interpretation or processing (other than control unit parameter initialisation) and memory storage loading, and each supplied as an entity and not in modular form—
 - (a) an operating programme allowing the unit to perform its normal functions;
 - (b) one or more diagnostic programmes to verify control or machine performance and permit localisation of hardware malfunctions;
 - (c) a translator programme enabling the end user to programme the control-to-machine interface;
 - (ii) programme documentation for application programmes not containing the following—
 - (a) listing of programme instructions, other than that necessary for diagnostics for routine hardware maintenance;
 - (b) description of programme organisation or function beyond that required for programme use and for maintenance of hardware with which the programmes operate;

IL1091,
IL1093
(cont.)

- (c) flow charts, logic diagrams or the algorithms employed, other than those necessary for use of diagnostics for routine hardware maintenance;
- (d) any reference to specific memory storage locations, other than those necessary for diagnostics for routine hardware maintenance;
- (e) any other information about the design or function of the software which could assist in the analysis or modification of all or part of it.

(3) Direct numerical control systems (DNC) consisting of a dedicated stored-programme computer acting as a host computer and controlling, on-line or off-line, one or more of the numerically controlled machine tools or inspection machines specified in head (1) above, related software therefor and interface and communication equipment for data transfer between the host computer memory, the interpolation functions and the numerically controlled machine tools..... A

(4) Spindle assemblies, consisting of spindles and bearings as a minimal assembly, except those assemblies with axial and radial axis motion measured along the spindle axis in one revolution of the spindle equal to or greater (coarser) than the following:..... A

(a) 0.0008 mm TIR (peak-to-peak) for lathes and turning machines; or

(b) $D \times 2 \times 10^{-5}$ mm TIR (peak-to-peak) where D is the spindle diameter in millimetres, for milling machines, boring mills, jig grinders and machining centres.

(5) Lead screws, including ball nut screws, except those having all of the following characteristics..... A

(a) accuracy equal to or greater (coarser) than 0.004 mm/300 mm;

(b) overall accuracy equal to or greater (coarser) than $(0.0025 + 5 \times 10^{-6} \times L)$ mm where L is the effective length in millimetres of the screw; and

(c) concentricity of the centre line of the journal bearing surface and the centre line of the major diameter of the screw equal to or greater (coarser) than 0.005 mm TIR (peak-to-peak) at a distance of 3 times the diameter of the screw or less from the journal bearing surface.

(6) Linear and rotary position feedback units including inductive type devices, graduated scales and laser systems..... A
except

(a) linear type units having an accuracy equal to or greater (coarser) than $(0.0004 + 13 \times 10^{-6} \times L)$ mm for L equal to or less than 100 mm and

IL1091, IL1093 (cont.)	(0.0015 + 2 × 10 ⁻⁶ × L) mm for L greater than 100 mm, where L is the effective length in millimetres of the linear measurement; and (b) rotary types having an accuracy equal to or greater (coarser) than 2 seconds of arc. (7) Linear induction motors, used as drives for slides, having all of the following characteristics..... A (a) stroke greater than 200 mm; (b) nominal force rating greater than 45N; and (c) minimum controlled incremental movement less than 0.001 mm. (8) Specially designed sub-assemblies and software capable of upgrading the capabilities of numerical control units and machine tools so that they fall within the descriptions in heads (1) to (3) above (inclusive) A
—	Machines, internal grinding (except hand-held drills) of the kind incorporating or specially designed for the utilisation of grinding heads designed or rated for operation at speeds in excess of 120,000 revolutions per minute A

GROUP 3B

Note. Goods specified in the heads of this Group may also be specified in Group 2 of this Part of this Schedule.

Chemical and Petroleum Equipment

IL1110, IL1145	Chemical plant and equipment, the following:— (1) Equipment for the production of liquid fluorine, and specially designed components therefor A (2) Containers, jacketed only, specially designed for the storage and/or transportation of liquid fluorine A Pumps, the following:—
IL1129, IL1131	(1) Vacuum pump systems and specially designed components, controls and accessories therefor, the following: (a) cryopump systems in which the circulation of cooled or liquified gas is used to achieve a vacuum, static or dynamic, by lowering the temperature of the environment, designed to operate at temperatures lower than -200°C measured at atmospheric pressure A (b) vacuum pump systems capable of evacuating a chamber of volume greater than 1 litre to pressures below 10 ⁻⁸ Torr (1.3 × 10 ⁻⁶ Pascals) while the temperature in the chamber is maintained above 800°C A

IL1129, IL1131 (cont.)	(2) Other pumps having either of the following characteristics: (a) designed to move molten metals by electromagnetic forces; or (b) all flow contact surfaces made of materials containing 90% or more, separately or combined, of tantalum, titanium or zirconium, except materials containing more than 97%, but less than 99.7%, titanium.....	A A
IL1133	Pipe valves, cocks and pressure regulators, having all flow contact surfaces made of materials containing 90% or more, separately or combined, of tantalum, titanium or zirconium, except materials containing more than 97%, but less than 99.7%, titanium	A
IL1142	Tubing, the following:— (1) Un-reinforced, heat-shrinkable tubing having an inner diameter of less than 28.57 mm, before shrinkage, and made of, lined with or covered with any of the substances included in sub-head (2)(c) below (2) Re-inforced tubing designed for operating pressures of 210.92 kg/cm ² or greater, whether or not specially processed to make flow surfaces electrically conductive and made of, lined with or covered with any of the substances included in sub-heads (a), (b) or (c) below; and connectors and fittings therefor:..... (a) coagulated dispersion grades of polytetrafluoroethylene; (b) copolymers of tetrafluoroethylene and hexafluoropropylene; (c) copolymers and terpolymers composed of any combination of the monomers tetrafluoroethylene, chlorotrifluoroethylene, vinylidene fluoride, hexafluoropropylene and bromotrifluoroethylene, except the copolymers of tetrafluoroethylene and hexafluoropropylene.	A A A

GROUP 3C

Electrical and Power-Generating Equipment

IL1203	Furnaces, electric vacuum, the following:— (1) Consumable electrode vacuum arc furnaces with a capacity in excess of 20 tonnes..... (2) Skull type vacuum arc furnaces (3) Vacuum induction furnaces with a capacity greater than 2,273 kg designed to operate at pressures lower than 0.05 mm of mercury at temperatures higher than 1,375 K (1,100°C),	A A
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IL1203 (cont.)	<p>from which molten metal may be poured into a mould within the same vacuum chamber without breaking the vacuum.....</p> <p>(4) Vacuum induction furnaces incorporating susceptors, designed to operate at temperatures greater than 2,273 K (2,000°C) and having a working diameter greater than 100 mm.</p> <p>(5) Specially designed components and controls for the furnaces specified in heads (1) to (4) above (inclusive) and specially designed software for the use of such furnaces, components or controls.....</p> <p>In this entry, "vacuum induction furnaces" includes all portions of the furnace system within the vacuum chamber.</p> <p>(Note exception (1) in the entry in Group 3D relating to equipment specially designed for the production of certain nickel-, cobalt- or iron-base alloys.)</p>	<p>A</p> <p>A</p> <p>A</p>
IL1205	<p>Electro-chemical, semi-conductor and radio-active devices for the direct conversion of chemical, solar or nuclear energy to electrical energy, the following:—</p> <p>(1) Electro-chemical devices of the following types:</p> <p>(a) fuel cells operating at temperatures of 523 K (250°C) or lower, including regenerative cells which generate electric power from consumable components all of which are supplied from outside the cell</p> <p>except, save in respect of technological documents relating thereto, those with a maximum output power of more than 10 kW which use gaseous pure hydrogen and oxygen/air reactants, alkaline electrolyte and a catalyst support by carbon either pressed on a metal mesh electrode or attached to a conducting porous plastic.</p> <p>(b) primary cells and batteries having any of the following characteristics—</p> <p>(i) silver-zinc reserve batteries possessing a means of activation and having an open circuit storage life in the unactivated condition, at a temperature of 294 K (21°C) of 3 years or more.....</p> <p>(ii) other primary cells and batteries possessing a means of activation and having an open circuit storage life in the unactivated condition, at a temperature of 294 K (21°C), of ten years or more</p> <p>(iii) utilising a lithium anode with lithium salt solute in organic solvent (non-aqueous) electrolyte and having an energy density at the 24 hour discharge rate of more than 100 W-hrs/lb at 297 K (24°C) and more than 35 W-hrs/lb at 244 K (–29°C).....</p> <p>except, save in respect of technological documents relating thereto, those specially designed</p>	<p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p>

IL1205 (cont.)	for consumer applications in watches, pace-makers, calculators and hearing aids.	
	(2) Photo-voltaic cells, the following:	
	(a) types with a power output of 14 mW or more per sq cm under 100 mW per sq cm tungsten 2,800 K (2,527°C) illumination	A
	(b) gallium arsenide type cells, except those having a power output of less than 4 mW per sq cm under 100 mW per sq cm tungsten 2,800 K (2,527°C) illumination.....	A
	(c) types with a power output of 450 mW or more per sq cm under 10 W per sq cm silicon carbide 1,750 K (1,477°C) illumination	A
	(d) electro-magnetic (including laser) and ionised particle radiation resistant types	A
	(3) Power sources based on radioactive materials systems, other than nuclear reactors	A
	except	
	(a) those having an output power of less than 0.5 W and a total weight (force) of more than 890 N (90.7 kg); and	
	(b) those having an output of 0.5 W or more and an overall efficiency of 6% or less, save in respect of technological documents relating thereto;	
	(c) those specially designed and developed for medical use within the human body.	
	(4) Specially designed components for the equipment specified in heads (1) and (2) above.....	A
	In this entry—	
	“energy density” is the product of the average power in watts and the duration of the discharge in hours to 90% of the initial load voltage divided by the total weight of the cell or battery in pounds;	
	“overall efficiency” is the value obtained by dividing the electrical output in watts by the thermal input in watts. This efficiency is to be measured at the beginning of life of the equipment; and	
	the limit of 523 K relates to the fuel cells alone and not to the fuel conditioning equipment whether it is integrated with or ancillary to such cells.	
IL1206	Plasma arc equipment, the following:—	
	(1) Electric arc devices generating a flow of ionised gas in which the arc column is constricted.....	A
	except	
	(a) devices wherein the flow of gas is for isolation purposes only; and	

IL1206 (cont.)	<p>(b) devices of less than 100 kW for cutting, welding, melting, plating or spraying.</p> <p>(2) Equipment incorporating arc devices as specified in head (1) above</p> <p>(3) Components, accessories, and control or test equipment specially designed for the devices specified in head (1) above, and specially designed software for the use of such devices, equipment, components, accessories or control or test equipment.....</p>	A A
—	<p>Frequency changers capable of a multi-phase electrical output of between 600–2,000 Hz and components and sub-assemblies therefor.....</p>	A
GROUP 3D		
<i>General Industrial Equipment</i>		
IL1301	<p>Equipment specially designed for the production of nickel-, cobalt- or iron-base alloys in crude or semi-fabricated forms having strengths superior to the AISI 300 series (as at May 1982) at temperatures over +922 K (+649°C) under severe environmental conditions</p> <p>except—</p> <p>(1) Electric arc and induction furnaces (other than vacuum induction furnaces used in the production of powders of the aforesaid alloys), basic oxygen furnaces and re-melting equipment using other techniques for the production of carbon steels, low alloy steels and stainless steels;</p> <p>(2) Degassing equipment used for the production of carbon steels, low alloy steels and stainless steels;</p> <p>(3) Extrusion presses, hot and cold rolling mills and swaging and forging machines;</p> <p>(4) Decarburizing, annealing and pickling equipment;</p> <p>(5) Surface-finishing equipment; and</p> <p>(6) Slitting and cutting equipment.</p> <p>(Note as to electric vacuum furnaces, Group 3C above and as to extrusion presses and hot and cold rolling mills, subsequent entries in this Group.)</p>	A
IL1305	<p>Metal rolling mills, the following:</p> <p>(1) Isothermal rolling mills, except those capable of operating only at ambient temperatures</p>	A

IL1306 (cont.)	(2) Other mills specially designed or redesigned for the rolling of metals and alloys with a melting point exceeding 1,900°C.....	A
	(3) Specially designed components, accessories and controls for the mills specified in heads (1) and (2) above, and specially designed software therefor.....	A
	(Note exception (3) in the entry in this Group relating to equipment specially designed for the production of certain nickel-, cobalt- or iron-base alloys.)	
IL1312	Presses the following:—	
	(1) Isostatic presses having either of the following characteristics:	
	(a) capable of achieving a maximum working pressure of 138 MPa (20,000 p.s.i) or greater and possessing a chamber cavity with an inside diameter in excess of 406 mm (16 inches); or	A
	(b) having a controlled thermal environment within the closed cavity and possessing a working cavity with an inside diameter of 127 mm (5 inches) or more.....	A
	(2) Specially designed dies and moulds (except those used in isostatic presses operating at ambient temperatures), components, accessories and control equipment for the presses specified in head (1)(a) and (b) above, and specially designed software for the use of such presses and their control equipment and components.....	A
	In this entry isostatic presses are presses capable of pressurising a closed cavity through various media (gas, liquid, solid particles etc) to create equal pressure in all directions within the cavity upon a workpiece material.	
	(Note exception (3) in the entry in this Group relating to equipment specially designed for the production of certain nickel-, cobalt- or iron-base alloys.)	
IL1352	Nozzles, dies and extruder barrels specially designed for the processing of any of the materials specified in sub-head (1)(b) of the entry in Group 3I relating to fluorocarbon compounds....	A
IL1353	Machinery and apparatus specially designed for the manufacture of cable and optical fibres specified in the entry in Group 3F relating to cable and wire.....	A
IL1354	Equipment designed for the manufacture or testing of printed circuit boards, the following:—	
	(1) Equipment specially designed for removal of resists or printed circuit board materials by dry (e.g. plasma) methods.	A

IL1354 (cont.)	<p>(2) Computer-aided design (CAD) equipment for printed circuit boards, having any of the following functions:</p> <p>(a) generation of artwork design with an interactive capability..... A</p> <p>(b) generation of test string lists for multi-layer boards... A</p> <p>(c) generation of data or programmes for digitally-controlled printed circuit board drilling equipment ... A</p> <p>(d) generation of data or programmes for digitally-controlled printed circuit board shaping and profiling equipment A</p> <p>(e) generation of data for control of the sequencing of processes of the equipment for printed circuit board manufacture covered by head (3) of this entry A</p> <p>(3) High-speed automated continuous panel processors for plating capable of delivering 860 A/m² (80 A/ft²) or more of plate current A</p> <p>(4) Digitally-controlled inspection equipment for the detection of defects in printed circuit boards using optical pattern comparison or other machine scanning techniques A</p> <p>(5) Digitally-controlled electrical test equipment for the identification of open and short circuits on bare printed circuit boards, capable of:</p> <p>(a) continuity testing (4 ohm or less) at a rate of 2,500 or more measurements per second A</p> <p style="padding-left: 20px;">or</p> <p>(b) high voltage testing (50 volts or more) at a rate of 10,000 or more measurements per minute A</p> <p>(6) Digitally-controlled multispindle drills and routers having any of the following characteristics:</p> <p>(a) absolute positioning accuracy of ± 10 micrometers (0.0004 inch) or better..... A</p> <p>(b) minimum time needed for drill bit changes of 5 seconds or less A</p> <p>(c) X and Y positioning speeds of 0.125 metres per second (300 inches per minute) or higher for drilling or for routing A</p> <p>(7) Digitally-controlled cyclic voltametric stripping equipment specially designed for printed circuit board plating bath monitoring and analysis A</p> <p>(8) Specially designed components and accessories and specially designed software for the equipment specified in heads (1) to (7) above (inclusive) A</p> <p>except equipment with controls using any of the following:</p>
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IL1355
(cont.)

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| (v) | equipment for automatic control of crystal taper and diameter | A |
| | except taper and diameter control mechanisms using any of the following techniques— | |
| | (a) radiation pyrometers; | |
| | (b) thermocouples; | |
| | (c) RF power sensors; or | |
| | (d) mass weighing, without digital or anomaly control permitting the growth of semi-conductors. | |
| (vi) | crystal pullers having any of the following characteristics—..... | A |
| | (a) rechargeable without replacing the crucible containers; | |
| | (b) capable of operation at pressures above or below 10^5 pascals (1 atmosphere absolute); | |
| | (c) capable of pulling crystals of a diameter greater than 76.2 mm; | |
| | (d) specially designed to minimise convection currents in the melt by the use of magnetic fields or multiple crucibles: or | |
| | (e) capable of pulling sheet or ribbon crystals | |
| (vii) | vacuum induction-heated zone-refining equipment for operation at a pressure of 0.01 pascal or less | A |
| (d) | equipment for epitaxial growth having any of the following characteristics—..... | A |
| | (i) operation at pressures below 10^5 pascals (1 atmosphere absolute); | |
| | (ii) digitally-controlled; | |
| | (iii) rotating vertical-support radiant-heated reactors; | |
| | (iv) specially designed for processing bubble memories; | |
| | (v) metal-organic chemical vapour deposition reactors; or | |
| | (vi) for liquid phase epitaxy. | |
| (e) | molecular beam epitaxial growth equipment..... | A |
| (f) | magnetically enhanced sputtering equipment..... | A |
| (g) | equipment designed for ion implantation or ion-enhanced or photo-enhanced diffusion | A |
| (h) | equipment for selective or non-selective removal by dry methods of passivation layers, dielectrics, semiconductor materials, resists or metals | A |

IL1355
(cont.)

- except horizontal, cylindrical, plasma etchers without digital control, end-point detection, automatic loading or rotating mechanisms and not having the capability for parallel plate etching as used in semi-conductor device manufacture or vacuum sputtering equipment designed to operate in the sputter-etch mode
- (i) equipment for semi-conductor device fabrication operating below 10^5 pascals (1 atmosphere absolute) for the chemical vapour deposition of oxides, nitrides, metals, and polysilicon, except reactive-sputtering equipment..... A
- (j) electron beam systems (including scanning electron microscopes) capable of mask making or semi-conductor device processing and having any of the following characteristics—..... A
- (i) electrostatic beam deflection;
- (ii) shaped, non-Gaussian beam profile;
- (iii) beam blanking capability;
- (iv) digital-to-analogue conversion accuracy greater than 12 bits;
- (v) digital-to-analogue conversion rate greater than 3 MHz; or
- (vi) target-to-beam position feed-back control precision of 1 micrometre or finer; except
- (a) electron beam deposition systems; and
- (b) scanning electron microscopes having characteristic (iii) which are equipped for Auger analysis.
- (k) automatic sawing equipment, specially designed for the processing of semi-conductor wafers and capable of slicing ingots of 76.2 mm or greater in diameter.... A
- (l) surface-finishing equipment specially designed for the processing of semi-conductor wafers and having any of the following characteristics—..... A
- (i) waxless or non-adhesive mounting;
- (ii) double-sided simultaneous polishing or lapping;
- (iii) capable of polishing and lapping wafers greater than 50.8 mm in diameter; or
- (iv) lapping or polishing in two stages on the same machine.
- (m) interconnection equipment specially designed to permit the integration of equipment specified in this entry into a complete system, and specially designed software therefor A
- (3) Masks, mask substrates, mask-making equipment and

IL1355 (cont.)	<p>image transfer equipment for the manufacture of the devices and components specified in head (2) above, the following:</p> <p>(a) finished masks, reticles and designs therefor A</p> <p>(b) hard surface (e.g. chromium, silicon, iron oxide) coated substrates (e.g. glass, quartz, sapphire) for the preparation of masks having dimensions greater than 76.2 mm by 76.2 mm A</p> <p>(c) computer-aided design (CAD) equipment for transforming schematic or logic diagrams into designs for producing semi-conductor devices or microcircuits, having any of the following functions— A</p> <p style="padding-left: 20px;">(i) storage of pattern cells for sub-division of integrated circuits;</p> <p style="padding-left: 20px;">(ii) scaling, positioning or rotation of pattern cells;</p> <p style="padding-left: 20px;">(iii) interactive graphic capabilities;</p> <p style="padding-left: 20px;">(iv) design rule and circuit checking; or</p> <p style="padding-left: 20px;">(v) circuit layout modification of the arrangement of the elements.</p> <p>(d) mask fabrication machines using photo-optical methods, the following—</p> <p style="padding-left: 20px;">(i) step and repeat cameras capable of producing arrays larger than 63.5 mm by 63.5 mm, or capable of producing a single exposure larger than 3.75 mm by 3.75 mm in the focal plane, or capable of producing useful line widths of 3.5 micrometres or less..... A</p> <p style="padding-left: 20px;">(ii) pattern generators specially designed for the generation or manufacture of masks or the creation of patterns in photosensitive layers and with placement precision finer than 10 micrometres..... A</p> <p style="padding-left: 20px;">(iii) mask fabrication equipment containing automatic adjustment of focus or adjustment of the mask material into the focal plane A</p> <p style="padding-left: 20px;">(iv) equipment for altering masks or reticles to remove defects..... A</p> <p>(e) mask or reticle inspection equipment, the following—</p> <p style="padding-left: 20px;">(i) for comparison with a precision of 0.75 micrometre or finer over an area of 63.5 mm by 63.5 mm or greater A</p> <p style="padding-left: 20px;">(ii) digitally-controlled equipment with a resolution of 0.25 micrometre or finer and with a precision of 0.75 micrometre or finer over a distance in one or two co-ordinates of 63.5 mm or greater A</p> <p style="padding-left: 20px;">(iii) digitally-controlled defect inspection equipment, except conventional scanning electron microscopes not specially designed or instrumented for automatic pattern inspection..... A</p>
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IL1355 (cont.)	<p>(f) align and expose equipment using photo-optical methods, including projection image transfer equipment, capable of performing any of the following functions..... A</p> <p style="padding-left: 20px;">(i) production of a useful pattern size of less than 5 micrometres;</p> <p style="padding-left: 20px;">(ii) alignment with a precision finer than 1 micrometre;</p> <p style="padding-left: 20px;">(iii) field coverage greater than 76.2 mm by 76.2 mm;</p> <p style="padding-left: 20px;">(iv) wafer backside alignment;</p> <p style="padding-left: 20px;">(v) automatic alignment by the sensing of patterns or index marks on the substrate; or</p> <p style="padding-left: 20px;">(vi) projection image transfer for the processing of slices (wafers) of 50.8 mm or greater in diameter (in the case of equipment except non contacting (proximity) image transfer equipment).</p> <p>(g) electron beam, ion beam, or X-ray equipment for projection image transfer A</p> <p>(h) photo-optical or non-photo-optical step and repeat or partial field equipment for the transfer of the image on to the wafer..... A</p> <p>(i) mask contact image transfer equipment for imaging a field greater than 76.2 mm by 76.2 mm A</p> <p>(4) Digitally-controlled inspection equipment for the detection of defects in processed wafers, substrates or chips using optical pattern comparison or other machine scanning techniques, except conventional scanning electron microscopes not specially designed or instrumented for automatic pattern inspection..... A</p> <p>(5) Specially designed digitally controlled measuring and analysis equipment, the following:</p> <p style="padding-left: 20px;">(a) specially designed for the measurement of oxygen or carbon content in semi-conductor materials A</p> <p style="padding-left: 20px;">(b) equipment for concurrent etching and doping profile analysis (employing capacitance-voltage or current-voltage analysis techniques) A</p> <p style="padding-left: 20px;">(c) equipment for line-width measurement with a resolution of 1.0 micrometre or finer A</p> <p style="padding-left: 20px;">(d) specially designed flatness measurement instruments capable of measuring deviations from flatness of 10 micrometres or less with a resolution of 1.0 micrometre or finer..... A</p> <p>(6) Equipment for the assembly of microcircuits specified in head (2) above, the following:—</p> <p style="padding-left: 20px;">(a) digitally-controlled die (chip) mounters and bonders with a positioning accuracy finer than 50 micrometres or incremental steps finer than 6.4 micrometres A</p>
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IL1355 (cont.)	(b) digitally-controlled wire bonders and welders for performing consecutive bonding operations	A
	(c) equipment for producing multiple bonds in a single operation, including but not limited to beam lead bonders, chip carrier bonders and tape bonders	A
	(d) semi-automatic or automatic hot cap sealers, in which the cap is heated locally to a higher temperature than the body of the package, specially designed for ceramic microcircuit packages specified in the entry in Group 3F relating to electronic component assemblies and which have a throughput equal to or greater than one package per minute.....	A
	(7) Digitally-controlled wafer probing equipment having any of the following characteristics:	A
	(a) positioning accuracy finer than 50 micrometres, or incremental steps finer than 6.4 micrometres;	
	(b) individual die location read-out (X-Y position information) during testing;	
	(c) capability of testing devices having more than a total of 24 terminals; or	
	(d) automatic slice (wafer) alignment.	
	(8) Test equipment, except test equipment which is not of a general purpose nature and which is specially designed for, and dedicated to, testing assemblies or a class of assemblies for home and entertainment applications or testing electronic components, assemblies, sub-assemblies and microcircuits not specified in the entry in Group 3F relating to electronic component assemblies provided they do not incorporate computing facilities with user-accessible programming capabilities, the following:—	
	(a) computer-controlled equipment or equipment with a computer-management compatible interface specially designed for testing discrete semi-conductor devices and unencapsulated dice, capable of performing any of the following functions—.....	A
(i) measurement of time intervals of less than 10 nanoseconds;		
(ii) measurement of parameters (such as f_T , S parameters, noise figure) at frequencies greater than 250 MHz;		
(iii) resolution of currents of less than 100 picoamperes;		
(iv) measurement of spectral response at wavelengths outside the range from 450 to 950 nanometres.		
(b) digitally-controlled equipment specially designed for testing microcircuits, and assemblies thereof, capable of performing any of the following functions—.....	A	

IL1355
(cont.)

- (i) functional (truth table) testing at a pattern rate greater than 2 MHz;
- (ii) resolution of currents of less than 1 nanoampere;
- (iii) testing of integrated circuits (not mounted on circuit boards) in packages having more than a total of 24 terminals, except equipment specially designed for and dedicated to the testing of circuits other than those specified in the entry in Group 3F relating to electronic components; or
- (iv) measurement of rise times, fall times and edge placement times with a resolution of less than 20 nanoseconds.

- (c) equipment specially designed for determining the performance of focal-plane arrays at wavelengths greater than 1,200 nanometres, using digitally-controlled measurements or computer-aided evaluation and having any of the following characteristics—..... A
 - (i) using scanning light spot diameters of less than 0.12 mm;
 - (ii) designed for measuring photosensitive performance parameters and for evaluating frequency response, modulation transfer function, uniformity of responsivity or noise;
 - (iii) designed for evaluating arrays capable of creating images of greater than 32 × 32 line elements.
- (d) specially designed for bubble memories..... A

(9) Class 10 filters capable of providing an environment of 10 or fewer particles of 0.3 micrometre or more per cubic foot and filter materials therefor A

(10) Specially designed components, accessories and software for the equipment specified in heads (1) to (9) above (inclusive)..... A

In this entry—

“masks” includes those used in electron beam lithography, X-ray lithography, and for ultraviolet lithography as well as the usual ultraviolet and visible photo-lithography;

“microcircuit” means 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;

“assembly” means a number of components (ie circuit elements, discrete components, microcircuits) connected together to perform a specific function or functions, replaceable as an entity (and normally capable of being disassembled);

“digitally-controlled” refers to automated equipment the

IL1355 (cont.)	functions of which are partially or entirely controlled by stored, digitally-coded, electrical signals; “magnetically enhanced” refers to equipment incorporating a cathode assembly having an integral structure for enhancing plasma intensity; and “discrete semi-conductor devices” include diodes, transistors, thyristors, photocells and solar cells.	
IL1356	Machinery and apparatus for the working of synthetic film used as magnetic recording tape, the following:— Equipment specially designed for the continuous coating of polyester base magnetic tape used as a recording medium specified in sub-head (4) of the entry in Group 3G relating to recording and reproducing equipment, and specially designed components therefor	A
IL1357	Equipment for the production of fibres specified in the entries in Group 3I relating to fibrous and filamentary materials or their composites, the following:— (1) Filament winding machines of which the motions for positioning, wrapping and winding fibres are co-ordinated and programmed in three or more axes, specially designed to fabricate composite structures or laminates from fibrous and filamentary materials; and co-ordinating and programming controls therefor..... (2) Tape-laying machines of which the motions for positioning and laying tape and sheets are co-ordinated and programmed in two or more axes, specially designed for the manufacture of composite airframes and missile structures..... (3) 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..... (4) Specially designed or adapted equipment for the production of fibrous and filamentary materials specified in heads (1) and (2) of the entry in Group 3I relating to fibrous and filamentary materials, the following: (a) equipment for converting polymeric fibres (such as polyacrylonitrile, rayon, or polycarbosilane) including special provision to strain the fibre during heating (b) equipment for the vapour deposition of elements or compounds on heated filamentary substrates..... (c) equipment for the wet-spinning of refractory ceramics (such as aluminium oxide)	A A A A A A A
	(5) Specially designed or adapted equipment for special fibre surface treatment or for producing prepregs and preforms specified in head (3) of the entry in Group 3I relating to fibrous and filamentary materials.....	A

IL1357 (cont.)	Equipment covered by this head includes but is not limited to rollers, tension stretchers, coating equipment, cutting equipment and clicker dies.	
	(6) Specially designed components and accessories and specially designed software, for equipment specified in heads (1) to (5) above (inclusive).....	A
	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 covered by the entry therefor in Group 3I.	
IL1358	Equipment specially designed for the manufacture or testing of devices and assemblies included in heads (2) to (5) (inclusive) of the entry in Group 3G relating to materials composed of crystals having spinel, hexagonal, orthorhombic or garnet crystal structures, and thin film devices and for the manufacture or testing of magnetic recording media, other than tape, specified in head (4) of the entry in Group 3G relating to recording or reproducing equipment, the following:—	
	(1) Equipment for the manufacture of single and multi-aperture forms specified in heads (2) to (4) (inclusive) of the entry in Group 3G relating to materials composed of crystals, and single aperture forms of ferrites having a maximum dimension less than 0.76 mm, the following:	
	(a) automatic presses for the production of the specified forms.....	A
	(b) press dies for the production of the specified forms...	A
	(c) automatic equipment for the monitoring, grading, sorting, exercising or testing of the specified forms....	A
	(2) Equipment for the manufacture of thin film devices and associated equipment, the following:	
	(a) equipment for the manufacture of thin film memory storage or switching devices having square hysteresis loops	A
	(b) automatic equipment for the monitoring, grading, sorting, exercising or testing of thin film (including plated wire and plated rods) memory storage or switching devices.....	A
	(3) Automatic equipment for monitoring, exercising or testing assemblies of any devices specified in heads (2) to (4) (inclusive) of the entry in Group 3G relating to materials composed of crystals	A
	(4) Equipment for the application of magnetic coatings to recording media specified in head (4) of the entry in Group 3G relating to recording or reproducing equipment.....	A

IL1358 (cont.)	(5) Automatic and semi-automatic equipment for monitoring, grading, exercising or testing recording media specified in head (4) of the entry in Group 3G relating to recording or reproducing equipment.....	A
	(6) Specially designed components and software for the equipment specified in heads (1) to (5) (inclusive).....	A
	<i>Note.</i> For magnetic tape production equipment see the entry in this Group relating to equipment for the continuous coating of polyester-base magnetic tape.	
IL1359	Specially designed tooling and fixtures for the manufacture of fibre-optic connectors and couplers specified in head 2(f) of the entry in Group 3F relating to cable and wire.....	A
IL1360	Digitally controlled equipment capable of automatic X-ray orientation and angle correction of double-rotated stress-compensated quartz crystals specified in the entry in Group 3G relating to quartz crystals having piezo-electric qualities, with a tolerance of 10 seconds of arc maintained simultaneously in both angles of rotation.....	A
IL1361	Test facilities and equipment for the design or development of aircraft or gas turbine aero-engines, the following:—	
	(1) 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	A
	(2) Devices for simulating flow-environments of Mach 5 and above, including but not limited to hot shot tunnels, plasma arc tunnels, shock tubes, shock tunnels, gas tunnels and light gas guns	A
	(3) Wind tunnels and devices, other than two-dimensional sections, having unique capabilities for simulating Reynolds number flow in excess of 25×10^6 at transonic velocities.....	A
	(4) Automated control systems, instrumentation (including sensors) and automated data-acquisition equipment, specially designed for use with wind tunnels and devices specified in heads (1) to (3) above (inclusive).....	A
	(5) Models, specially designed for use with wind tunnels, of aircraft, helicopters, airfoils, spacecraft, space launch vehicles or rockets specified in the entries in Group 1 relating thereto or of surface-effect vehicles specified in head (2) of the entry in Group 3E relating to ships.....	A
	(6) Specially designed electromagnetic interference and electromagnetic pulse simulators.....	A
	(7) Specially designed test facilities and equipment for the	

IL1361 (cont.)	<p>development of gas turbine aero-engines and components, the following:—</p> <p>(a) special test facilities capable of applying dynamic flight loads, measuring performance or simulating the design operating environments for rotating assemblies or aero-engines..... A</p> <p>(b) test facilities, test rigs and simulators for measuring combustion system and hot gas flow path performance, heat transfer and durability for static assemblies and aero-engine components..... A</p> <p>(c) specially designed test rigs, equipment or modified gas turbine engines which are used for development of gas turbine aero-engine internal flow systems (gas path seals, air-oil seals and disc cavity flow fields)..... A</p> <p>(8) Specially designed components, accessories and software for the facilities and equipment specified in heads (1) to (7) above (inclusive)..... A</p>
IL1362	<p>Vibration test equipment and ancillary equipment therefor, the following:—</p> <p>(1) Vibration test equipment using digital-control techniques and specially designed ancillary equipment and software therefor..... A</p> <p>except</p> <p>(a) mechanical and pneumatic exciters (thrusters);</p> <p>(b) other individual exciters (thrusters) with a maximum thrust of less than 100 kN;</p> <p>(c) vibrometers;</p> <p>(d) analogue equipment; and</p> <p>(e) other ancillary equipment unless falling within a description in an entry in Groups 3F or 3G.</p> <p>(2) High intensity acoustic test equipment having either of the following characteristics:</p> <p>(a) capable of producing an overall sound pressure level of 140 dB or greater (referenced to $2 \times 10^{-5} \frac{\text{N}}{\text{m}^2}$) A</p> <p>(b) having a rated output of 4 kW or greater..... A</p> <p>and especially designed ancillary equipment and software therefor..... A</p> <p>except</p> <p>(i) analogue equipment; and</p> <p>(ii) other ancillary equipment unless falling within a description in an entry in Groups 3F or 3G.</p> <p>(3) Ground vibration (including modal survey) test equipment which uses digital-control techniques, and specially designed ancillary equipment and software therefor..... A</p>

IL1362 (cont.)	except	
	(a) analogue equipment; and	
	(b) other ancillary equipment unless falling within a description in an entry in Groups 3F or 3G.	
IL1363	Specially designed water tunnel equipment, components, accessories and data bases for the design and development of vessels, the following:—	
	(1) Automated control systems, instrumentation (including sensors) and data acquisition equipment specially designed for water tunnels.....	A
	(2) Automated equipment to control air pressure acting on the surface of the water in the test section during the operation of the water tunnel.....	A
	(3) Components and accessories for water tunnels, the following:—	
	(a) balance and support systems.....	A
	(b) automated flow or noise measuring devices.....	A
	(c) models of hydrofoil vessels, surface-effect vehicles and specially designed equipment and components specified in heads (1), (2) and (4) of the entry in Group 3E relating to ships, for use in water tunnels.....	A
	(4) Data bases generated by use of equipment specified in heads (1) to (3) above (inclusive).....	A
	(5) Specially designed software for the equipment, components, accessories and data bases specified in this entry.....	A
IL1364	Machinery and equipment for the manufacture of hydrofoil vessel and surface-effect vehicle structures and components, the following:—	
	(1) Specially designed equipment for manufacturing anisotropic, orthotropic or sandwich structures specified in sub-head (4)(c) of the entry in Group 3E relating to ships.....	A
	(2) Specially designed equipment for the production and testing of flexible materials for skirts, seals, air curtains, bags and fingers for surface-effect vehicles.....	A
	(3) Specially designed equipment for the production of water-screw propellers specified in head (5) of the entry in Group 3E relating to ships.....	A
	(4) Specially designed equipment for the production, dynamic balancing and automated testing and inspection of lift fans for surface-effect vehicles.....	A
	(5) Specially designed equipment for the production of	

IL1364 (cont.)	water-jet propulsion pumps rated at 3,000 hp or more, or multi-pump system equivalents thereof.....	A
	(6) Specially designed equipment for the production, dynamic balancing and automatic testing of sectored disc and concentric-drum rotors for DC homopolar machines	A
	(7) Specially designed components and accessories for the equipment specified in heads (1) to (6) above (inclusive)	A
IL1365	Equipment specially designed for in-service monitoring of acoustic emissions in airborne vehicles, or in under-water vehicles specified in the entry in Group 3E relating to deep submergence vehicles, capable of discriminating acoustic emissions related to crack growth from innocuous noise sources and capable of spatial location of the crack, and specially designed components, accessories and software therefor	A
IL1370	Machine tools for generating optical quality surfaces and specially designed components, accessories and software therefor, the following:—	
	(1) Turning machines using a single point cutting tool and having all of the following characteristics:.....	A
	(a) slide positioning accuracy finer than 0.0005 mm per 300 mm of travel, TIR (peak-to-peak);	
	(b) slide positioning repeatability finer than 0.00025 mm per 300 mm of travel, TIR (peak-to-peak);	
	(c) spindle runout (radial and axial) less than 0.0004 mm TIR (peak-to-peak);	
	(d) angular deviation of the slide movement (yaw, pitch and roll) less than 2 seconds of arc (peak-to-peak) over full travel; and	
	(e) slide perpendicularity less than 0.001 mm per 300 mm of travel, TIR (peak-to-peak).	
	In this entry evaluation of performance shall be made under conditions yielding the most accurate values, including but not limited to the incorporation of control systems which permit mechanical, electronic or software compensation.	
	(2) Fly cutting machines having both of the following characteristics:.....	A
	(a) spindle run-out (radial and axial) less than 0.0004 mm TIR (peak-to-peak);	
	(b) angular deviation of slide movement (yaw, pitch and roll) less than 2 seconds of arc (peak-to-peak) over full travel.	
	(3) Specially designed components, the following:	
	(a) spindle assemblies, consisting of spindles and bearings	

IL1370 (cont.)	as a minimum assembly, except those assemblies with axial and radial axis motion measured along the spindle axis in one revolution of the spindle equal to or greater than 0.0008 mm TIR (peak-to-peak).....	A
	(b) linear induction motors used as drives for slides having all of the following characteristics—.....	A
	(i) stroke greater than 200 mm;	
	(ii) nominal force rating greater than 45N; and	
	(iii) minimum controlled incremental movement less than 0.001 mm.	
	(4) Specially designed accessories, the following: single point diamond cutting tool inserts having all of the following characteristics—.....	A
	(a) flawless and chip-free cutting edge when magnified 400 times in any direction;	
	(b) cutting radius between 0.1 mm and 5 mm; and	
	(c) cutting radius out-of-roundness less than 0.002 mm TIR (peak-to-peak).	
IL1371	Anti-friction bearings and components therefor, the following:—	
	(1) Ball and roller bearings having an inner bore diameter of 10 mm or less and having tolerances specified in Table 2 (EP5) of British Standard 292: 1969, or better and either of the following characteristics:	
	(a) made of any material.....	A
	except	
	(i) low carbon steel containing not more than 0.4% of carbon and no other elements other than those present as impurities or in such low quantities as not to modify the basic characteristics of the steel;	
	(ii) high carbon chromium steel types Steel-534A99 and 535A99 as specified in British Standard 970: Part 2: 1970, or equivalent types normally used in the manufacture of ball or roller bearings;	
	(iii) nickel-molybdenum steel type Steel-665M17 as specified in British Standard 970: Part 3: 1971, or equivalent types normally used in the manufacture of ball or roller bearings; and	
	(iv) stainless steel type AISI-440C (SAE-51440C) or equivalent types normally used in the manufacture of ball or roller bearings; or	
	(b) processed by heat treatment for the purpose of stabilising such bearings for use at normal temperatures over 150°C.....	A

IL1371 (cont.)	<p>(2) Ball and roller bearings (except separable ball bearings and thrust ball bearings) having an inner bore diameter exceeding 10 mm and having tolerances specified in Table 3 (EP7) of British Standard 292: 1969, or better, and either of the characteristics in sub-heads (1)(a) or (1)(b) of this entry.....</p> <p>(3) Ball and roller bearings having tolerances better than those specified in Table 3 (EP7) of British Standard 292: 1969...</p> <p>(4) Gas-lubricated foil bearings.....</p> <p>(5) Components of ball and roller bearings, usable only for bearings specified in heads (1) to (3) above (inclusive), the following: outer rings, inner rings, retainers, balls, rollers and sub-assemblies</p> <p>This entry also covers bearings having tolerances specified in imperial measures which are equivalent to the metric tolerances specified in British Standard 292: 1969.</p> <p>This entry does not cover hollow bearings.</p>	<p>A</p> <p>A</p> <p>A</p> <p>A</p>
IL1385	Specially designed production equipment for compasses, gyroscopes (gyros), accelerometers and inertial equipment specified in the entry in Group 3E relating to compasses, gyroscopes (gyros), accelerometers and inertial equipment.....	A
IL1391	<p>Robots, robot controllers and robot end-effectors, the following:—</p> <p>(1) Robots having any of the following characteristics:</p> <p>(a) capable of employing feedback information on-line (real-time) from one or more sensors to generate programmes or modify programmed instructions on numerical programme data</p> <p>except those using information derived only from sensors used to measure—</p> <p>(i) the velocity, position (other than inertial position measuring systems), drive motor current, voltage, fluid or gas pressure or temperature of the robot;</p> <p>(ii) through-the-arc current (or voltage) for weld seam tracking; or</p> <p>(iii) binary or scalar values for—</p> <p>(a) position, via photo-electric, inductive or capacitive proximity sensors;</p> <p>(b) tool drive motor voltages or current or hydraulic/pneumatic pressure for determination of force or torque; and</p> <p>(b) tool drive motor voltage or current or hydraulic/pneumatic pressure for determination of force or torque; and</p> <p>(c) external safety functions.</p>	<p>A</p>

IL1391 (cont.)	<p>(b) specially designed to comply with national safety standards applicable to explosive munitions environments A</p> <p>(c) incorporating means of protecting hydraulic lines against externally induced punctures caused by ballistic fragments and designed to use hydraulic fluids with flash points higher than 839K (566°C)..... A</p> <p>(d) specially designed for underwater use A</p> <p>(e) operable at altitudes exceeding 30,000 metres A</p> <p>(f) specially designed for outdoor applications and meeting military specifications therefor A</p> <p>(g) specially designed or rated for operating in an electromagnetic pulse (EMP) environment A</p> <p>(h) specially designed or rated as radiation-hardened beyond that necessary to withstand normal industrial (other than nuclear industry) ionising radiation A</p> <p>(i) equipped with robot manipulator arms which contain titanium-based alloys specified in the entry in Group 3H relating thereto or fibrous and filamentary materials specified in the entry in Group 3I relating thereto A</p> <p>(j) equipped with precision measuring devices specified in the entry in Group 3F relating to precision linear and angular measuring systems A</p> <p>(k) specially designed to move autonomously its entire structure through three-dimensional space in a simultaneously coordinated manner A</p> <p>except systems in which the robot moves on a fixed track.</p> <p>(2) Electronic controllers having any of the following characteristics:</p> <p>(a) controllers specially designed to be part of a robot specified in sub-heads (b) to (h) inclusive, (j) or (k) of head (1) above A</p> <p>(b) minimum programmable increment less (finer) than 0.001 mm per linear axis A</p> <p>(c) having more than one integral interface which meets or exceeds ANSI/IEEE standard 488-1978, IEC publication 625-1 or any equivalent standard for parallel data exchange A</p> <p>(d) capable of being programmed by means other than lead-through, key-in or teach-pendant techniques..... A</p> <p>(e) word size exceeds 16 bit (excluding parity bits)..... A</p> <p>(f) incorporating interpolation algorithms for an order of interpolation higher than linear or circular A</p>
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IL1391 (cont.)	<p>(g) permitting on-line (real-time) generation or modification of the programmed path, velocity and functions other than the following—</p> <p style="text-align: right;">A</p> <p>(i) manual velocity override;</p> <p>(ii) fixed linear or rotary axis offset;</p> <p>(iii) manual robot path editing (including manual path compensation) excluding source language used to programme automatically the robot path, velocity or function;</p> <p>(iv) branching to pre-programmed modifications of the robot path, velocity or function;</p> <p>(v) fixed cycles;</p> <p>(vi) key-in teach-in modifications.</p> <p>(3) End-effectors having any of the following characteristics:</p> <p>(a) equipped with one or more sensors, except sensors used to measure the parameters or values specified in sub-heads (a)(i), (ii) or (iii) of head (1) above;.....</p> <p style="text-align: right;">A</p> <p>(b) having integrated computer-aided data processing.....</p> <p style="text-align: right;">A</p> <p>except those using sensors used to measure the parameters or values specified in sub-heads (a)(i), (ii) or (iii) of head (1) above;</p> <p>(c) equipped with an integral interface which meets or exceeds ANSI/IEEE Standard 488-1978, IEC publication 625-1 or any equivalent standard for parallel data exchange.....</p> <p style="text-align: right;">A</p> <p>(d) having any of the characteristics specified in sub-heads (b) to (h) inclusive or (j) of head (1) above.....</p> <p style="text-align: right;">A</p> <p>(4) Specially designed components and specially designed software for the equipment specified in heads (1) to (3) above (inclusive)</p> <p>In this entry—</p> <p>“robot” means a manipulation mechanism which is reprogrammable, multifunctional and capable of positioning or orientating material, parts, tools or special devices through variable movements in three-dimensional space. It incorporates two or more closed or open loop servo-devices (including stepping motors) and is reprogrammed by means of the teach/playback method, an electronic computer or a programmable logic controller;</p> <p>“end-effectors” include grippers, active tool units (being devices for applying motive power, process energy or sensing to the workpiece) and any other tooling that is attached to the baseplate on the end of the robot’s manipulator arms; and</p> <p>“sensor” means a detector of a physical phenomenon, the</p>
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IL1391 (cont.)	output of which (after conversion into a signal that can be interpreted by a controller) is able to generate programmes or modified programmed instructions or numerical programme data, and includes sensors with machine vision, infrared imaging, acoustical imaging, tactile feel, inertial position measuring, optical or acoustic ranging or force or torque measuring capabilities.
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GROUP 3E

Aircraft, Compasses, Gyroscopic Apparatus, Marine Equipment and Ships (other than Warships and Naval Equipment)

IL1416	Ships, surface-effect vehicles, water-screw propellers, and specially designed components, the following:—
	(1) Hydrofoil vessels with automatically controlled foil systems and capable of a speed of more than 40 knots in rough water (sea state five)..... S
	(2) Ships, sea going, including sea going fishing vessels and coasters, designed for speeds of over 26 knots when fully loaded..... S
	(3) Ships with hulls and propulsion machinery made wholly or primarily of non-magnetic materials S
	(4) Ships with decks and platforms specially strengthened to receive weapons S
	(5) Ships fitted with any of the following:
	(a) apparatus and equipment specified in Group 1 S
	(b) apparatus and equipment specified in the entries in Group 3 relating to—
	(i) marine or terrestrial acoustic or ultrasonic systems for detecting or locating underwater or subterranean objects or features; S
	(ii) communication, detection and tracking equipment; S
	(iii) navigation, direction finding, radar equipment; or. S
	(iv) compasses and gyroscopic apparatus; or
	(c) degaussing equipment S
	(6) Specially designed components for ships specified in heads (1) to (5) above (inclusive), the following:—
	(a) advanced hull forms incorporating any of the following:
	(i) stepped hulls for hydrofoil vessels;..... A
	(ii) hulls for air cushion vehicles with trapezoidal platforms;..... A

IL1416 (cont.)	(iii) hulls for surface-effect vehicles with catamaran-like walls; or.....	A
	(iv) hulls for wing-in-ground effect vehicles	A
	(b) fully submerged subcavitating or super-cavitating hydrofoils.....	A
	(c) lightweight structural components for hydrofoil vessels and surface-effect vehicles, constructed using anisotropic, orthotropic or sandwich construction methods.....	A
	(d) flexible skirts, seals and fingers for surface-effect vehicles.....	A
	(e) systems for automatically controlling the stability of hydrofoil vessels or surface-effect vehicles.....	A
	(f) power transmission shaft systems incorporating composite material components, for hydrofoil vessels and surface-effect vehicles.....	A
	(g) lightweight, high capacity (K factor greater than 150) gearing (planetary, cross-connect and multiple input/output gears and bearings) for hydrofoil vessels and surface-effect vehicles.....	A
	(h) water-cooled electrical propulsion machinery (motor and generator), including sectored-disc and concentric-drum motors for DC homopolar machines, for hydrofoil vessels and surface-effect vehicles.....	A
	(i) superconducting electrical propulsion machinery for hydrofoil vessels and surface effect vehicles.....	A
	(j) lift fans for surface-effect vehicles, rated at more than 400 hp.....	A
	(k) water-jet propulsor systems rated at 3,000 input hp or more for hydrofoil vessels and surface-effect vehicles ..	A
	(l) moisture and particulate separator systems capable of removing 99.9% of particles larger than two micrometres in diameter with a maximum pressure loss of 1.6 kPa (16 millibar), for gas turbine engine air inlets for hydrofoil vessels and surface-effect vehicles.....	A
	(7) Water-screw propellers, the following:—	
	(a) supercavitating propellers rated at more than 10,000 hp.....	A
	(b) contrarotating propellers rated at more than 20,000 hp.....	A
	(c) controllable-pitch propellers rated at more than 20,000 hp.....	A
	(d) ventilated, base-ventilated and super-ventilated propellers	A
IL1418	Deep submergence vehicles, and equipment, components and materials therefor, the following:—	

IL1418 (cont.)	(1) Deep submergence vehicles, whether or not for operation manned or unmanned, tethered or untethered, capable of operating at depths exceeding 1,000 metres.....	A
	(2) Specially designed equipment, components and materials for the vehicles specified in head (1), including but not limited to pressure housings or pressure hulls specially designed for normal operating pressures of 101 bars or greater..	A
IL1425	Floating docks and software therefor, the following:—	
	(1) Floating docks specially designed for use at remote locations, without support from shore bases.....	A
	(2) Floating docks specially equipped to permit the operation, maintenance or repair of nuclear reactors.....	A
	(3) Floating docks having both of the following characteristics:.....	A
	(a) a lifting capacity of more than 40,000 short tons (36,364 tonnes); and	
	(b) larger than 120 metres in length and 30 metres in width, measured between the pontoons.	
	(4) Specially designed software for computer-controlled pumping and flooding systems for the floating docks specified in heads (1) to (3) above (inclusive) to permit the docking of listing vessels	A
	(For technology relating to this entry, see the entry in Group 4 relating thereto).	
IL1431	Marine gas turbine engines for marine propulsion or ship-board power generation, whether originally designed as such or adapted for such use, and specially designed components therefor.....	A
IL1460	Aircraft and helicopters, aircraft engines and aircraft and helicopter equipment, the following:—	
	(1) Aircraft and helicopters, having a maximum all up weight of 680 Kg or more, incorporating or equipped with equipment specified in Group 1, other than in the entry in that group relating to military aircraft and helicopters, or in the entries in Group 3 relating to navigation, direction finding, radar and airborne communication equipment, or to compasses, gyroscopes, accelerometers and inertial equipment.....	A
	(2) Helicopter power transfer systems.....	A
	except those for use in civil helicopters only, the following:	
	(a) those which have been in civil use in bona fide civil helicopters for more than 8 years; and	
	(b) those for replacement in or servicing of specific, previously exported helicopters.	

IL1460 (cont.)	<p>(3) Gas turbine engines and auxiliary power units (APUs) for use in aircraft or helicopters A</p> <p>except those for use in civil helicopters only, the following:</p> <p style="padding-left: 20px;">(a) jet, turboprop and turboshaft aircraft engines in civil use in bona fide civil aircraft or civil helicopters for more than 8 years; and</p> <p style="padding-left: 20px;">(b) gas turbine powered aircraft APUs in civil use in bona fide civil aircraft or civil helicopters for more than 8 years.</p> <p>(4) Specially designed components for gas turbine engines, APUs and helicopter power transfer systems specified in heads (2) and (3) above, the following:</p> <p style="padding-left: 20px;">(a) hot-section components..... A</p> <p style="padding-left: 20px;">(b) engine control components..... A</p> <p style="padding-left: 20px;">(c) gas turbine engine or APU rotor system components (including bearings)..... A</p> <p>(For technology relating to this entry, see the entry in Group 4 relating thereto).</p>
IL1465	<p>Spacecraft and launch vehicles, the following:—</p> <p style="padding-left: 20px;">(1) Spacecraft, manned or unmanned, (not including their payloads unless these fall within a description set out elsewhere in this Schedule), except scientific space probes which do not contain equipment specified either in head (3) below or elsewhere in this Schedule..... A</p> <p style="padding-left: 20px;">(2) Launch vehicles for spacecraft specified in head (1) above..... A</p> <p style="padding-left: 20px;">(3) Propulsion systems, guidance equipment, attitude control equipment; and on-board communication equipment for remote control of the equipment specified in heads (1) and (2) above..... A</p> <p style="padding-left: 20px;">(4) Specially designed components for any of the foregoing.. A</p>
IL1485	<p>Compasses, gyroscopes (gyros), accelerometers and inertial equipment, the following:—</p> <p style="padding-left: 20px;">(1) Accelerometers with a threshold of 0.005 g or less, of a linearity error within 0.25% of full scale output, or both, which are designed for use in inertial navigation systems or in guidance systems, of all types..... A</p> <p style="padding-left: 20px;">(2) Automatic pilots used for purposes other than aircraft control and specially designed integration software therefor, except marine types for surface vessels A</p> <p style="padding-left: 20px;">(3) Gyro compasses with provision for determining and transmitting ship's level reference data (roll, pitch) in addition to own ship's course data A</p>

IL1485 (cont.)	<p>(4) Gyro-astro compasses and other devices which derive position or orientation by means of automatically tracking celestial bodies A</p> <p>(5) Gyro-stabilisers used for purposes other than aircraft control, except those for stabilising an entire surface vessel A</p> <p>(6) Gyros with a rated free directional drift rate of less than 0.5° (1 Sigma or root mean square) per hour in a 1 g environment A</p> <p>(7) Continuous output accelerometers which use servo or force balance techniques and gyros, both specified to function at acceleration levels greater than 100 g A</p> <p>(8) Inertial or other equipment using accelerometers specified in heads (1) or (7) above or gyros specified in heads (6) or (7) above, and systems incorporating such equipment and specially designed integration software therefor A</p> <p>(9) Integrated flight instrument systems which include gyro-stabilisers or automatic pilots for aircraft and specially designed integration software therefor A except those systems integrated solely for VOR/ILS navigation and approaches.</p> <p>(10) Specially designed testing, calibration and alignment equipment for the equipment specified in heads (1) to (9) above (inclusive)..... A</p> <p>(11) Specially designed components for the equipment specified in heads (1) to (10) above (inclusive)..... A</p>
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GROUP 3F

Note. Goods specified in the heads of this Group may also be specified in Group 1 of this part of this Schedule.

Electronic Equipment including Communications and Radar

IL1501	<p>Navigation, direction finding, radar and airborne communication equipment, the following:—</p> <p>(1) Airborne communication equipment having any of the following characteristics:</p> <p style="padding-left: 20px;">(a) designed to operate at frequencies greater than 156 MHz..... A</p> <p style="padding-left: 20px;">(b) incorporating facilities for:—</p> <p style="padding-left: 40px;">(i) the rapid selection of more than 200 channels per equipment, or A</p> <p style="padding-left: 40px;">(ii) equipment using frequency synthesis techniques. A</p>
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IL1501 (cont.)	<p>except conventional equipment operating in the frequency range of 108 to 136 MHz with 720 channels or fewer at not less than 25 kHz spacing;</p> <p>(c) rated for continuous operation over a range of ambient temperatures extending from below -55°C to above $+55^{\circ}\text{C}$..... A</p> <p>or</p> <p>(d) designed for modulating methods employing any form of digital modulation using time and frequency redundancy such as "Quantized Frequency Modulation" (QFM)..... A</p> <p>(2) Airborne navigation and direction finding equipment, the following:—</p> <p>(a) equipment designed to make use of the Doppler frequency phenomena..... A</p> <p>(b) equipment utilising either or both of the following characteristics:..... A</p> <p style="padding-left: 20px;">(i) the constant velocity; and/or</p> <p style="padding-left: 20px;">(ii) the rectilinear propagation of electromagnetic waves having a frequency less than 4×10^{14} Hz (0.75 microns)..... A</p> <p>(c) radio altimeters, the following—</p> <p style="padding-left: 20px;">(i) pulse modulated..... A</p> <p style="padding-left: 20px;">(ii) frequency modulated having a displayed electrical output accuracy better than ± 0.914 m over the whole range between 0 and 30.4 m or $\pm 3\%$ above 30.4 m..... A</p> <p style="padding-left: 20px;">(iii) frequency modulated using other than conventional techniques..... A</p> <p>(d) direction finding equipment, operating at frequencies greater than 5 MHz, except direction finding equipment specially designed for search and rescue purposes and operating under crystal control at a frequency of 121.5 MHz or on alternating frequencies of 121.5 MHz and 243 MHz and personal locator beacons operating on such frequencies including those also having an additional channel selectable for voice mode only..... A</p> <p>(e) equipment rated for continuous operation over a range of ambient temperatures extending from below -55°C to above $+55^{\circ}\text{C}$..... A</p> <p>except equipment assemblies for civil marine automatic radar plotting aids or electronic relative motion analysers designed to achieve the requirements published by the International Maritime Organisation in accordance with the Safety of Life at Sea (SOLAS) Conventions, provided the designed tracking speeds do not exceed relative values of more than 150 Knots (77.1 metres/second).</p>
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IL1501 (cont.)	<p>(3) Airborne radar equipment..... A</p> <p>(4) Ground and marine radar equipment, the following:</p> <p style="padding-left: 20px;">(a) equipment operating at a frequency of less than 1.5 GHz and having a peak output power from the transmitter greater than 2.5 MW..... A</p> <p style="padding-left: 20px;">(b) equipment operating at a frequency within the range 1.5 to 3.5 GHz and having a peak output power from the transmitter greater than 1.5 MW..... A</p> <p style="padding-left: 20px;">(c) equipment operating at a frequency within the range from 3.5 to 6.0 GHz and having a peak output power from the transmitter greater than 1 MW..... A</p> <p style="padding-left: 20px;">(d) equipment operating at a frequency within the range from 6.0 GHz to 10.5 GHz and having a peak output power from the transmitter greater than 500 kW..... A</p> <p style="padding-left: 20px;">(e) equipment operating at a frequency of less than 3.5 GHz and having an 80% or better probability of detection for a 10 sq m target at a free space range of 250 nautical miles..... A</p> <p style="padding-left: 20px;">(f) equipment operating at a frequency within the range from 3.5 to 10.5 GHz and having an 80% or better probability of detection for a 10 sq m target at a free space range of 100 nautical miles..... A</p> <p style="padding-left: 20px;">(g) equipment utilising other than pulse modulation with either a constant or a staggered pulse repetition frequency, in which the carrier frequency of the transmitted signal is not changed deliberately between groups of pulses, from pulse to pulse or within a single pulse, except civil airport radar equipment using a carrier frequency that may change from pulse to pulse between two fixed frequencies separated in time and in frequency by constant magnitudes..... A</p> <p style="padding-left: 20px;">(h) equipment using a Doppler technique..... A</p> <p style="padding-left: 40px;">except</p> <p style="padding-left: 60px;">(i) moving target indicator systems using a conventional double or triple pulse delay line cancellation technique; and</p> <p style="padding-left: 60px;">(ii) equipment designed for aerial navigation surveillance or radar control at civil airports;</p> <p style="padding-left: 20px;">(i) equipment including any digital signal processing techniques used for automatic target tracking..... A</p> <p style="padding-left: 20px;">(j) equipment including other than signal processing techniques with a facility for electronic tracking..... A</p> <p style="padding-left: 20px;">(k) equipment including other than conventional signal processing techniques..... A</p> <p style="padding-left: 20px;">(l) equipment not specified above operating at a frequency of more than 10.5 GHz or at a frequency not in normal civil use..... A</p>
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IL1501 (cont.)	In this head cumulative probability of detection must be determined according to the following parameters:—	
	(a) radial closing velocity of the target 610 m per second;	
	(b) probability of false alarm 10^{-8} ;	
	(c) operating factor 3 dB;	
	(d) fluctuation of the target in accordance with Rayleigh distribution.	
	(5) Ground and marine equipment for use with airborne navigation equipment utilising either of or both the following characteristics:.....	A
	(a) the constant velocity; and/or	
	(b) the rectilinear propagation	
	of electromagnetic waves having a frequency less than 4×10^{14} Hz (0.75 micron).	
	(6) Ground and marine direction finding equipment operating at frequencies greater than 30 MHz.....	A
	(7) Ground or marine navigation and geodetic positioning systems designed for use with satellite-provided timing, positioning or navigation information, except systems restricted to use with TRANSIT satellite systems or other systems not specified in this entry, provided that they do not incorporate equipment specified in head (8) below.....	A
	(8) Timing receivers whose only function is automatically to provide time derived from satellite signals to within 1 millisecond of Universal Coordinate Time (UTC) or better....	A
	(9) Specially designed components and software for the apparatus in heads (1) to (8) above (inclusive) and specialised testing or calibrating equipment and training or simulating equipment for the apparatus in heads (2) to (8) above (inclusive).....	A
IL1502	Communication, detection and tracking equipment of a kind using ultra-violet radiation, infra-red radiation or ultrasonic waves, and specially designed software and components therefor,.....	A
	except	
	(1) Industrial equipment of a kind using cells not specified in the entry in this Group relating to photosensitive components;	
	(2) Equipment used for industrial and civilian intrusion alarms, traffic and industrial movement control and counting systems, medical applications, industrial inspection, sorting or analysis of the properties of materials, or for simple educational or entertainment purposes;	

- IL1502
(cont.)
- (3) Flame detectors for industrial furnaces;
 - (4) Equipment of a kind using a single detector cell with no scanning of the detector and used for laboratory or industrial non-contact temperature measurement;
 - (5) Instruments capable of measuring radiated power or energy and having a response time constant greater than 10 milliseconds;
 - (6) Equipment designed for measuring radiated power or energy for laboratory, agricultural or industrial purposes using a single detector cell with no scanning of the detector, and single detector cell assemblies or probes specially designed therefor, having a response time constant greater than 1 microsecond;
 - (7) Infra-red geodetic equipment using a lighting source other than a laser and manually operated, or using a lighting source (other than a laser or a light-emitting diode) remote from the measuring equipment;
 - (8) Equipment of a kind using ultrasonic waves, the following—
 - (a) which operates in contact with a controlled material to be inspected or which is used for industrial cleaning, sorting or materials handling, emulsification or homogenisation;
 - (b) used for underwater communications, designed for operation with amplitude modulation and having a communications range of 500 m or less, a carrier frequency of 40 to 60 kHz, and a carrier power supplied to the transducer of 1 W or less.
- IL1510 Marine or terrestrial acoustic or ultrasonic systems or equipment specially designed for detecting or locating underwater or subterranean objects or features and specially designed components of such systems or equipment (including but not limited to geophones, other than moving coil or moving magnet electro-magnetic geophones, hydrophones, transducers, towed hydrophone arrays and beamformers) and specially designed software therefor A
- except
- (1) Marine systems or equipment, the following:—
 - (a) active transmitting, or transmitting and receiving, systems or equipment, the following:
 - (i) depth-sounders of a kind used solely for measuring the depth of water or the distance of submerged or buried objects, fish or whales vertically below the equipment;

IL1510
(cont.)

- (ii) horizontally-operated systems of a kind used for detecting or locating submerged or buried objects, fish or whales, and having all the following characteristics—
 - (a) a transmitting frequency of 15 kHz or greater;
 - (b) a sound pressure level less than 250 dB (reference 1 micro-pascal at 1 metre) for apparatus with an operating frequency of between 15 and 30 kHz and with no decibel limitation for apparatus operating at frequencies of 30 kHz or greater;
 - (c) a transmission capability limited to $\pm 10\%$ of the design centre frequency;
 - (d) a design incapable of withstanding pressure during normal operation at depths greater than 1,000 metres; and
 - (e) a display range of 5,000 metres or less;
- (iii) electronic noise sources designed for vertically directional use only;
- (iv) mechanical noise sources;
- (v) chemical noise sources;
- (b) passive receiving equipment, whether or not related in normal application to separate equipment, the following:
 - (i) acoustic hydrophones and transducers, having all the following characteristics—
 - (a) incorporating sensitive elements made of piezoelectric ceramics or crystal and made with a sensitivity no greater than -192 dB (reference 1 volt per micropascal);
 - (b) a design incapable of operating at depths greater than 100 metres; and
 - (c) independently mounted or configured and incapable of assembly by the user into a towed hydrophone array.
- (2) Terrestrial systems or equipment having both of the following characteristics:
 - (a) not reasonably capable of conversion by the user to underwater or marine applications specified in this entry; and
 - (b) not employing geophones or other transducers specified in this entry.

In this entry "passive hydrophone sensitivities" are based on sensitivity being defined as 20 times the logarithm to the base 10 of the ratio of rms output voltage to a 1 volt reference, when the hydrophone sensor is placed in a plane wave acoustic field

IL1510 (cont.)	having an rms pressure of 1 micropascal. A hydrophone of -160 dB (reference 1 volt per micropascal) would yield an output voltage of 10^{-8} volts in such a field; one of -180 dB sensitivity would yield 10^{-9} volts output.	
IL1514	Pulse modulators of a kind used for providing electric impulses of peak power exceeding 20 MW or of a duration of less than 0.1 microsecond, or with a duty cycle in excess of 0.005; and pulse transformer and pulse-forming equipment and delay lines, being components specially designed for such pulse modulators.....	A
IL1516	Radio receivers, the following:	
	(1) Panoramic radio receivers, being receivers which search or scan automatically a part of the electromagnetic spectrum and indicate or identify the received signals, except ancillary equipment for receivers with which the frequency searched does not exceed a bandwidth of 20 MHz or does not incorporate a raster or storage display capability.....	A
	(2) Digitally controlled radio receivers, whether or not computer controlled, which search or scan automatically a part of the electromagnetic spectrum and in which the switching operation takes less than 10 milliseconds and which indicate or identify the received signals.....	A
	except	
	non-ruggedised digitally controlled pre-set type ratio receivers designed for use in civil communications which have 200 selective channels or fewer.	
	(3) Receivers for spread spectrum and frequency agile systems operating within a total transmitted bandwidth which is:	
	(a) 100 or more times greater than the bandwidth of any one information channel; and	
	(b) in excess of 50 kHz.....	A
	(4) Receivers incorporating digital signal processing, except receivers specially designed for internationally allocated civil frequency bands only and which do not permit user-accessible reprogrammability of the digital signal-processing circuits.....	A
	(5) Specially designed components, accessories and software for the receivers specified in heads (1) to (4) above (inclusive).....	A
IL1517	Radio transmitters (except radio relay communication equipment specified in the entry in this Group relating thereto), the following:—	
	(1) Transmitters or transmitter amplifiers designed to operate at output frequencies greater than 960 MHz	A

IL1517 (cont.)	<p>(2) Transmitters or transmitter amplifiers designed to provide any of the following features:</p> <p>(a) any system of pulse modulation other than amplitude-, frequency-, or phase-modulated television or telegraphic transmitters or pulse-width modulated sound broadcasting transmitters..... A</p> <p>(b) rated for operation over a range of ambient temperatures extending from below -40°C to above $+60^{\circ}\text{C}$.... A</p> <p>(3) Transmitters for spread spectrum and frequency agile systems having a total transmitted bandwidth which is:</p> <p>(a) 100 or more times greater than the bandwidth of any one information channel, and</p> <p>(b) in excess of 50 kHz..... A</p> <p>(4) Specially designed components for the transmitters specified in heads (1) to (3) above (inclusive) A</p>
IL1518	<p>Telemetry and telecontrol equipment suitable for use with aircraft (piloted or pilotless), missiles (guided or unguided) or space vehicles (guided or unguided) and specially designed test equipment therefor A</p>
IL1519	<p>Communication transmission equipment (single and multi-channel), including terminal, intermediate amplifier or repeater equipment and multiplex buses, and multiplex equipment used for communications within or between communication or other equipment and systems, by line, cable, optical fibre or radio means, and associated modems and multiplex equipment, the following:—</p> <p>(1) Equipment employing analogue transmission techniques with analogue input and output, including but not limited to frequency division multiplex (FDM), designed to deliver, carry or receive baseband frequencies higher than those in sub-heads (a) and (b) below into, or in, a communications system;</p> <p>(a) in the case of equipment suitable for underwater cable, frequencies higher than 300 kHz A</p> <p>(b) in all other cases, frequencies higher than 19 MHz.... A</p> <p>(2) Equipment employing digital transmission techniques designed for operation at a total bit rate at the highest level multiplex point exceeding 8.5 Megabits per second and having analogue input and output including, but not limited to, pulse code modulation (PCM) designed for use on communications circuits..... A</p> <p>(3) Data communications equipment employing digital transmission with digital input and output, including telegraphic and data transmission, the following:</p>

IL1519 (cont.)	<p>(a) equipment designed for operation at a data signalling rate in bits per second, excluding servicing and administrative channels, numerically exceeding either—</p> <p style="padding-left: 20px;">(i) 9,600 or 320% of the channel (or sub-channel) bandwidth in hertz, when using FDM voice channel; or.....</p> <p style="padding-left: 20px;">(ii) 19,200 when using baseband.....</p> <p>(b) equipment employing an automatic error-detection and correction system in which retransmission is not required for correction and the data signalling rate exceeds 300 bits per second.....</p> <p>(c) statistical multiplexers designed for operation at a data signalling rate in bits per second, excluding servicing and administrative channels, numerically exceeding either 4,800 or 160% of the channel (or sub-channel) bandwidth in hertz</p> <p>(4) Components and accessories and software specially designed for equipment specified in heads (1) to (3) above (inclusive) and test equipment specially designed for the equipment specified in head (2) above.....</p> <p>In this entry—</p> <p>“data signalling rate” takes into account that, for non-binary modulation systems, “bauds” and “bits per second” are not equal. Bits for coding, checking and synchronisation should be included in the calculation of “bits per second”; and</p> <p>“bandwidth”, for data communications equipment designed to operate in one voice channel, is 3,100 Hz and for voice frequency telegraph systems designed to International Telegraph and Telephone Consultative Committee (CCITT) and International Radio Consultative Committee (CCIR) standards “bandwidth” is the number of channels times the channel spacing.</p>	<p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p>
IL1520	<p>Radio relay communication equipment and specially designed test equipment and software, the following:—</p> <p>(1) Radio relay communication equipment designed for use at frequencies exceeding 960 MHz,</p> <p>except</p> <p style="padding-left: 20px;">(a) microwave radio links for fixed civil installations operating at fixed frequencies not exceeding 15 GHz, with a capacity of up to 1,920 voice channels of 4 KHz each or of a television channel of 6 MHz maximum nominal bandwidth and associated sound channels; and</p> <p style="padding-left: 20px;">(b) ground communication radio equipment for use with temporarily fixed services operated by civilian authorities and designed to be used at fixed frequencies not exceeding 15 GHz with a power output of not more than 5W.</p>	<p>A</p>

IL1520 (cont.)	(2) Stand-alone radio transmission media simulators and channel estimators, and specially designed software therefor, specially designed for testing equipment specified in head (1) above, except those in which the adjustments are made only manually.....	A
	(3) Specially designed components and accessories for the equipment specified in heads (1) and (2) above	A
IL1521	Solid-state broadband amplifiers and related equipment having an untuned bandwidth exceeding 100 MHz or an output power exceeding 50 W and specially designed components and accessories therefor..... except	A
	(1) Aerial amplifiers specially designed for civil television receivers;	
	(2) Amplifiers specially designed for community television distribution systems;	
	(3) Amplifiers operating in the range of 380 to 512 MHz and designed for civil communication equipment, provided that the output power does not exceed 20 W;	
	(4) Amplifiers with an output power exceeding 50 W which:	
	(a) are designed for use in radio communication equipment for frequencies not exceeding 32 MHz; or	
	(b) have a bandwidth not exceeding 10 MHz.	
	In this entry—	
	“bandwidth” means the band of frequencies over which the power amplification does not drop to less than one-half of its maximum value.	
IL1522	Lasers and laser systems and specially designed parts and components therefor (including amplification stages) and any equipment containing lasers or designed to contain lasers, the following:—	
	(1) Lasers and specially designed components and parts therefor,.....	A
	except, save when specially designed for equipment specified in head (2) below,	
	(a) argon, krypton and non-tunable dye lasers, with both the following characteristics:	
	(i) an output wavelength in the range from 0.2 to 0.8 micrometre; and	
	(ii) a pulsed output not exceeding 0.5 joule per pulse and an average or continuous wave maximum rated single- or multi-mode output power not exceeding 20 W;	

IL1522
(cont.)

- (b) helium-cadmium, nitrogen, and multi-gas lasers not specified elsewhere in this entry, having both the following characteristics:
 - (i) an output wavelength shorter than 0.8 micrometre; and
 - (ii) a pulsed output not exceeding 0.5 joule per pulse and an average or continuous wave maximum rated single- or multi-mode output power not exceeding 120 W;
- (c) helium-neon lasers with an output wavelength shorter than 0.8 micrometre;
- (d) ruby-lasers with both the following characteristics:
 - (i) an output wavelength shorter than 0.8 micrometre; and
 - (ii) an energy output not exceeding 20 joules per pulse;
- (e) CO₂, CO or CO/CO₂ lasers with either of the following characteristics:
 - (i) an output wavelength in the range of 9 to 11 micrometres and a pulsed output not exceeding 2 joules per pulse and a maximum rated average single- or multi-mode output power not exceeding 1.2 kW or a continuous wave maximum rated single- or multi-mode output power not exceeding 2.5 kW; or
 - (ii) an output wavelength in the range of 5 to 7 micrometres and having a continuous wave maximum rated single- or multi-mode output power not exceeding 50 W;
- (f) Nd: YAG lasers having an output wavelength of 1.06 micrometres and either of the following characteristics:
 - (i) a pulsed output not exceeding 0.5 joules per pulse and a maximum rated average single- or multi-mode output power not exceeding 10 W or a continuous wave maximum rated single- or multi-mode output power not exceeding 50 W; or
 - (ii) a pulsed output not exceeding 10 joules per pulse with a pulse width not less than 50 microseconds and a maximum rated average single- or multi-mode output power not exceeding 50 W;
- (g) Nd: Glass lasers having both the following characteristics:
 - (i) an output wavelength of 1.06 micrometres; and
 - (ii) a pulsed output not exceeding 2 joules per pulse;

IL1522
(cont.)

- (h) tunable CW dye lasers having both the following characteristics:
 - (i) an output wavelength shorter than 0.8 micrometre; and
 - (ii) an output not exceeding an average or continuous wave maximum rated single- or multi-mode output power of 1 W;
- (i) tunable pulsed lasers, including dye and N₂ lasers, having all of the following characteristics:
 - (i) an output wavelength shorter than 0.8 micrometre;
 - (ii) a pulse duration not exceeding 100 nanoseconds; and
 - (iii) a peak power output not exceeding 1 MW;
- (j) single-element semi-conductor lasers having a wavelength shorter than 1 micrometre and designed for and used in the video and audio reproducers and point of sale price scanners referred to at sub-heads (2)(m) and (n) below.

(2) Laser systems and equipment containing lasers, and specially designed components therefor

A

except the following systems and equipment containing lasers of the types excluded from head (1) above:

- (a) equipment specially designed for industrial and civilian intrusion detection and alarm systems;
- (b) equipment specially designed for medical applications;
- (c) equipment for educational and laboratory purposes;
- (d) equipment specially designed for traffic and industrial movement control and counting systems;
- (e) equipment specially designed for the detection of environmental pollution;
- (f) optical spectrometers and densitometers;
- (g) equipment containing continuous wave helium-neon gas lasers, other than laser measuring systems described in head (3) below;
- (h) equipment for cutting or bonding textiles;
- (i) equipment for cutting paper;
- (j) equipment containing lasers for drilling diamond dies for the wire drawing industry;
- (k) electronic scanning equipment with auxiliary electronic screening unit specially designed for printing processes, including such equipment when used for the production of colour separations;

IL1522 (cont.)	<p>(l) laser-radar (lidar) equipment specially designed for surveying or meteorological observation;</p> <p>(m) consumer-type reproducers for video or audio discs, employing non-erasable media;</p> <p>(n) point of sale price scanners;</p> <p>(o) equipment designed for surveying purposes if it is not capable of measuring range;</p> <p>(p) equipment specially designed for the marking of components; and</p> <p>(q) specially designed gravure (printing plate) manufacturing equipment.</p> <p>(3) Laser measuring systems that maintain over the full scale a resolution equal to or finer than 0.1 micrometre and an accuracy equal to or finer than 1 ppm for a 48 hour period over a temperature range of $\pm 10^{\circ}\text{C}$ around a standard temperature and a standard pressure as indicated in IEC publication No. 160.....</p> <p>In this entry "tunable" means the ability of a laser to produce an output at any wavelength within its tunable range. A line-selectable laser which can operate only on discrete wavelengths is not considered tunable.</p>	A
IL1526	<p>Cable, wire and optical fibres, and components and accessories, the following:—</p> <p>(1) Cable (including coaxial cable, but excluding oil well logging cable) and wire, coated with or insulated with any of the materials specified in sub-head (1)(b) of the entry in Group 3I relating to fluorocarbon compounds.....</p> <p>(2) Other cable and optical fibres, the following:</p> <p>(a) underwater communication cable, the following:</p> <p>(i) reversed-twist, double-armoured cable specially designed for towing or suspending, and communicating with, submerged devices.....</p> <p>(ii) unarmoured or single-armoured ocean cable having an attenuation of 1.62 dB/km (3.0 dB per nautical mile) or less, measured at a frequency of 600 kHz.....</p> <p>(b) coaxial cable with an inner diameter of the outer conductor of the core greater than 14 mm, having—</p> <p>(i) an air dielectric in which the spacing is accomplished by discs, beads, spiral, screw or any other means; or</p> <p>(ii) a foam dielectric and a solid copper or aluminium outer conductor.....</p>	A A A A A A A

- IL1526
(cont.)
- (c) optical-fibre communication cable or optical fibres therefor, having any of the following characteristics— A
 - (i) an attenuation at any operating wavelength of 3 dB/km or less;
 - (ii) optical fibres capable of withstanding a “proof test” tensile stress of 1.1×10^9 N/m²;
 - (iii) specially designed for underwater use;
 - (iv) specially designed to be insensitive to nuclear radiation.
 - (d) optical fibres for sensing purposes, having any of the following characteristics— A
 - (i) specially fabricated either compositionally or structurally, or modified by coating, to be acoustically, thermally, inertially, electromagnetically or nuclear radiation sensitive;
 - (ii) modified structurally or by coating to have either very low (“beat length” greater than 50 cm) or very high (“beat length” less than 5 cm) birefringence.
 - (e) secure communications cable, coaxial or multi-conductor, protected by mechanical or electrical means from physical damage or intrusion in such manner that communications security is maintained between terminals without the need for additional encoding and scrambling equipment, except cable which is only armoured by a tough outer sheath or screened electromagnetically A
 - (f) components and accessories specially designed for the optical fibres or cable specified in this head, including fibre-optic bulkhead or hull penetration connectors impervious to leakage at any depth for use in ships or vessels, and multiport fibre-optic couplers, A

except connectors for use with optical fibres or cable with a repeatable coupling loss of 0.5 dB or more.

In this entry—

“beat length” means the distance over which two orthogonally polarised signals, initially in phase, must pass in order to achieve 2 radians phase difference; and

“proof test” consists of on-line or off-line production screen testing that dynamically applies a prescribed tensile stress over a 0.5 to 3 m length of fibre at a running rate of 2 to 5 m per second while passing between capstans approximately 15 cm in diameter. The ambient temperature is a nominal 20°C and relative humidity a nominal 40%.

IL1527 Cryptographic equipment and ancillary equipment (such as teleprinters, perforators, vocoders, visual display units) designed to ensure secrecy of information transmitted via communications media (such as telegraphy, telephony, fac-

IL1529 (cont.)	(6) Spectrum analysers employing time compression of the input signal or FFT (Fast Fourier Transform) techniques.....	A
	(7) Instruments incorporating computing facilities with user accessible reprogramming capability and an alterable programme and data memory of a total of more than 32,768 bits....	A
	(8) Digital instruments incorporating computing facilities, the following:	
	(a) digital test instruments with user accessible reprogramming capability (including digital circuit testers, logic (state or timing) analysers, bus analysers, serial data analysers and digital word generators), specially designed for examining or comparing the absolute or relative information content or the timing of one or more digital bit streams	A
	except	
	(i) logic probes, logic pulsers, digital current tracers (or "sniffers"), signature analysers and other digital circuit testers capable of observing single events and/or providing stimulus at single test points;	
	(ii) logic clips and logic comparators;	
	(iii) logic (state or timing) analysers with not more than 16 input channels (not including qualifier channels) and a maximum sampling rate of 20 MHz or less; and	
	(iv) digital word generators capable of operating at a maximum clock rate of 2 MHz or less with word lengths of 8 bits or less;	
	(b) microprocessor and microcomputer development instruments and systems, specially designed for use in debugging, diagnosing, emulating, simulating, designing, evaluating, programming or reprogramming software or equipment of signal processor-based, computer-based, or memory-based devices, systems or microsystems, except instruments and systems which are designed for use only with microprocessors and microcomputers not specified in the entry relating to electronic components in this Group.....	A
	(9) Digital counters, the following:	
	(a) counters capable of counting successive input signals with less than 5 nanoseconds time difference without prescaling (digital division) of the input signal; (for counter/timers having a time interval measurement mode, see also head (10) below).....	A
	(b) counters employing prescaling of the input signal in which the prescaler is capable of resolving successive input signals in less than 1 nanosecond time difference.....	A

IL1529 (cont.)	<p>(c) counters capable of measuring burst frequencies exceeding 100 MHz for a burst duration of less than 5 milliseconds A</p> <p>(10) Time interval measuring equipment employing digital techniques, capable of measuring time intervals of less than 5 nanoseconds on a single shot basis A</p> <p>(11) Testing equipment rated to maintain specified operating data over a range of ambient temperatures from below -25°C to above $+55^{\circ}\text{C}$ A</p> <p>(12) Digital voltage measuring apparatus (with or without electrical outputs) irrespective of the physical units in which calibrated, with a reading speed (from zero to the measured value) faster than 25 accesses per second, except visual quantization apparatus capable of providing an average value, displayed or not, of the results of the measurement and multichannel analysers of all types used in nuclear experimentation and industrial tele-measuring devices in which a pre-set storage value is used as a basis for measuring, having any of the following characteristics:</p> <p style="padding-left: 20px;">(a) a digital resolution over the whole scale greater than 1 part in 200,000 (0.0005%) A</p> <p style="padding-left: 20px;">(b) an accuracy, measured without reference to an external standard, better than 1 part in 50,000 (0.002%) of reading over an ambient temperature range of $\pm 5^{\circ}\text{C}$ or more, or a stability better than 10^{-6} of reading over a period of 24 hours or more A</p> <p style="padding-left: 20px;">or</p> <p style="padding-left: 20px;">(c) a capability of more than 500 independent measurements per second A</p> <p>(13) Transient recorders, utilising analogue-to-digital conversion techniques, capable of storing transients by sequentially sampling single input signals at successive intervals of less than 50 nanoseconds A</p> <p>In this entry—</p> <p>“user accessible reprogramming capability” means that the instrument contains a computing facility, such as a micro-processor, and the user has the ability to alter the computing programme through external controls such as switches, keyboards or digital buses;</p> <p>“alterable (read/write) memory” means that part of the internal memory of an instrument which can be accessed or modified by the user during normal operations of the instrument for data and operating parameters or programme storage and data manipulation respectively; and</p> <p>“reading speed” does not include changes in range or polarity.</p>
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IL1531	<p>Frequency synthesizers (any kind of frequency source or signal generator, regardless of the techniques used, provided a multiplicity of simultaneous or alternative output frequencies, from one or more outputs, controlled by, derived from or disciplined by a lesser number of standard, or master, frequencies) and equipment containing frequency synthesizers, the following:—</p> <p>(1) Frequency synthesizers, the following:</p> <p>(a) those containing frequency standards specified in heads (1) or (2) of the entry relating to electronic measuring, calibrating, counting, testing and time interval measuring equipment in this Group..... A</p> <p>(b) those containing temperature-compensated crystal oscillators specified in head (3) of the entry relating to quartz crystals in this Group A</p> <p>(2) Instrument frequency synthesizers and synthesized signal generators, designed for ground use, producing output frequencies whose accuracy and short and long term stability are controlled by, derived from, or disciplined by the input frequency or internal master standard frequency, and having any of the following characteristics:</p> <p>(a) a maximum output frequency in excess of 550 MHz. A</p> <p>(b) a phase noise to signal ratio better than -60 dB or an AM noise to signal ratio better than -70 dB referred to the 30 kHz band centred on the carrier, excluding the 1 Hz band centred on the carrier..... A</p> <p>(c) electrically programmable in frequency (in that the output frequency can be controlled or selected by the injection of digitally coded electrical signals from an external control source) with a speed of switching from one selected output frequency to another selected output frequency of less than 10 milliseconds..... A</p> <p>(d) electrically programmable in phase (in that the phase of the output frequency can be varied relative to the internal or external reference standard, or selected in accordance with an externally supplied code or signal with a speed of switching from one selected phase value to another of less than 10 milliseconds),..... A</p> <p>except those equipments incorporating pre-emphasis networks for frequency modulation.</p> <p>(e) a level of spurious components in the output better than -80 dB non-harmonic or -60 dB harmonic component measured relative to the selected output frequency A</p> <p>(f) more than 3 different selected synthesized output frequencies available simultaneously from one or more outputs..... A</p> <p>(g) facilities for pulse modulation of the output frequency A</p>
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- IL1531
(cont.)
- (3) Airborne communications equipment using frequency synthesizers, the following:
- (a) equipment designed to receive or transmit frequencies greater than 156 MHz A
 - (b) equipment incorporating facilities for the rapid selection of more than 200 channels per equipment, except equipments operating in the frequency range of 108 to 136 MHz incorporating facilities for the rapid selection of 720 channels or fewer at not less than 25 kHz channel spacing which have been in normal civil use for at least one year..... A
 - (c) equipment with a speed of switching from one selected output frequency to another selected output frequency less than 10 milliseconds A
 - (d) frequency synthesizers designed for any of the equipment specified in sub-heads (a) to (c) above (inclusive), whether supplied separately or with such equipment and exceeding the parameters defined for equipment specified in head (2) of this entry..... A
- (4) Digitally-controlled radio receivers, whether or not computer-controlled, which search or scan automatically a part of the electro-magnetic spectrum, using frequency synthesizers, the following:
- (a) digitally-controlled receivers in which the switching operation takes less than 10 milliseconds, except non-ruggedised digitally-controlled pre-set type radio receivers designed for use in civil communications, which have 200 selective channels or fewer..... A
 - (b) frequency synthesizers designed for the equipment specified in sub-head (a) above, whether supplied separately or with such equipment, and exceeding the parameters defined for equipment specified in head (2) of this entry, except those specially designed for the non-ruggedised receivers specified in sub-head (a) above A
- (5) Radio transmitters incorporating transmitter drive units, exciters and master oscillators using frequency synthesis, the following:
- (a) transmitters having an output frequency of up to 32 MHz with a frequency resolution of better than 10 Hz and with a speed of switching from one selected output frequency to another selected output frequency less than 10 milliseconds..... A
 - (b) transmitters having an output frequency from 32 MHz to 235 MHz with a frequency resolution of better than 250 Hz and with a speed of switching from one selected output frequency to another selected output frequency less than 10 milliseconds..... A

IL1531 (<i>cont.</i>)	<p>(c) transmitters having an output frequency greater than 235 MHz,</p> <p>except</p> <p>(i) television broadcasting transmitters having an output frequency from 470 MHz to 960 MHz with a frequency resolution of not better than 1 kHz and where the manually-operated frequency synthesizer incorporated in or driving the transmitter has an output frequency not greater than 120 MHz; and</p> <p>(ii) FM and AM ground communications equipment for use in the land mobile service and operating in the 420 to 470 MHz band with a power output of 50 W for mobile units and 300 W for fixed units with a frequency resolution of not better than 6.25 kHz and with a speed of switching from one selected output frequency to another selected output frequency greater than 50 milliseconds;</p> <p>(d) transmitters having more than three different selected synthesized output frequencies available simultaneously from one or more outputs</p> <p>(e) transmitters with facilities for pulse modulation of the output frequency of the transmitters or of the incorporated frequency synthesizer</p> <p>(f) frequency synthesizers designed for any of the equipments specified in sub-heads (a) to (e) above (inclusive), whether supplied separately or with such equipment, and exceeding the parameters specified in head (2) of this entry</p> <p>(6) Specially designed components and accessories for equipment specified in heads (2) to (5) above (inclusive)</p>	<p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p>
IL1532	<p>Precision linear and angular measuring systems, and specially designed components and specially designed software therefor, the following:—</p> <p>(1) Contract-type systems and linear voltage differential transformers (LVDT) therefor, the following:</p> <p>(a) systems having all the following characteristics—</p> <p>(i) a range equal to or less than 5 mm;</p> <p>(ii) a linearity equal to or less than 0.1%; and</p> <p>(iii) a drift equal to or less than 0.1% per day, at standard ambient test room temperatures $\pm 1^{\circ}\text{C}$.</p> <p>(b) linear voltage differential transformers with no compensation networks and having either of the following characteristics—</p> <p>(i) a range equal to or less than 5 mm; or</p> <p>(ii) a linearity equal to or less than 0.2%.</p>	<p>A</p> <p>A</p>

IL1532 (cont.)	(2) Linear measuring machines, except optical comparators, with two or more axes having both the following characteristics:.....	A
	(a) a range in any axis greater than 200 mm; and	
	(b) an accuracy (including any compensation) less (finer) than 0.0008 mm per any 300 mm segment of travel.	
	(3) Angular measuring systems having an accuracy equal to or less than 1 second of arc, except optical instruments using collimated light to detect angular displacements of a mirror...	A
	(4) Non-contact type systems having either of the following characteristics:.....	A
	(a) an effective probe measurement diameter less than 0.5 mm and a drift less than 0.5% per day, at standard ambient test room temperatures $\pm 1^{\circ}\text{C}$; or	
	(b) a linearity of less than 0.3% and a drift of less than 0.5% per day, at standard ambient test room temperatures $\pm 1^{\circ}\text{C}$.	
	(5) Specially designed components and specially designed software for equipment specified in heads (1) to (4) above (inclusive).....	A
IL1533	Radio spectrum analysers (being apparatus capable of indicating the single-frequency components of multi-frequency signals), having any of the following characteristics:—	
	(1) Non-programmable and capable of operating at frequencies over 12.5 GHz.....	A
	(2) Programmable and capable of operating at frequencies over 1.0 GHz.....	A
	(3) Having a display bandwidth in excess of 125 MHz and capable of operating at frequencies over 2 GHz.....	A
	(4) Incorporating computing facilities with user accessible reprogramming capability and an alterable memory of more than 8,192 bits.....	A
	(5) Having either of the following characteristics for analysing frequencies greater than 1 GHz;	
	(a) including a scanning preselector, or.....	A
	(b) incorporating a tracking signal generator.....	A
	(6) Having an overall display dynamic range of better than 80 dB.....	A
	and specially designed components, accessories and software for the equipment specified in heads (1) to (6) above (inclusive).....	A

IL1534	<p>Densitometers, flatbed, and components therefor, the following:—</p> <p>(1) Flatbed microdensitometers, except cathode-ray types, having any of the following characteristics: A</p> <p style="margin-left: 20px;">(a) a recording or scanning rate exceeding 5,000 data points per second;</p> <p style="margin-left: 20px;">(b) a figure of merit less than 0.1; or</p> <p style="margin-left: 20px;">(c) an optical density range greater than 0 to 4.</p> <p>(2) Specially designed components for the instruments specified in head (1) above..... A</p> <p>In this entry: “figure of merit” is the product of the density resolution expressed in density units and the spatial resolution expressed in micrometers. Density resolution is measured over the optical density range of the instrument.</p>
IL1537	<p>Microwave equipment, including parametric amplifiers, capable of operating at frequencies over 1 GHz (other than microwave equipment included in the entries relating to communications, navigation, direction finding and radar equipment; radio transmitters and components; radio relay communications equipment; and electronic measuring, calibrating, counting, testing and time interval measuring equipment), the following:—</p> <p>(1) Rigid and flexible waveguides designed for use at frequencies in excess of 18 GHz A</p> <p>(2) Waveguides having a bandwidth ratio greater than 1.7:1. A</p> <p>(3) Waveguide components, the following:</p> <p style="margin-left: 20px;">(a) directional couplers having a bandwidth ratio greater than 1.7:1 and a directivity over the band of 20 dB or more..... A</p> <p style="margin-left: 20px;">(b) rotary joints capable of transmitting more than one isolated channel or having a bandwidth greater than 5% of the centre mean frequency, except rotary joints used in air traffic control equipment carrying combinations of frequencies suitable for secondary surveillance radar antennæ co-mounted on a primary radar antenna and which do not have a bandwidth exceeding 5% of the centre mean frequency A</p> <p style="margin-left: 20px;">(c) magnetic, including gyro-magnetic, waveguide components A</p> <p>(4) TEM mode devices using magnetic, including gyro-magnetic, properties A</p> <p>(5) TR and anti-TR tubes and specially designed components therefor, A</p> <p>except those designed for use in waveguides and having any of</p>

IL1537 (cont.)	<p>the following characteristics, which are in normal use for ground or marine radar—</p> <ul style="list-style-type: none"> (a) operating at a peak power not exceeding 3 MW and at a frequency of 1.5 GHz or less; (b) operating at a peak power not exceeding 1.2 MW and at a frequency over the range 1.5 GHz to 6 GHz; and (c) operating at a peak power not exceeding 300 kW and at a frequency over the range 6 GHz to 10.5 GHz. <p>(6) Assemblies and sub-assemblies in which the isolating base material functions as a dielectric (as used in stripline, microstrip or slotline), except those specifically designed for use in civil television systems to meet ITU standards and using, as an isolation material, paper base phenolics, glass cloth melamine, glass cloth epoxy resin, polyethylene terephthalate or any other isolating material capable of withstanding an operating temperature not exceeding 150°C..... A</p> <p>(7) Phased array antennæ and sub-assemblies, designed to permit electronic control of beam shaping and pointing, and specially designed components therefore (including but not limited to duplexers, phase shifters and associated high-speed diode switches)..... A</p> <p>(8) Microwave assemblies or sub-assemblies having circuits fabricated by the same processes as used in integrated circuit technology, that include active circuit elements (see also the entries relating to acoustic wave devices in Group 3G; and electronic components, assemblies, sub-assemblies, and printed circuit boards and microcircuits in this Group)..... A</p> <p>(9) Microwave assemblies or sub-assemblies which contain band pass or band stop filters and which are capable of operating at 3 GHz or greater A</p> <p>(10) Amplifiers (see also the entry relating to solid-state broadband amplifiers in this Group)..... A</p> <p>(11) PIN Modulators (see also the entry relating to semiconductor diodes in this Group) A</p> <p>In this entry "ITU Standards" means the standards for civil television systems designed to International Telecommunication Union recommendations.</p>
IL1541, IL1542, IL1555, IL1558, IL1559	<p>Electronic cathode-ray tubes, vacuum tubes or valves (except tubes included in the entry in this Group relating to X-ray systems, flash discharge types), the following:—</p> <ul style="list-style-type: none"> (1) Cathode-ray tubes having any of the following characteristics: A <ul style="list-style-type: none"> (a) a resolving power of 32 lines or more per mm using the shrinking raster method of measurement (b) with travelling wave, or distributed deflection structure, using delay lines or incorporating other tech-

IL1541, IL1542, IL1555, IL1558, IL1559 (cont.)	niques to minimise mismatch of fast phenomena signals to the deflection structure; or (c) incorporating microchannel plate electron multipliers.	
	(2) Cold cathode tubes, whether gas-filled or not, operating in a manner similar to a spark gap, containing three or more electrodes and having all of the following characteristics:	A
	(a) rated for an anode peak voltage of 2,500 V or more; (b) rated for peak currents of 100 A or more; (c) an anode delay time of 10 microseconds or less; and (d) an envelope diameter of less than 25.4 mm.	
	(3) Triggered spark gaps having an anode delay time of 15 microseconds or less and rated for a peak current of 3,000 A or more, and components specially designed therefor and equipment incorporating such devices	A
	(4) Electron tubes except commercial standard television/video camera tubes not having fibre optic faceplates and commercial standard X-ray amplifier tubes, and specially designed components therefor, the following:	
	(a) those for image conversion of intensification incorporating any of the following—	
	(i) fibre-optic face-plates specified in head (1) of the entry in this Group relating to optical elements;...	A
	(ii) microchannel plate electron multipliers; or	A
	(iii) gallium arsenide or other epitaxially grown semiconductor photocathodes specified in head (3) of the entry relating to optical elements	A
	(b) those for television/video cameras having any of the following characteristics—	
	(i) incorporating fibre-optic face-plates specified in head (1) of the entry in this Group relating to optical elements;	A
	(ii) incorporating microchannel plate electron multipliers; or	A
	(iii) coupled with electron tubes specified in sub-head (a) of this head	A
	(c) ruggedised electron tubes for television/video cameras having a maximum length-to-bulb diameter of 5:1 or less	A
	(5) Hydrogen/hydrogen isotope thyratrons of ceramic-metal construction, and accessories therefor, having any of the following characteristics:	
	(a) a peak pulse power output of more than 12.5 MW....	A
	(b) a peak anode voltage of more than 25 kV; or	A
	(c) a peak current rating of more than 1.5 kA	A

IL1541,
IL1542,
IL1555,
IL1558,
IL1559
(cont.)

- (6) Valves, the following:
- (a) valves in which space charge control is utilised as the primary functional parameter, the following:—
- (i) valves rated for continuous wave operation above 4 GHz at the maximum rated anode dissipation... A
- (ii) valves rated for continuous wave operation within the frequency range 0.3 GHz to 4 GHz and for which (under any condition of cooling) the product of the maximum rated anode dissipation (expressed in W) and the square of the maximum frequency (expressed in GHz) at the maximum rate anode dissipation is greater than 10^4 A
- except
- valves specially designed for television transmitters operating in the frequency range 0.47 GHz to 0.96 GHz and rated for operation without a grid current, for which the product of the rated anode dissipation (expressed in W) and the square of the maximum frequency (expressed in GHz) is not greater than 2×10^4 ;
- (iii) valves rated only for pulse operation above 1 GHz, with maximum peak pulse output power greater than 45 kW A
- (iv) valves rated only for pulse operation between 0.3 and 1 GHz and for which (under any condition of cooling), the product of the peak pulse output power (expressed in W) and the square of the maximum frequency (expressed in GHz) is greater than 4.5×10^4 A
- (v) valves specially designed for use as pulse modulators for radar and similar applications, the following—
- (a) having a peak anode voltage rating of 100 kV or more A
- (b) rated for a peak pulse power of 20 MW or more A
- (see also the entry in this Group relating to pulse modulators);
- (b) valves which utilise interaction between a beam of electrons and microwave elements and in which the electrons travel in a direction perpendicular to the applied magnetic field, including but not limited to magnetrons, crossed-field amplifier valves and crossed-field oscillator valves, A
- except
- (i) fixed frequency and tunable pulsed magnetrons and crossed-field amplifier valves, the following—

IL1541,
IL1542,
IL1555,
IL1558,
IL1559
(cont.)

- (a) magnetrons designed to operate at frequencies below 3 GHz with a maximum rated peak output power of 1.5 MW or less;
 - (b) magnetrons designed to operate at frequencies of between 3 GHz and 12 GHz if the product of the maximum rated peak output power (expressed in kW) and the frequency (expressed in GHz) is less than 4,200; and
 - (c) cross-field amplifier valves designed to operate at frequencies below 4 GHz with a maximum rated peak output power of 1.2 MW or less and a gain of less than 15 dB;
- (ii) fixed frequency continuous wave magnetrons designed for medical, industrial heating or cooking purposes, operating at a frequency of 2.375 GHz \pm 0.05 GHz, or 2.45 GHz \pm 0.05 GHz with a maximum rated power not exceeding 6 kW, or at a frequency lower than 1 GHz with a maximum rated power not exceeding 25 kW;
- (c) valves which utilise interaction between a beam of electrons and microwave elements or cavities and in which the electrons travel in a direction parallel to the applied magnetic field, including but not limited to klystrons and travelling wave tubes,
- except
- (i) continuous wave valves designed for octave or lesser bandwidth (where the highest operating frequency is equal to or less than twice the lowest operating frequency) and having both the following characteristics—
 - (a) designed to operate below 20 GHz; and
 - (b) the product of the rated output power (expressed in W) and the frequency (expressed in GHz) is less than 800;
 - (ii) pulsed valves designed for octave or lesser bandwidth and having either of the following characteristics—
 - (a) peak saturated output power not exceeding 1 kW and average power not exceeding 40 W at or below 10 GHz; or
 - (b) peak saturated output power not exceeding 100 W and average power not exceeding 20 W at between 10 and 20 GHz;
 - (iii) pulsed valves designed for fixed frequency operation at frequencies less than 3.5 GHz, having a peak output power of 1.6 MW or less and an operating bandwidth less than one per cent; and
 - (iv) valves used as fixed-frequency or voltage-tunable oscillator valves designed to operate at frequen-

A

IL1541, IL1542, IL1555, IL1558, IL1559 (cont.)	cies below 20 GHz with a maximum output power of less than 3 W;	
	(d) valves which utilise interaction between an electron beam and microwave elements or cavities but do not require a magnetic field to control or focus the electron beam, except low power reflex oscillator klystrons designed to operate at frequencies below 20 GHz and at a maximum output power of less than 3 W	A
	(e) valves which utilise interaction between a beam of electrons and microwave elements or cavities in which the electrons drift in a direction parallel to the applied magnetic field but also require for their operation a large component of velocity transverse to the direction of the applied magnetic field, including but not limited to gyrotrons, ubitrons and peniotrons	A
	(f) valves designed to withstand on any axis an acceleration of short duration (shock) greater than 1,000 g....	A
	(g) valves designed for operation in ambient temperatures exceeding 200°C	A
	(h) valves specified in sub-heads (c), (d) or (e) above which are designed to operate with no filament or cathode heating element (as indicated by the absence of heating supply connections)	A
	(i) valves which use a modulated beam of electrons striking one or more semi-conductor diodes to provide power gain (see also the entry in this Group relating to semi-conductor diodes)	A
	(j) specially designed components for the valves specified in this entry	A
IL1544	Semi-conductor diodes and dice and wafers therefor (except those specified elsewhere in this Schedule, or those made from germanium, selenium or copper oxide), designed or rated for use at input or output frequencies above 12.5 GHz or having any of the following characteristics:—	
	(1) Mixer and detector diodes designed or rated for use at input or output frequencies greater than 3 GHz,	A
	except	
	(a) point contact diodes designed or rated for use at input or output frequencies of 12.5 GHz or less;	
	(b) Schottky diodes designed or rated for mixer use at input or output frequencies of less than 12.5 GHz and having a noise figure of more than 6.5 dB;	
	(c) Schottky diodes designed or rated for detector use at input or output frequencies of less than 12.5 GHz and having a minimum rated tangential sensitivity of worse than -45 dBm under unbiased conditions or worse than -50 dBm under biased conditions;	

IL1544 (cont.)	(2) Oscillator and amplifier devices such as Gunn, Impatt, Trapatt, TED and LSA, including those used for the direct conversion of DC to RF power, designed or rated for use at:	
	(a) output frequencies above 1 GHz, but not exceeding 4 GHz, with a peak power greater than 2 W or a maximum CW power greater than 200 mW, or	A
	(b) output frequencies above 4 GHz, but not exceeding 12.5 GHz, with a peak power greater than 1 W or a maximum CW power greater than 100 mW	A
	(3) Voltage variable capacitance diodes designed or rated for use at input or output frequencies greater than 1.7 GHz...	A
	(4) Fast recovery diodes having either of the following characteristics:	
	(a) a rated maximum reverse recovery time of less than 1 nanosecond or rated for a stored charge of less than 25 pico-coulombs, or	A
	(b) both a rated forward rectified current over 5 amperes and a rated maximum reverse recovery time of less than 20 nanoseconds or a rated storage charge of less than 25 pico-coulombs	A
	(5) PIN diodes designed or rated for use at input or output frequencies above 1.7 GHz, with a peak power of more than 5 W or a maximum CW power of more than 500 mW.....	A
	(6) Non-coherent light-emitting diodes with a peak radiant intensity at a wavelength of greater than 1,000 nanometres	A
	(7) Dice and wafers for the semi-conductor diodes specified in heads (1) to (6) above (inclusive)	A
IL1545	Transistors and dice and wafers therefor (except phototransistors which are specified in the entry in this Group relating to photosensitive components), the following:—	
	(1) Transistors using a bulk semi-conductor material other than germanium or silicon	A
	(2) Transistors using silicon as the bulk semi-conductor material, the following:	
	(a) types having an operating frequency greater than 1 GHz	A
	(b) types having an operating frequency of 1.5 MHz or less, and a maximum collector dissipation exceeding 300 W	A
	(c) types having an operating frequency greater than 1.5 MHz and a maximum collector dissipation exceeding 250 W	A
	(d) types having an operating frequency greater than 200 MHz and a product of the operating frequency (in	

IL1545 (cont.)	<p>GHz) and the maximum collector dissipation (in W) exceeding 5</p> <p>(e) majority carrier devices, including but not limited to junction field-effective transistors and metal-oxide semi-conductor transistors, except field-effect transistors having a maximum power dissipation of 500 mW or less, and a maximum operating frequency of 1 GHz or less.....</p> <p>(3) Dice and wafers for the transistors specified in heads (1) and (2) above</p> <p>In this entry "maximum collector dissipation" means the continuous dissipation measured under the optimum cooling conditions specified by the manufacturer;</p> <p>"maximum operating frequency" in Hertz means</p> $f_{\max} = \frac{g_m}{2\pi C_i}$ <p>where g_m is the maximum transconductance in Siemens (mho) and C_i is the input capacitance in farads; and</p> <p>"operating (specification) frequency" means the frequency used in measuring output power or power gain (G_{pE}, G_{pB} or G_{pC}). When these parameters are not specified, "operating frequency" means the frequency used in measuring gain bandwidth product "(f_T)" or noise figure.</p>	A A A
IL1547	<p>Thyristors and dice and wafers therefor, the following:—</p> <p>(1) Thyristors designed for use in pulse modulators having a rated turn-on time of less than 1 microsecond where the rated peak current exceeds 150A.....</p> <p>(2) Thyristors having a rated turn-off time of less than 1 microsecond.....</p> <p>(3) Thyristors having rated turn-off time of 1 microsecond or more but less than 2.3 microseconds, except those having a rated peak current of 50A or less and encapsulated in non-hermetically sealed packages</p> <p>(4) Thyristors having a rated turn-off time of from 2.3 microseconds to 10 microseconds (inclusive) and a figure of merit greater than 25.....</p> <p>(5) Dice and wafers for the thyristors specified in heads (1) to (4) above (inclusive)</p> <p>In this entry "figure of merit" is defined as the product of the repetitive peak off-state voltage (V_{DRM}) in kV and the repetitive peak on-state current (I_{TRM}) in A as shown on the thyristor data sheets.</p>	A A A A A
IL1548	<p>Photosensitive components, including linear and focal plane arrays, and dice and wafers therefor, the following:—</p>	

IL1548 (cont.)	<p>(1) Photosensitive components (including photodiodes, phototransistors, photothyristors, photoconductive cells and similar photosensitive components) having either of the following characteristics:</p> <p style="margin-left: 20px;">(a) a peak sensitivity at a wavelength longer than 1,200 nanometres or shorter than 190 nanometres; or..... A</p> <p style="margin-left: 20px;">(b) a peak sensitivity at a wavelength shorter than 300 nanometres and an efficiency of less than 0.1% relative to peak response at wavelengths longer than 400 nanometres A</p> <p>except vacuum photodiodes specially designed for use in spectrophotometry having a peak response at a wavelength shorter than 300 nanometres.</p> <p>(2) Semi-conductor photodiodes and phototransistors with a response time constant of 95 nanoseconds or less measured at the operating temperature for which the time constant reaches a minimum..... A</p> <p>(3) Components specially designed or rated as electromagnetic (including laser) and ionised-particle radiation resistant... A</p> <p>(4) Linear and focal plane arrays (hybrid or monolithic) having any of the characteristics specified in heads (1) or (2) above, and specially designed components therefor..... A</p> <p>(5) Dice and wafers for the components specified in heads (1) to (4) above (inclusive) A</p> <p>In this entry "time constant" means the time taken from the application of a light stimulus for the current increment to reach a value of $1-1/e$ times the final value (63% of the final value).</p>
IL1549	<p>Photomultiplier tubes, the following:—</p> <p style="margin-left: 20px;">(1) Those for which the maximum sensitivity occurs at wavelengths shorter than 300 nanometres A</p> <p style="margin-left: 20px;">(2) Those having an anode pulse rise time of less than 1 nanosecond..... A</p> <p style="margin-left: 20px;">(3) Those containing microchannel plate electron multipliers..... A</p> <p>except photomultiplier tubes specially designed for use in spectrophotometry having a peak sensitivity at a wavelength shorter than 300 nanometres.</p>
IL1553	<p>X-Ray systems, flash discharge type, including tubes having all of the following characteristics:—..... A</p> <p style="margin-left: 20px;">(1) Peak power greater than 500 MW;</p> <p style="margin-left: 20px;">(2) Output voltage greater than 500 kV; and</p> <p style="margin-left: 20px;">(3) Pulse width less than 0.2 microsecond.</p>

IL1556	<p>Optical elements and elements for optical tubes, the following:—</p> <p>(1) Non-flexible fused fibre optic plates or bundles, having a fibre pitch (centre to centre spacing) of less than 10 micrometres; a light-absorbing medium surrounding each fibre or interstitially placed between fibres; and a diameter greater than 13 mm A</p> <p>(2) Microchannel plates for electron image amplification, having 15,000 or more hollow tubes per plate; and a hole pitch (centre to centre spacing) of less than 25 micrometres A</p> <p>(3) Semi-transparent photocathodes incorporating epitaxially grown layers of compound semi-conductors, such as gallium arsenide..... A</p> <p>(4) Diffractive type optical elements specially designed for display screens, having any of the following characteristics:</p> <p style="padding-left: 20px;">(a) a transmission of more than 90% outside the reflection band and a reflection of more than 75% inside the reflection band, which has less than 15 nanometres bandwidth and is matched to the frequency of the display light source;..... A</p> <p style="padding-left: 20px;">(b) a rear projection screen brightness gain of more than 10 times the gain of a Lambertian scatterer with an equivalent area, and less than 10% variation in brightness across the exit aperture; or A</p> <p style="padding-left: 20px;">(c) specially designed for use in helmet-mounted displays..... A</p>
IL1560	<p>Capacitors designed for or capable of maintaining their rated electrical or mechanical characteristics during their specified operating lifetime, the following:—</p> <p>(1) Monolithic ceramic capacitors (other than boundary layered capacitors) using non-ferro-electric strontium titanate (SrTiO₃) dielectric rated for operation over the whole range of ambient temperatures from below -55°C to above +85°C ... A</p> <p>(2) Other capacitors rated for operation at ambient temperatures below -55°C or above +200°C..... A</p> <p>See also the entry in Group 4 relating to technology for the design and production of tantalum capacitors.</p>
IL1561	<p>Materials specially designed and manufactured for use as absorbers of electromagnetic waves having frequencies greater than 2×10^8 Hz, and less than 3×10^{12} Hz,..... A</p> <p>except the following:</p> <p>(1) Hair type absorbers, whether constructed of natural or synthetic fibres, with non-magnetic loading to provide absorption;</p> <p>(2) Absorbers whose incident surface is non-planar in</p>

IL1561 (cont.)	<p>shape, including pyramids, cones, wedges and convoluted surfaces, and which have no magnetic loss; and</p> <p>(3) Absorbers whose incident surface is planar and which are either plastic foam materials (flexible or non-flexible) with carbon loading to provide absorption, or organic binders with magnetic material loading which provide resonant absorption performance, being absorbers or binders having both of the following characteristics:</p> <p>(a) a tensile strength of less than 7×10^6 N/m² (1,016 psi) and a compressive strength of less than 14×10^6 N/m² (2,032 psi); and</p> <p>(b) not capable of withstanding temperatures higher than 176°C (350°F).</p> <p>In this entry, "resonant absorption performance" is defined as less than 5% echo compared with metal over a bandwidth of not more than $\pm 15\%$ of the centre frequency of the incident energy.</p>
IL1564	<p>Electronic component assemblies, sub-assemblies, printed circuit boards, substrates and microcircuits, including packages therefor, the following:—</p> <p>(1) Substrates for printed circuits including ceramic substrates and coated metal substrates (single-sided, double-sided or multilayer), and thin copper foils therefor..... A</p> <p>except:</p> <p>(a) printed circuit boards manufactured from any of the following materials:</p> <p>(i) paper base phenolics;</p> <p>(ii) glass cloth melamine;</p> <p>(iii) glass epoxy resin uncoated or coated with copper foil of a thickness of 18 micrometres (0.00071 inch) or greater;</p> <p>(iv) polyethylene terephthalate;</p> <p>(v) any other insulating material having all of the following characteristics:</p> <p>(a) a maximum continuous rated operating temperature not exceeding 150°C;</p> <p>(b) a dissipation factor equal to or greater than 0.009 at 1 MHz;</p> <p>(c) a relative dielectric constant equal to or less than 8 at 1 MHz;</p> <p>(d) a coefficient of expansion equal to or greater than 10^{-5} per °C over a temperature range of 0 to 120°C;</p> <p>(b) ceramic substrates having not more than two layers of interconnection, including the ground plane;</p>

IL1564 (cont.)	<p>(c) copper foil having a thickness of 18 micrometres (0.00071 inch) or greater.</p> <p>(2) Ceramic microcircuit packages which are designed for hermetically sealed pin or pad grid array, leadless carrier, or surface-mounted configurations,.....</p> <p>except those having all of the following characteristics:</p> <p>(a) single-in-line, dual-in-line or flat-pack configuration;</p> <p>(b) pin, pad or lead spacings of 2.5 mm or more or 100 mils or more; and</p> <p>(c) 40 leads or less.</p> <p>(3) Assemblies, modules and printed circuit boards with mounted components, the following:</p> <p>(a) those containing substrates for printed circuits specified in head (1) above</p> <p>(b) those containing microprocessor, microcomputer or memory microcircuits or other components specified elsewhere in this Group,.....</p> <p>except</p> <p>(i) assemblies incorporating components specified in this Group but which components are capacitors;</p> <p>(ii) power supply assemblies; and</p> <p>(iii) assemblies, modules and printed circuit boards with mounted components designed for equipment not otherwise specified in this Schedule and which, by nature of their design, performance, lack of user accessible programmability, lack of user microprogrammability, software, microprogramme control or specialised logic control, are substantially restricted to the particular application for which they have been designed.</p> <p>(4) Microcircuits (monolithic integrated circuits, microprocessor, microcomputer, multichip, hybrid, film or integrated optical types),.....</p> <p>except</p> <p>(a) encapsulated passive networks;</p> <p>(b) encapsulated microcircuits (other than those designed or rated as radiation hardened and other than those rated for operation below -40°C or above $+85^{\circ}\text{C}$) packaged in TO-5 outline cases (7.747 to 9.398 mm diameter) or in non-hermetically sealed cases, the following:</p> <p>(i) bipolar gates, inverters, buffers, bilateral switches, drivers, counters, latches, adders, comparators, parity generators, multiplexers, expanders, flip-flops, multivibrators, code converters, registers, encoders, decoders, demulti-</p>	<p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p>
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IL1564
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- plexers, diode matrices, multipliers and Schmitt-triggers, designed for operation as digital logic circuit elements and having all the following characteristics—
- (a) encapsulated in a package having 24 terminals or less;
 - (b) a typical propagation delay time not less than 3 nanoseconds; and
 - (c) a power dissipation per basic gate of not less than 2 milliwatts and, for types having a basic gate propagation delay of not less than 3 nanoseconds but less than 5 nanoseconds, a product of the basic gate propagation delay time, in nanoseconds, and the power dissipation per basic gate, in milliwatts, not less than 30 pJ (that is speed-power product per gate not less than 30 pJ).
- (ii) CMOS circuits designed for operation as digital logic circuit elements, the following—
- gates, inverters, buffers, flip-flops, latches, multivibrators, bilateral switches, display drivers, fixed counters, fixed frequency dividers, storage registers, decoders, voltage translators, encoders or Schmitt-triggers having both of the following characteristics—
 - (a) encapsulated in a package having 24 terminals or less;
 - (b) a minimum value of the basic gate propagation delay time under any rated conditions of not less than 10 nanoseconds;
- (iii) silicon single-chip microcomputer microcircuits, other than bit-slice microprocessors, mask programmed by the manufacturer for a civil application and having all the following characteristics—
- (a) a word size to speed ratio of less than or equal to 1.1 bit per microsecond;
 - (b) a speed-power dissipation product of greater than or equal to 1.2 microjoules;
 - (c) an on-chip read-only memory (ROM), not including the microcode, of less than or equal to 4,096 Bytes;
 - (d) an on-chip random-access memory (RAM) of less than or equal to 1,024 Bytes;
 - (e) containing no programmable read-only memory (PROM);
 - (f) an operand (data) word length of less than or equal to 8 bits;

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(cont.)

- (g) not capable of using off-chip memory for programme storage;
 - (h) not containing multiplication instructions, general purpose operating systems or high order languages; and
 - (i) not rated for operation below 253 K (-20°C) or above 348 K ($+75^{\circ}\text{C}$);
- (iv) silicon microprocessor microcircuits, other than bit-slice microprocessors, having all of the following characteristics—
- (a) a word size to speed ratio of less than or equal to 1.25 bit per microsecond;
 - (b) a speed-power dissipation product of greater than or equal to 2 microjoules;
 - (c) containing no on-chip ROM or PROM;
 - (d) containing on-chip RAM of less than or equal to 1,024 bits;
 - (e) capable of addressing off-chip memory not greater than 65,536 Bytes;
 - (f) an operand (data) word length of less than or equal to 8 bits and not having an arithmetic logic unit (ALU) wider than 8 bits;
 - (g) not containing multiplication instructions; and
 - (h) not rated for operation below 253 K (-20°C) or above 348 K ($+75^{\circ}\text{C}$);

In sub-heads(b)(iii) and (b)(iv) "speed" in each case means the time to fetch an operand C and another operand D, both from an external storage outside any work register, add these operands and put the result back in storage; and

"speed-power dissipation product" in each case means the product of the speed and the typical value of the power dissipation, at the clock frequency used in the speed calculation.

- (v) memory microcircuits, the following—
- (a) MOS dynamic random access memories (DRAM) having both the following characteristics—
 - (i) a maximum of 4,096 bits per package and a maximum access time of not less than 250 nanoseconds; and
 - (ii) not rated for operation below 253 K (-20°C) or above 348 K ($+75^{\circ}\text{C}$);
 - (b) mask programmed ROMs not rated for operation below 253 K (-20°C) or above 348 K ($+75^{\circ}\text{C}$), the following—

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(cont.)

- (i) with a maximum of 2,048 bits per package and a maximum access time of not less than 450 nanoseconds;
 - (ii) PMOS or NMOS types with a maximum of 8,192 bits per package and a maximum access time not less than 450 nanoseconds;
 - (iii) PMOS or NMOS types specifically programmed or designed as character generators, having a standard character font, and having a maximum access time of not less than 250 nanoseconds;
- (c) MOS static random access memories (SRAM) having both of the following characteristics—
- (i) a maximum of 1,024 bits per package; and
 - (ii) a maximum access time of not less than 450 nanoseconds;
- (d) bipolar RAMs, the following—
- (i) with a maximum of 64 bits per package and a maximum access time of not less than 30 nanoseconds;
 - (ii) with a maximum of 256 bits per package and a maximum access time of not less than 40 nanoseconds; or
 - (iii) with a maximum of 1,024 bits per package and a maximum access time of not less than 45 nanoseconds;
- (vi) microcircuits, the following—
- (a) non-reprogrammable microcircuits, not capable of addressing external memory, specially designed for, and which by virtue of circuit design are normally limited to use only for, simple calculators which perform a single function in response to a keystroke, and are capable of performing a floating point addition of 13 decimal digits (mantissa only) or less in not less than 0.02 second;
 - (b) programmable microcircuits specially designed for and which by virtue of circuit design are normally limited to use only for, simple key programmable calculators having both the following characteristics—
 - (i) capable of executing a sequence of not more than 256 programme steps introduced into a programme memory on

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(cont.)

- the chip by a sequence of keystrokes;
and
- (ii) capable of performing a floating point addition of 13 decimal digits (mantissa only) or less in not less than 0.02 second;
 - (c) P-channel or N-channel MOS microcircuits specially designed as, and which by virtue of circuit design are normally limited to use only as, serial digital shift registers with a maximum clock rate of 2.5 MHz, and a maximum of 1,024 bits per package;
- (vii) microcircuits, the following—
- (a) untuned AC amplifier circuits having a bandwidth of less than 3 MHz and a maximum rated power dissipation of 5 W or less at a case temperature of 25°C;
 - (b) audio amplifier microcircuits having a maximum rated continuous power output of 25 W or less at a case temperature of 25°C;
- Note: For audio amplifiers, the +85°C limit specified in sub-head (4)(b) is not applicable.
- (viii) operational amplifier microcircuits having all of the following characteristics—
- (a) a typical unity-gain open loop bandwidth of not more than 5 MHz;
 - (b) a typical open-loop voltage gain of not more than 10^6 , i.e. 120 dB;
 - (c) either a maximum intrinsic rated input offset voltage of not less than 1 mV, or a maximum input offset voltage drift of not less than 5 microvolts per K (°C);
 - (d) a typical slew rate at unity gain not exceeding 6 V/microsecond provided that, for microcircuits having a typical slew rate, at unity gain, greater than 2.5 microvolts/second, the typical power dissipation is greater than 10 milliwatts per amplifier;
- (ix) analogue multiplier or divider microcircuits having both the following characteristics—
- (a) a best case rated non-linearity of not better than 0.5% of full scale; and
 - (b) a -3 dB small-signal bandwidth of not more than 1 MHz;
- (x) isolation amplifier microcircuits;
- (xi) instrumentation amplifier microcircuits having all of the following characteristics—

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(cont.)

- (a) a best case rated non-linearity of not better than 0.01% at a gain of 100;
 - (b) a maximum gain-bandwidth product not greater than 7.5 MHz; and
 - (c) a typical slew rate at unity gain not exceeding 3 V/microsecond;
- (xii) voltage regulator microcircuits, whether or not rated for operation above +85°C, the following—
 - (a) linear types having both the following characteristics—
 - (i) a rated nominal output voltage of 40 V or less; and
 - (ii) a maximum output current of 2 A or less;
 - (b) switching types having both the following characteristics—
 - (i) a rated nominal output voltage of 40 V or less; and
 - (ii) a maximum output current of 150 mA or less;
- (xiii) voltage reference microcircuits having both of the following characteristics—
 - (a) a rated accuracy of no better than 0.1%; and
 - (b) a temperature coefficient of voltage not less than 15×10^{-6} per K (°C);
- (xiv) voltage comparator microcircuits having both the following characteristics—
 - (a) a maximum input offset voltage of not less than 2 mV; and
 - (b) a typical switching speed or typical response time or not less than 30 nano-seconds;
- (xv) bipolar microcircuits designed for operation in civil applications as externally controlled (by inductive, magnetic or optical means) electronic switches or as threshold value switches with switching times of 0.5 microsecond or greater;
- (xvi) non-coherent light-emitting alphanumeric displays not incorporating an integrated circuit;
- (xvii) non-coherent light-emitting alphanumeric displays incorporating an integrated circuit used for decoding, controlling and/or driving that display, provided that the integrated circuit is not integral with the actual display device;

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(cont.)

- (xviii) simple encapsulated photo-coupler (transponder) assemblies with electrical input and output and which incorporate non-coherent light-emitting diodes;
- (xix) interface microcircuits, the following—
 - (a) line drivers and line receivers, having a typical propagation delay time from data input to output of not less than 15 nanoseconds;
 - (b) sense amplifiers having both the following characteristics—
 - (i) a typical propagation delay time from data input to output of not less than 15 nanoseconds; and
 - (ii) a typical input threshold voltage of not less than 10 mV;
 - (c) memory and clock drivers having all of the following characteristics—
 - (i) a maximum rated output current of 500 mA or less;
 - (ii) a maximum rated output voltage of 30 V or less; and
 - (iii) a typical propagation delay time from data input to output of not less than 20 nanoseconds;
 - (d) peripheral and display drivers having all of the following characteristics—
 - (i) a maximum rated output current of 500 mA or less;
 - (ii) a typical propagation delay time from data input to output of not less than 20 nanoseconds; and
 - (iii) a maximum rated output voltage of 80 V or less;
- (xx) voltage-to-frequency converter microcircuits not employing delta or delta/sigma modulation techniques, having both the following characteristics—
 - (a) a rated non-linearity of not better than 0.01% of full scale;
 - (b) a gain drift not less than 50×10^{-6} per °C at rated frequency;
- (xxi) Rms-to-dc voltage converter microcircuits;
- (xxii) analogue-to-digital and digital-to-analogue converter microcircuits (other than coder, decoder or coder/decoder (codec) microcircuits specially designed for voice), the following—

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(cont.)

- (a) analogue-to-digital converter microcircuits having both the following characteristics—
 - (i) a maximum conversion rate to rated accuracy of not more than 50,000 complete conversions per second, or a maximum conversion time to maximum resolution of not less than 20 microseconds; and
 - (ii) a rated non-linearity of not better than 0.025% of full scale over the specified operating temperature range;
- (b) digital-to-analogue converter microcircuits having both the following characteristics—
 - (i) a maximum settling time to rated linearity of not less than 5 microseconds for “voltage output” and not less than 250 nanoseconds for current output converters; and
 - (ii) a rated non-linearity of not better than 0.025% of full scale over the specified operating temperature range;
- (xxiii) non-reprogrammable silicon microcircuits which are specially designed or programmed by the manufacturer for functional purposes in the following applications—
 - (a) automotive electronics, including entertainment, instrumentation, safety, comfort, operations and pollution, whether or not such circuits are rated for operation below -40°C or above $+85^{\circ}\text{C}$;
 - (b) home electronics, including radio, television, domestic appliances, clocks, watches, audio and video tape recorders, safety, comfort and amusement;
 - (c) personal communications up to 150 MHz, including amateur radio communications and intercom;
 - (d) for cameras and cinecameras (other than for imaging microcircuits, or those used in cameras and cinecameras specified in entries in Groups 1 or 3G whether or not such circuits are rated for operation below -40°C or above $+85^{\circ}\text{C}$;
 - (e) medical electronic prostheses, including cardiac pacemakers and hearing aids;
- (xxiv) timing microcircuits having both of the following characteristics—
 - (a) a typical timing error of not less than 0.5%; and

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(cont.)

- (b) a typical rise time of not less than 100 nanoseconds;
- (xxv) sample and hold microcircuits having both of the following characteristics—
 - (a) an acquisition time of not less than 10 microseconds; and
 - (b) a maximum non-linearity error of not better than 0.01% of full scale for a hold time of 1 microsecond;
- (xxvi) analogue-to-digital converter microcircuits specially designed for digital voltmeter applications and permitting characteristics corresponding to those of instruments not specified in head (12) of the entry in this group relating to electronic measuring equipment.
- (c) unencapsulated monolithic integrated circuits which are not designed or rated as radiation hardened and which are—
 - (i) bipolar types (other than complex custom bipolar digital devices), designed for operation as digital logic circuit elements but limited to gates, inverters, buffers, bilateral switches, drivers, counters, latches, adders, comparators, parity generators, multiplexers, expanders, flip-flops, multi-vibrators, code converters, registers, encoders, decoders, demultiplexers, diode matrices, multipliers and Schmitt-triggers, having both the following characteristics—
 - (a) a product of the typical basic gate propagation delay time (in nanoseconds) and the power dissipation per basic gate (in milliwatts) not less than 70 pJ (i.e. speed-power product/gate not less than 70 pJ); and
 - (b) a typical propagation delay time not less than 5 nanoseconds;
 - (ii) operational amplifiers, having all of the following characteristics—
 - (a) a typical unity-gain open-loop bandwidth of not more than 5 MHz;
 - (b) a typical open-loop voltage gain of not more than 100,000 or 100 dB;
 - (c) a maximum intrinsic rated input offset voltage of not less than 5 mV; and
 - (d) a typical slew rate at unity gain not exceeding 1 volt/microsecond;
 - (iii) audio amplifiers having a maximum rated power output of 10 W or less at a case temperature of 25°C;

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- (iv) non-reprogrammable types which are specially designed for, and by virtue of circuit design are normally limited to, civil uses in television and radio receivers, having all of the following characteristics—
- (a) rated for operation at 11 MHz or less;
 - (b) not specially designed for station scanning applications;
 - (c) not using charge-coupled device (CCD) technology;
 - (d) not intended for beam lead bonding; and
 - (e) not intended for video and/or luminence amplifiers with maximum rated supply voltages exceeding 30 V or with typical bandwidths greater than 7.5 MHz;
- (v) non-reprogrammable types specifically designed for time-keeping applications.

In this entry—

“assembly” means a number of components (i.e. circuit elements, discrete components, microcircuits) connected together to perform a specific function or functions, replaceable as an entity (and normally capable of being disassembled);

“circuit element” means a single active or passive functional item in an electronic circuit, such as one diode, one transistor, one resistor or one capacitor;

“discrete component” means a separately packaged circuit element with its own external connections;

“film type microcircuit” means an array of circuit elements and metallic interconnections formed by deposition of a thick or thin film on an insulating substrate;

“integrated optical microcircuit” means a microcircuit containing one or more elements designed to function as a photosensor or photoemitter, or to perform optical or electro-optical functions;

“hybrid microcircuit” means a microcircuit consisting of a combination of film type microcircuits and monolithic integrated circuit elements or combinations of either with discrete components or circuit elements;

“microcircuit” means 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;

“monolithic integrated circuit” means a microcircuit fabricated as a single component consisting of elements formed in or on a single semi-conducting substrate by diffusion, implantation or deposition;

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“module” means an assembly, replaceable as an entity, not normally capable of being disassembled;

“microprocessor microcircuit” means a single package (normally single-chip) electronic logic unit capable of executing from external memory a series of general purpose instructions contained in the external memory;

“microcomputer microcircuit” means an electronic logic unit capable of executing instructions from internal memory on data contained in the internal memory;

“multichip microcircuit” means a microcircuit containing two or more monolithic integrated circuit chips bonded to a common substrate;

“prediffused microcircuit” means an arrangement of elements of monolithic integrated circuits, formed within a single semi-conducting substrate, which can be subsequently interconnected or otherwise modified to perform one of a variety of functions; and

“related integrated optical microcircuit” means a microcircuit containing one or more elements designed to function as a photosensor or photoemitter, or to perform optical or electro-optical functions.

— Burst transmitters and associated receiving equipment (except simple on-line morse or other data signal convertors or standard items of ADP equipment) and specialised assemblies, sub-assemblies and components therefor.....

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In this entry a burst transmitter is any electronic equipment or device for use with radio or other communications systems, whether part of a transmitter or modulation device or ancillary to it, which has a capability to accept and store data (telegraphic, speech or other) and to transmit these at transmission speeds/bit rates which are multiples of the input keying speed/bit rates, the purpose or effect of which is to reduce total message duration time and thus to evade detection by other than the intended recipient.

— Electrical or electronic equipment, whether or not separately specified in an entry in this Schedule, in respect of which a certificate has been issued to the knowledge of the exporter by or on behalf of the Secretary of State to the effect that the equipment to which the certificate relates meets or has been modified or designed to meet government standards concerned with the limitation of compromising electromagnetic radiation.....

A

IL1565 (cont.)	<p>(7) Digital computers, and related equipment therefor, other than those specified in heads (1), (3) and (6) above, whether or not embedded in, incorporated in or associated with equipment or systems, including but not limited to the following:</p> <p>(a) digital computers and related equipment designed or modified for—</p> <p style="padding-left: 20px;">(i) signal processing A</p> <p style="padding-left: 20px;">(ii) image enhancement..... A</p> <p style="padding-left: 20px;">(iii) local area networks..... A</p> <p style="padding-left: 20px;">(iv) multi-data-stream processing A</p> <p style="padding-left: 20px;">(v) combined recognition, understanding and interpretation of image, continuous (connected) speech or connected word text, other than signal processing or image enhancement A</p> <p style="padding-left: 20px;">(vi) real time processing of sensor data—..... A</p> <p style="padding-left: 40px;">(a) concerning events occurring outside the computer using facility; and</p> <p style="padding-left: 40px;">(b) provided by equipment specified in the entries in Group 3F relating to navigation, direction finding, radar and airborne communication equipment; communication, detection or tracking equipment; marine or terrestrial acoustic or ultrasonic systems; or telemetering and telecontrol equipment</p> <p style="padding-left: 20px;">(vii) microprocessor or microcomputer development systems A</p> <p style="padding-left: 20px;">(viii) fault tolerance A</p> <p style="padding-left: 20px;">(ix) user-accessible microprogrammability..... A</p> <p style="padding-left: 20px;">(x) data (message) switching..... A</p> <p style="padding-left: 20px;">(xi) stored-programme-controlled circuit switching. A</p> <p style="padding-left: 20px;">(xii) wide-area networks..... A</p> <p>(b) digital computers and related equipment therefor having both of the following characteristics:</p> <p style="padding-left: 20px;">(i) size, weight, power consumption and reliability or other characteristics, such as bubble memory, allowing easy application in mobile tactical military systems; and A</p> <p style="padding-left: 20px;">(ii) ruggedised above the level required for a normal commercial (office) environment but not necessarily to that specified in head (3)(b) above..... A</p> <p>except</p> <p style="padding-left: 20px;">(i) digital computers or related equipment therefor embedded in other equipment or systems and having all of the following characteristics—</p>
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- (a) not being the principal element of the other equipment or systems in which they are embedded;
 - (b) not being embedded in equipment or systems described elsewhere in this Schedule;
 - (c) the total processing data rate of any one embedded digital computer not exceeding 28 million bit per second;
 - (d) the sum of the total processing data rate of each embedded digital computer not exceeding 50 million bit per second; and
 - (e) the embedded digital computers or related equipment therefor not including either—
 - (i) equipment or systems specified in head (3) of the entry in Group 3F relating to communication transmission equipment or in the entry in this group relating to stored-programme-controlled communication switching equipment; or
 - (ii) equipment specified in head (7)(a) above, other than for—
 - (a) signal processing or image enhancement when lacking user-accessible programmability and when embedded in medical imaging equipment; or
 - (b) local area networks implemented by using integral interfaces designed to meet ANSI/IEEE Standard 488-1978 or IEC Publication 625-1;
- (ii) digital computers or related equipment therefor incorporated in other equipment or systems and having all of the following characteristics—
- (a) not being the principal element of the other equipment or systems in which they are incorporated;
 - (b) not being incorporated in equipment or systems specified elsewhere in this Schedule;
 - (c) the total processing data rate of any one incorporated digital computer not exceeding 5 million bit per second;
 - (d) the total internal storage available to the user not exceeding 4.9 million bit; and
 - (e) the incorporated digital computers or related equipment therefor not including—
 - (i) related equipment specified elsewhere in this Schedule;
 - (ii) equipment or systems specified in head

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(cont.)

- (3) of the entry in Group 3F relating to communication transmission equipment or in the entry in Group 3F relating to stored-programme-controlled communication switching equipment;
- (iii) equipment specified in head 7(b) above; or
- (iv) equipment specified in head 7(a) above, other than for—
 - (a) signal processing or image enhancement when lacking user-accessible programmability and embedded in medical imaging equipment; or
 - (b) local area networks implemented by using integral interfaces designed to meet ANSI/IEEE Standard 488-1978 or IEC Publication 625-1;
- (iii) digital computers, other than those specified in heads 7(a) and 7(b) above, in the form of complete systems and having all the following characteristics—
 - (a) designed for identifiable civil use;
 - (b) not specially designed for any equipment specified elsewhere in this Schedule;
 - (c) having a total processing data rate not exceeding 2 million bit per second;
 - (d) having a total internal storage available to the user not exceeding 1.1 million bit;
 - (e) not incorporating any of the following—
 - (i) a central processing unit implemented with more than one microprocessor or microcomputer microcircuit, other than any dedicated microprocessor or microcomputer microcircuit used solely for display, keyboard or input/output control, or any bit-slice microprocessor microcircuit;
 - (ii) a microprocessor or microcomputer microcircuit with—
 - (a) a principal operand (data) word length or more than 8 bit; or
 - (b) a typical speed-power dissipation product of less than 2 microjoules for microprocessor microcircuits or 1.2 microjoules for microcomputer microcircuits;
 - (iii) analogue-to-digital or digital-to-analogue converter microcircuits—

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(cont.)

- (a) exceeding the limits specified in the entry in this Group relating to converters, analogue-to-digital and digital-to-analogue; and
 - (b) other than for direct driven video monitors for normal public television;
 - (iv) related equipment specified elsewhere in this Schedule; or
 - (v) equipment specified in head (3) of the entry in Group 3F relating to communication transmission equipment or in the entry in this group relating to stored-programme-controlled communication switching equipment;
- (iv) peripheral equipment, including that containing embedded microprocessor microcircuits which lack user-accessible-programmability, the following—
- (a) card punches and readers;
 - (b) paper tape punches and readers;
 - (c) manually operated keyboards and teletype devices;
 - (d) manually operated graphic tablets having not more than 1,024 resolvable points along any axis;
 - (e) impact printers;
 - (f) non-impact printers, other than as specified in heads (2) or (3) of the entry in this Group relating to recording or reproducing equipment, not exceeding—
 - (i) 2,000 lines per minute; or
 - (ii) 300 characters per second;
 - (g) plotting equipment, other than as specified in heads (2) or (3) of the entry in this Group relating to recording or reproducing equipment, producing a physical record by ink, photographic, thermal or electrostatic techniques and having—
 - (i) a linear accuracy not better than $\pm 0.004\%$; and
 - (ii) an active plotting area of not more than 1,700 mm by 1,300 mm;
 - (h) digitising equipment generating rectilinear coordinate data by manual or semi-automatic tracing of physical records and having—

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- (i) a linear accuracy not better than $\pm 0.004\%$; and
- (ii) an active digitising area of not more than 1,700 mm by 1,300 mm;
- (i) optical mark recognition (OMR) equipment;
- (j) optical character recognition (OCR) equipment which—
 - (i) does not contain signal processing or image enhancement equipment; and
 - (ii) is only for—
 - (a) stylised OCR characters;
 - (b) other internationally standardised stylised character fonts; or
 - (c) other characters limited to non-stylised or hand-printed numerics and up to 10 hand-printed alphabetic or other characters;
- (k) cathode-ray tube displays for which circuitry and character-generation devices, external to the tube, limit the capabilities to—
 - (i) alpha-numeric characters in fixed formats;
 - (ii) graphs composed only of the same basic elements as used for alpha-numeric character composition; or
 - (iii) graphic displays for which the sequence of symbols and basic elements of symbols are fixed;
- (l) cathode-ray tube graphic displays, other than those containing tubes specified in the entry in Group 3F relating to electronic cathode-ray tubes, limited as follows—
 - (i) the maximum bit transfer rate from the electronic computer to the display not exceeding 9,600 bit per second, other than direct driven video monitors;
 - (ii) not more than 1,024 resolvable elements along any axis; and
 - (iii) not more than 16 shades of grey or colour;
- (m) cathode-ray tube graphic displays, other than those containing tubes specified in the entry in Group 3F relating to electronic cathode-ray tubes, provided that they are—
 - (i) part of industrial or medical equipment; and

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(cont.)

- (ii) not specially designed for use with electronic computers;
- (n) graphic displays specially designed for signature or security checking having an active display area not exceeding 150 sq cm;
- (o) other displays, provided that—
 - (i) circuitry and character-generation devices external to the display device (for example, panel or tube), and the construction of the display device limit its capabilities to—
 - (a) alpha-numeric, characters in fixed formats;
 - (b) graphs composed only of the same basic elements as used for alpha-numeric character composition; or
 - (c) graphic displays for which the sequence of symbols and basic elements of symbols are fixed; and
 - (ii) the displays are limited to—
 - (a) a capability for displaying no more than 3 levels (off, intermediate and full on);
 - (b) a minimum character height of not less than 5.5 mm if the area is 1,200 sq cm or less, or not less than 20 mm if the area is more than 1,200 sq cm; and
 - (c) not having circuitry or non-mechanical character-generation devices as an integral part of the display device;
- (p) light gun devices or other manual graphic input devices which are—
 - (i) part of displays not specified elsewhere in this Group; and
 - (ii) limited to 1,024 resolvable elements along any axis;
- (q) disc drives for non-rigid magnetic media (floppy discs) which do not exceed—
 - (i) a gross capacity of 17 million bit;
 - (ii) a maximum bit transfer rate of 0.52 million bit per second;
 - (iii) an access rate of 6 accesses per second;
- (r) cassette/cartridge tape drives or magnetic tape drives which do not exceed—
 - (i) a maximum bit packing density of 63 bit per mm (1600 bit per inch) per track;
 - (ii) a maximum bit transfer rate of 1.28 million bit per second; or

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- (iii) a maximum tape read/write speed of 254 cm (100 inch) per second; or
- (s) cassette/cartridge tape drives which do not exceed—
 - (i) a maximum bit packing density of 107 bit per mm (2700 bit per inch) per track; or
 - (ii) a maximum bit transfer rate of 0.128 million bit per second;
- (v) input/output interface or control units including those containing embedded microprocessor microcircuits which lack user-accessible programmability, the following—
 - (a) those designed for use with peripheral equipment specified in exception (iv) of this head; or
 - (b) those designed for use with digital recording equipment specially designed to use magnetic card, tag, label or bank cheque recording media, specified in head (1)(b) of the entry in this Group relating to recording or reproducing equipment.

(For technology relating to this entry, see the entry in Group 4 relating thereto).

In this entry—

“access rate” of a seek mechanism means the reciprocal of the average access time of the seek mechanism, “average access time” of a seek mechanism means the sum of the average seek time and the latency time, “average seek time” means the sum of the maximum seek time and twice the minimum seek time, “maximum seek time” is for fixed head devices zero or for moving head or moving media devices the rated time to move between the two most widely separated tracks, “minimum seek time” is for fixed head devices zero or for moving head or moving media devices the rated time to move from one track to an adjacent track, and “latency time” means the rotational period divided by twice the number of independent read/write heads per track;

“associated” with equipment or systems means not feasibly capable either of being removed from such equipment or systems or of being used for other purposes, and not essential to the operation of such equipment or systems;

“communication channel” means the transmission path or circuit including the terminating transmission of receiving equipment (modems) for transferring digital information between distant locations;

“data device” means equipment capable of transmitting or receiving sequences of digital information;

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“data (message) switching” means the technique, including but not limited to store-and-forward or packet switching, for:

- (a) accepting data groups (including messages, packages or other digital or telegraphic information groups which are transmitted as a composite whole);
- (b) storing (buffering) data groups as necessary;
- (c) processing part or all of the data groups, as necessary, for the purpose of control (routing, priority, formatting, code conversion, error control, retransmission or journaling), transmission or multiplexing; and
- (d) retransmitting (processed) data groups when transmission or receiving facilities are available;

“embedded” in equipment or systems means not feasibly capable either of being removed from such equipment or systems or of being used for other purposes;

“fault tolerance” means the capability to perform correctly without human intervention after failure of any assembly, so that there is no single point in the system the failure of which could cause catastrophic failure of the system’s functioning; and “assembly” means a number of components (circuit elements, discrete components, microcircuits) connected together to perform a specific function or functions, replaceable as an entity (and normally capable of being disassembled);

“hybrid computer” means equipment which can accept data, process data in both analogue and digital representations and provide output of data;

“image digitiser” means a device for directly converting an analogue representation of an image into a digital representation;

“image enhancement” means the processing of externally derived information-bearing images by algorithms such as time-compression, filtering, extraction, selection, correlation, convolution or transformations between domains, excluding algorithms using only linear or rotational transformation of a single image, such as translation, feature extraction, registration or false coloration;

“incorporated” in equipment or systems means not feasibly capable either of being removed from such equipment or systems or of being used for other purposes, and essential to the operation of such equipment or systems;

“main storage” means the primary storage for data or instructions for rapid access by a central processing unit. It consists of the internal storage of a digital computer and any hierarchical extension thereto, such as cache storage or non-sequentially accessed extended storage;

“maximum bit packing density” means the density of

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recording specified in accordance with the appropriate ANSI or ISO Standard (e.g. ANSI X3.14-1979, ISO 1862-1975; ANSI X3.22-1973, ISO 1873-1876; ANSI X3.39-1973, ISO 3788-1976; ANSI X3.48-1977, ISO 3407-1976; ANSI X3.56-1977, ISO 4057-1979; ANSI X3.54-1976);

“maximum bit transfer rate”—

- (a) of a drum or disc drive is the product of the maximum number of binary digit (bit) positions per unformatted track and the number of tracks which simultaneously can be read or written, divided by the rotational period;
- (b) of a magnetic tape drive is the product of the “maximum bit packing density”, the number of data bits per character (ANSI) or per row (ISO), and the maximum tape read/write speed;

“most immediate storage” means the portion of the main storage most directly accessible by the central processing unit. For single level main storage, this is the internal storage, and for hierarchical “main storage”, this is the cache storage; the instruction stack; or the data stack;

“multi-data-stream processing” means the microprogramme or equipment architecture technique which permits processing two or more data sequences under the control of one or more instruction sequences by means such as parallel processing, or structured arrays of processing elements;

“net capacity” of a drum, disc or cartridge type streamer tape drive, or a bubble memory is the total capacity designed to be accessible to the digital computer excluding error control bits;

“principal element” means a digital computer or related equipment which is either embedded or incorporated in another equipment or system and which in replacement value is more than 35% of the replacement value of the total equipment or system (including the digital computer or related equipment);

“real time processing” means processing of data by an electronic computer in response to an external event according to time requirements imposed by the external event;

“related equipment” means the following equipment embedded in, incorporated in or associated with electronic computers:— equipment for interconnecting analogue computers with digital computers or for interconnecting digital computers, equipment for interfacing electronic computers to local area networks or to wide area networks, communication control units and other input/output control units, recording or reproducing equipment relating to this entry described in the entry in this group relating to such equipment, displays or other peripheral equipment;

“signal processing” means the processing of externally

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derived information-bearing signals by algorithms such as time compression, filtering, extraction, selection, correlation, convolution or transformations between domains (such as Fast Fourier Transform or Walsh Transform);

“terminal device” means a data device which does not include process control sensing and actuating devices, and which is capable of accepting or producing a physical record, accepting a manual input, or producing a visual output. Normal groupings of such equipment (such as a combination of paper tape punch/reader and printer), connected to a single data channel or communication channel, are considered as a single terminal device;

“total internal storage available to the user” means the sum of the individual capacities of all internal user-alterable or user-replacement storage devices which may be included in the equipment at the same time and used to store software instructions or data;

“total processing data rate”—

- (a) of a single central processing unit is its processing data rate;
- (b) of multiple central processing units which do not share direct access to a common main storage is the individual processing data rate of each central processing unit, that is each unit is separately treated as a single central processing unit as in (a) above; *or*
- (c) of multiple central processing units, which partially or fully share direct access to a common main storage at any level, is the sum of the highest of the individual ‘processing data rates’ of all central processing units and 0.75 times the processing data rate of each remaining central processing unit sharing the same main storage, assuming the configuration of equipment, which would maximize this sum of rates;

“processing data rate” is the maximum of either the ‘floating point processing data rate’ (R_f) or the ‘fixed point processing data rate’ (R_x). It should be noted that the ‘processing data rate’ of a central processing unit implemented with two or more microprocessor microcircuits, not including any dedicated microprocessor microcircuit used solely for display, keyboard or input/output control, is the sum of the individual processing data rates of all these microprocessor microcircuits;

“floating point processing data rate” (R_f) is the sum of:

- (1) 0.85 times the number of bits in a fixed point instruction (n_{ix}) or 0.85 times the number of bits in a floating point instruction (n_{if}), if no fixed point instructions are implemented;
- (2) 0.15 times the number of bits in a floating point instruction (n_{if});

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(3) 0.40 times the number of bits in a fixed point operand (n_{ox}) or 0.40 times the number of bits in a floating point operand (n_{of}), if no fixed point instructions are implemented; and

(4) 0.15 times the number of bits in a floating point operand (n_{of});

divided by the sum of:

(1) 0.85 times the execution time for a fixed point addition (t_{ax}) or for a floating point addition (t_{af}), if no fixed point instructions are implemented.

(2) 0.09 times the execution time for a floating point addition (t_{af}); and

(3) 0.06 times the execution time for a floating point multiplication (t_{mf}) or for the fastest available subroutine (t_{msub}) to simulate a floating point multiplication instruction, if no floating point multiplication instructions are implemented.

Thus:

$$R_f = \frac{(0.85)n_{ix} + (0.15)n_{if} + (0.40)n_{ox} + (0.15)n_{of}}{(0.85)t_{ax} + (0.09)t_{af} + (0.06)t_{mf}}; \text{ or,}$$

if no fixed point instructions are implemented:

$$R_f = \frac{(1.00)n_{if} + (0.55)n_{of}}{(0.94)t_{af} + (0.06)t_{mf}}; \text{ or}$$

if no floating point multiplication instructions are implemented ($t_{mf} = t_{msub}$):

$$R_f = \frac{(0.85)n_{ix} + (0.15)n_{imf} + (0.40)n_{ox} + (0.15)n_{of}}{(0.85)t_{ax} + (0.09)t_{af} + (0.06)t_{msub}}$$

If a digital computer has neither floating point addition nor floating point multiplication instructions, then its floating point processing data rate is equal to zero;

“fixed point processing data rate” (R_x) is the sum of:

(1) 0.85 times the number of bits in a fixed point addition instruction (n_{iax});

(2) 0.15 times the number of bits in a fixed point multiplication instruction (n_{imx}); and

(3) 0.55 times the number of bits in a fixed point operand (n_{ox});

divided by the sum of:

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- (1) 0.85 times the execution time for a fixed point addition (t_{ax}); and
- (2) 0.15 times the execution time for a fixed point multiplication (t_{mx}) or for the fastest available subroutine (t_{msub}) to simulate a fixed point multiplication instruction if no fixed point multiplication instructions are implemented.

Thus:

$$R_x = \frac{(0.85)n_{iax} + (0.15)n_{imx} + (0.55)n_{ox}}{(0.85)t_{ax} + (0.15)t_{mx}}; \text{ or}$$

if no fixed point multiplication instructions are implemented ($t_{mx} = t_{msub}$):

$$R_x = \frac{(0.85)n_{iax} + (0.15)n_{imx} + (0.55)n_{ox}}{(0.85)t_{ax} + (0.15)t_{msub}}$$

If a digital computer has neither fixed point addition nor fixed point multiplication instructions, then its fixed point processing data rate is equal to zero.

“number of bits in a:

fixed point addition instruction (n_{iax}), fixed point multiplication instruction (n_{imx}), floating point addition instruction (n_{iaf}), or floating point multiplication instruction” (n_{imf}) is the appropriate shortest single fixed or floating point instruction length which permits full direct addressing of the main storage. It should be noted that when multiple instructions are required to simulate an appropriate single instruction, the number of bits in the above instructions is defined as 16 bit plus the number of bits (b_{iax} , b_{imx} , b_{iaf} , b_{imf}) which permits full direct addressing of the main storage;

“number of bits in a fixed point operand” (n_{ox}) is the shortest fixed point operand length or 16 bit, whichever is greater.

“number of bits in a floating point operand” (n_o) is the shortest floating point operand length or 30 bit, whichever is greater. If the addressing capability of an instruction is expanded by using a base register, then the number of bits in an instruction, fixed or floating point, addition or multiplication is the number of bits in the instruction with the standard address length including the number of bits necessary to use the base register.

“execution time” is

- (a) the time certified or published by the manufacturer for the execution of the fastest appropriate instruction, under the following conditions:
 - (1) no indexing or indirect operations are included;
 - (2) the instruction is in the most immediate storage;

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(cont.)

- (3) one operand is in the accumulator or in a location of the most immediate storage, which is acting as the accumulator;
 - (4) the second operand is in the most immediate storage; and
 - (5) the result is left in the accumulator or the same location in the most immediate storage, which is acting as the accumulator;
- (b) if only the maximum and minimum execution times of the instructions are published, the sum of:
- the maximum execution time of an instruction (t_{\max}), and twice the minimum execution time of this instruction (t_{\min}); divided by three.

$$\text{Thus: } t = \frac{t_{\max} + 2 \times t_{\min}}{3}$$

(t stands for any of the values t_{ax} , t_{af} , t_{mx} or t_{mf});

- (c) for central processing units which simultaneously fetch more than one instruction from one storage location, the average of the execution times when executing instructions fetched from all possible locations within the stored word. If the longest fixed point operand length is smaller than 16 bit, execution time is taken as the time required for the fastest available subroutine to simulate a 16 bit fixed point operation. If the addressing capability of an instruction is expanded by using a base register, then the execution time includes the time for adding the content of the base register to the address part of the instruction;

“total transfer rate”—

- (a) of the input/output control unit—drum, disc or cartridge-type streamer tape drive combinations (R_{idot}) means the sum of the individual transfer rates of all input/output control unit—drum, disc or cartridge-type streamer tape drive combinations (R_{id}) provided with the system which can be sustained simultaneously assuming the configuration of equipment which would maximise this sum of rates. Thus: $R_{\text{idot}} = \text{SUM } R_{\text{id}}$;

“transfer rate”—

- (i) of an input/output control unit—drum or disc drive combination (R_{id}) is the smaller of either the input/output control unit transfer rate (R_{ic}), or the sum of the individual transfer rates of all independent seek mechanisms (R_{is}).

Thus: $R_{\text{id}} = \min (R_{\text{ic}}; \text{SUM } R_{\text{is}})$;

- (ii) of an input/output control unit—cartridge-type streamer tape drive combination (R_{ic}) is

- (a) with rotational position sensing (rps), the product of the number of independent

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(cont.)

read/write channels (C) and the greatest "maximum bit transfer rate" ($R_{tsmaxmax}$) of all independent seek mechanisms; or

- (b) without rotational position sensing (rps), two-thirds of this product. Thus:

$$R_{ic} = C \times R_{tsmaxmax} \text{ (with rps), or}$$

$$R_{ic} = \frac{2}{3} \times C \times R_{tsmaxmax} \text{ (without rps);}$$

- (iii) of an independent seek mechanism (R_{is}) is the product of:

the maximum bit transfer rate (R_{tsmax}), and the rotational period (t_r);

divided by the sum of:

the rotational period (t_r), the minimum seek time (t_{smin}) and the latency time (t_l).

$$\text{Thus: } R_{is} = \frac{R_{tsmax} \times t_r}{t_r + t_{smin} + t_l};$$

- (b) Of the input/output control unit—magnetic tape drive combinations (R_{ittot}), is the sum of the individual transfer rates of all input/output control unit—magnetic tape drive combinations (R_{itt}) provided with the system which can be sustained simultaneously assuming the configuration of equipment which would maximise this sum of rates.

$$\text{Thus: } R_{ittot} = \text{SUM } R_{itt}$$

"transfer rate" of an input/output control unit—cartridge-type streamer or magnetic tape drive combination (R_{itt}) is the product of the number of independent read/write channels (C) and the greatest maximum bit transfer rate ($R_{ittmaxmax}$) of all tape drives.

$$\text{Thus: } R_{itt} = C \times R_{ittmaxmax}$$

- (c) of the input/output or communication control unit—directly connected data channel combinations, is the sum of the individual transfer rates of all data channels provided with the system which can be sustained simultaneously assuming the configuration of equipment which would maximise this sum of rates;

"transfer rate of any data channel" means the sum of the individual bit transfer rates of all the other peripheral devices, excluding terminal devices, which can be sustained simultaneously on the data channel;

"user-accessible microprogrammability" means the facility allowing a user to insert, modify or replace microprogrammes;

"user-accessible programmability" means the facility allowing a user to insert, modify or replace a programme by means other than a physical change in wiring or interconnections or the setting of function controls including entry of parameters; and

- IL1565 (cont.) “virtual storage” means the storage space that may be regarded as addressable main storage by the user of a computer system in which virtual addresses are mapped into real addresses. (The size of virtual storage is limited by the addressing scheme of the computer system and not by the actual number of main storage locations).
- IL1566 Software, the following:—
- (1) Software of any category, the following:
- (a) software designed or modified for any computer that is part of a computer series designed and produced in any country specified in Article 2(iv) of this Order.... A
except application software designed for and limited to—
- (i) accounting, general ledger, inventory control, payroll, accounts receivable, personnel records, wages calculation or invoice control;
- (ii) data and text manipulation including sort/merge, text editing, data entry or word processing;
- (iii) data retrieval from established data files for purposes of report generation or inquiry for the functions specified in sub-heads (a)(i) or (a)(ii) above; or
- (iv) the non real time processing of pollution sensor data at fixed sites or in civil vehicles for civil environmental monitoring purposes.
- (b) software designed or modified for the design, development or production of goods specified, other than as exceptions, elsewhere in this Schedule A
- (c) software designed or modified for:
- (i) hybrid computers specified in the entry in this group relating to computers..... A
- (ii) one or more of the functions described in sub-head 7(a) of the entry in this group relating to computers or for digital computers or related equipment designed or modified for such functions..... A
except the minimum specially designed software in machine-executable form for digital computers and related equipment therefor specified as exceptions in sub-heads (a) and (b) under head (7) of the entry in this group relating to computers when supplied with the equipment or systems.
- (d) software for computer-aided design, manufacture, inspection or test of goods specified, other than as exceptions, elsewhere in this Schedule A
- (e) software designed or modified to provide certifiable multi-level security or certifiable user-isolation appli-

IL1566 (cont.)	<p>cable to government-classified material or to applications requiring an equivalent level of security, or software to certify such software A</p> <p>(2) Categorised software, the following:</p> <p>(a) development systems—</p> <p>(i) those employing high-level language and designed for or containing programmes or data bases special to the development or production of—</p> <p>(a) specially designed software specified, other than as an exception, elsewhere in this Schedule A</p> <p>(b) software specified in sub-heads (1)(b) or (1)(c), of this entry, including any subset designed or modified for use as part of such a development system A</p> <p>(ii) those employing high-level language designed for or containing the software tools and data bases for the development or production of software, such as, or equivalent to, an Ada Programming Support Environment (APSE) or any subset, superset or derivative of APSE, including any subset of such a development system A</p> <p>(b) programming systems—</p> <p>(i) cross-hosted compilers and cross-hosted assemblers A</p> <p>(ii) compilers or interpreters designed or modified for use as part of a development system specified in sub-head (2)(a) above A</p> <p>(iii) disassemblers, decompilers or other software which convert programmes in object or assembly language into a higher level language A</p> <p>except simple debugging applications software, such as mapping, tracing, check-point/restart, breakpoint, dumping and the display of the storage contents or their assembly language equivalent.</p> <p>(c) diagnostic systems or maintenance systems designed or modified for use as part of a development system specified in sub-head (2)(a) above A</p> <p>(d) operating systems—</p> <p>(i) those designed or modified specially for digital computers or related equipment exceeding any of the following limits— A</p> <p>(a) central processing unit—main storage combinations—</p> <p>(i) total processing data rate of 48 million bit per second;</p>
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(cont.)

- (ii) total connected capacity of main storage of 25.2 million bit; and
- (iii) virtual storage capability of 512 M Byte;
- (b) input/output control unit—drum, disc or cartridge-type streamer tape drive combinations—
 - (i) total transfer rate of 15 million bit per second;
 - (ii) total access rate of 320 accesses per second;
 - (iii) total connected net capacity of 7,000 million bit; and
 - (iv) maximum bit transfer rate of any drum or disc drive of 10.3 million bit per second;
- (c) input/output control unit-bubble memory combinations—total connected net capacity of 2.1 million bit;
- (d) input/output control unit-magnetic tape drive combinations—
 - (i) “total transfer rate” of 5.2 million bit per second;
 - (ii) twelve magnetic tape drives;
 - (iii) maximum bit transfer rate of any magnetic tape drive of 2.6 million bit per second;
 - (iv) maximum bit packing density of 63 bit per mm (1600 bit per inch) per track; and
 - (v) maximum tape read/write speed of 508 cm (200 inch) per second
- (ii) those providing on-line transaction data processing which permits integrated teleprocessing and on-line updating of data bases A
- (e) application software—
 - (i) software for cryptologic or cryptanalytic applications..... A
 - (ii) artificial intelligence software, including software normally classified as expert systems enabling a digital computer to perform functions normally associated with human perception and reasoning or learning..... A
 - (iii) data base management systems which are designed to handle distributed data bases for—
 - (a) fault tolerance by using techniques such as maintenance of duplicated data bases, or
 - (b) integrating data at a single site from independent remote data bases A

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(cont.)

- (iv) software designed to adapt software resident on one digital computer for use on another digital computer both being of a type specified in the entry in this group relating to computers.....

A

(For technology relating to this entry, see the entry in Group 4 relating thereto).

In this entry—

“cross-hosted” refers to programming systems which produce programmes for a model of electronic computer different from that used to run the programming system, having code generators for equipment different from the host computer;

“development system” means software to develop or produce software. This includes software to manage those activities. Examples of a development system are programming support environments, software development environments, and programmer productivity aids;

“programming system” means software to convert a convenient expression of one or more processes (source code or source language) into equipment executable form (object code or object language);

“diagnostic system” means software to isolate or detect software or equipment malfunctions;

“maintenance system” means software to modify software or its associated documentation in order to correct faults, or for other updating purposes, or to maintain equipment;

“operating system” means software to control the operation of a digital computer or of related equipment, or the loading or execution of programmes;

“application software” means software other than a development system, programming system, diagnostic system, maintenance system or operating system;

“specially designed software” is defined as the minimum operating systems, diagnostic systems, maintenance systems and application software necessary to be executed on a particular equipment to perform the function for which it was designed. For other incompatible equipment to perform the same function requires modification of this software or addition of programmes.

“database management system” means application software to manage and maintain a database in one or more prescribed logical structures for use by other application software independent of the specific methods used to store or retrieve the database;

“distributed database” means a data base which is physically located and maintained in part or as a whole in two or more interconnected electronic computers or related equipment, so that inquiries from one location

IL1566 (cont.)	<p>can involve database access in other interconnected electronic computers or related equipment;</p> <p>“high-level language” means a programming language that does not reflect the structure of any one given electronic computer or class of electronic computers;</p> <p>“on-line updating” means processing in which the contents of a database can be amended within a period of time useful to interact with an external request.</p>	
IL1567	<p>Stored-programme-controlled communication switching equipment or systems, specially designed components therefor and specially designed software for the use of such equipment or systems, the following:—</p> <p>(1) Communication equipment or systems for data (message) switching, including those for local area network or for wide area network A</p> <p>(2) Communication equipment or systems for stored-programme-controlled circuit switching..... A</p> <p>except</p> <p>(a) key telephone systems which:</p> <p style="padding-left: 20px;">(i) do not provide direct dial access to a group of shared exchange lines or trunk circuits;</p> <p style="padding-left: 20px;">(ii) are not designed to be upgraded to private automatic branch exchanges (PABXs);</p> <p style="padding-left: 20px;">(iii) the software supplied</p> <p style="padding-left: 40px;">(a) is limited to the minimum specially designed software necessary for the installation, operation and maintenance of the equipment or systems and to machine-executable form; and</p> <p style="padding-left: 40px;">(b) does not include software specified in the entry in this group relating to cryptographic equipment, in sub-head (1)(e) of the entry in this group relating to software or in the entry in Group I relating to electronic equipment specially designed for military use, or software to permit modification of generic software or its associated documentation by the user;</p> <p>(b) stored-programme-controlled telegraph circuit switching equipment or systems which:</p> <p style="padding-left: 20px;">(i) are designed for civil use; and</p> <p style="padding-left: 20px;">(ii) provide only the services defined in CCITT Recommendations F.60 to 79, whereby telegraph subscribers can communicate directly and temporarily between themselves using start-stop telegraph equipment operating—</p> <p style="padding-left: 40px;">(a) at 300 baud or less; and</p>	

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(cont.)

- (b) with the international telegraph alphabets no 2 or 5;
 - (iii) the software supplied—
 - (a) is limited to the minimum specially designed software necessary for the installation, operation and maintenance of the equipment or systems and to machine-executable form; and
 - (b) does not include software specified in the entry in this group relating to cryptographic equipment, in sub-head (1)(e) of the entry in this group relating to software or in the entry in Group 1 relating to electronic equipment specially designed for military use, or software to permit modification of generic software or its associated documentation by the user; or
 - (c) stored-programme-controlled telephone circuit switching equipment or systems, provided that—
 - (i) the equipment or systems are designed for fixed civil use as space division analogue exchanges or time division analogue exchanges, being private automatic branch exchanges (PABXs);
 - (ii) the equipment or systems do not contain digital computers or related equipment specified in heads (1) and (3), sub-heads (a)(i) to (a)(x) (inclusive) or (a)(xii) of head (7) or sub-head (b) of head (7) of the entry in this group relating to computers;
 - (iii) communication channels or terminal devices used for administrative and control purposes are fully dedicated to these purposes and do not exceed a total data signalling rate of 9,600 bit per second;
 - (iv) voice channels are limited to 3,100 Hz as defined in CCITT Recommendation G.151;
 - (v) the PABXs do not have trunk circuit-to-subscriber line ratios exceeding 35% for PABXs with less than 100 subscriber lines or 20% for PABXs with 100 or more subscriber lines;
 - (vi) the PABXs do not have the following features—
 - (a) multi-level call pre-emption, including overriding or seizing of busy subscriber lines, trunk circuits or switches; or
 - (b) common channel signalling;
 - (vii) the software supplied—
 - (a) is limited to the minimum specially designed software necessary for the installation, operation and maintenance of the equipment or systems and to machine-executable form; and

IL1567 (cont.)	<p>(b) does not include software specified in the entry in this group relating to cryptographic equipment, in sub-head (1)(e) of the entry in Group 3G relating to software or in the entry in Group 1 relating to electronic equipment specially designed for military use, or software to permit modification of generic software or its associated documentation by the user.</p> <p>In this entry—</p> <p>“stored-programme-controlled circuit switching” is the technique for establishing, on demand and until released, a direct (space-division switching) or logical (time-division switching) connection between circuits based on switching control information derived from any source or circuit and processed according to the stored programme by one or more electronic computers;</p> <p>“local area network” means a data communication system which allows an arbitrary number of independent data devices to communicate directly with each other and is confined to a geographical area of moderate size, such as an office building, plant, campus or warehouse; and</p> <p>“wide area network” means a data communication system which allows an arbitrary number of data devices to communicate with each other and is designed to interconnect geographically dispersed facilities. It may include local networks.</p> <p>(For technology relating to this entry, see the entry in Group 4 relating thereto).</p>
IL1568	<p>Amplifiers, electronic or magnetic, specially designed for use with resolvers, the following:—</p> <p>(1) Isolation types having a variation of gain constant (linearity of gain) of 0.2% or better A</p> <p>(2) Summing types having a variation of gain constant (linearity of gain) or an accuracy of summation of 0.2% or better A</p> <p>(3) Types employing solid state Hall effect..... A</p> <p>(4) Types designed to operate below -55°C or above $+125^{\circ}\text{C}$..... A</p> <p>(5) Specially designed components and test equipment (including adapters and couplers) for the equipment specified in heads (1) to (4) above (inclusive) A</p>
IL1568	<p>Converters, analogue-to-digital and digital-to-analogue, other than digital voltage measuring apparatus specified in Group 3F, the following:—</p> <p>(1) Electrical-input type analogue-to-digital converters having any of the following characteristics:</p>

IL1567 (cont.)	<p>(a) a conversion rate of more than 200,000 complete conversions per second at rated accuracy; A</p> <p>(b) an accuracy in excess of 1 part in more than 10,000 of full scale over the specified operating temperature range; or A</p> <p>(c) a figure of merit of 10^8 or more (derived from the number of complete conversions per second divided by the accuracy)..... A</p> <p>(2) Electrical-input type digital-to-analogue converters having any of the following characteristics:</p> <p>(a) a maximum settling time of less than 3 microseconds for voltage output devices and of less than 250 nanoseconds for current output devices; A</p> <p>(b) an accuracy in excess of 1 part in more than 10,000 of full scale over the specified operating temperature range; or A</p> <p>(c) a figure of merit of more than 2×10^9 for voltage output converters or 1×10^{10} for current output converters..... A</p> <p>In this head "settling time" means the time required for the output to come within one half bit of the final value when switching between any two levels of the converters and the "figure of merit" is the reciprocal of the product of the maximum settling time in seconds and the accuracy.</p> <p>(3) Solid state synchro-to-digital and digital-to-synchro converters and resolver-to-digital or digital-to-resolver converters (including multi-pole resolvers), having a resolution of better than ± 1 part in 5,000 per full synchro revolution for single speed synchro systems or better than ± 1 part in 40,000 for dual speed systems A</p> <p>(4) Mechanical input types, including shaft-position encoders and linear displacement encoders but excluding complex servo-follower systems, the following:</p> <p>(a) rotary types having an accuracy of better than ± 1 part in 40,000 of full scale..... A</p> <p>(b) linear displacement types having a resolution of better than ± 5 micrometres..... A</p> <p>(5) Types designed to operate below -55°C or above $+125^\circ\text{C}$..... A</p> <p>(6) Specially designed components and test equipment (including adaptors and couplers) for the equipment specified in heads (1) to (5) above (inclusive) A</p>
IL1568	<p>Electro-optical devices designed to monitor relative rotation of remote surfaces; and specially designed components and test equipment (including adaptors and couplers) for such equipment..... A</p>

	(including adapters and couplers) for the equipment specified in heads (1) to (4) above (inclusive)	A
IL1568	Semi-conductor Hall field probes and specially designed components and test equipment (including adapters and couplers) therefor, the following:—	
	(1) Types made of indium arsenide-phosphide	A
	(2) Types coated with ceramic or ferritic materials (including tangential field probes, multipliers, modulators and recorder probes).....	A
	(3) Types with an open circuit sensitivity greater than $\frac{0.12 \text{ V}}{A \times kG}$	A
	In this entry "open circuit sensitivity" is calculated by dividing the open circuit Hall voltage by the product of the control current in A and the nominal value of the control field.	
IL1568	Servo-motors (gear-head or plain) the following:—	
	(1) Types designed to operate from power sources of more than 300Hz, except those designed to operate from power sources of over 300 Hz up to but not exceeding 400 Hz with a temperature range of from -55°C to $+125^{\circ}\text{C}$	A
	(2) Types designed to have a torque-to-inertia ratio of 50,000 radians per second or greater	A
	(3) Types incorporating special features to secure internal damping	A
	(4) Types designed to operate below -55°C or above $+125^{\circ}\text{C}$	A
	(5) Specially designed components and test equipment (including adapters and couplers) for the equipment specified in heads (1) to (4) above (inclusive)	A
IL1568	Synchros, resolvers, microsuns, synchro-tels and inductosuns, possessing any of the following characteristics:—	
	(1) A rated electrical error of 7 minutes of arc or less or of 0.2% or less of maximum output voltage	A
	(2) A rated dynamic accuracy for receiver types of 1° or less, except that for units of size 30 (76.2 mm in diameter) or larger, a rated dynamic accuracy of less than 1°	A
	(3) Multi-speed from single shaft types	A
	(4) Types designed for gimbal mounting	A

IL1568 (cont.)	or (5) Types designed to operate below -55°C or above $+125^{\circ}\text{C}$	A
	and specially designed components and test equipment (including adapters and couplers) for the equipment specified in heads (1) to (5) above (inclusive).....	A
IL1568	Synchronous motors, the following:— (1) Types not exceeding size 20 (50.8 mm in diameter) having synchronous speeds in excess of 3,600 r.p.m. (2) Types designed to operate from power sources of more than 400 Hz..... (3) Types designed to operate below -55°C , or above $+125^{\circ}\text{C}$ (4) Specially designed components and test equipment (including adapters and couplers) for the equipment specified in heads (1) to (3) above (inclusive).....	A A A A
IL1568	Torquers, direct current and alternating current (torque motors specially designed for gyros and stabilised platforms); and specialised components and test equipment (including adapters and couplers) for such equipment	A
IL1570	Thermoelectric materials and devices, the following:— (1) Thermoelectric materials with a maximum product of the figure of merit (Z) and the temperature (T in $^{\circ}\text{Kelvin}$) in excess of 0.75:..... (2) Junctions and combinations of junctions using any of the materials specified in head (1) above..... (3) Heat absorbing or electric power generating devices incorporating any of the junctions specified in head (2) above... (4) Other power generating devices which generate in excess of 22 W per kg or of 17.7 kW per cubic metre of the devices' basic thermoelectric components..... (5) Specially designed components for the equipment specified in heads (3) and (4) above (inclusive).....	A A A A
	In this entry— “the figure of merit (Z)” equals Seebeck coefficient squared divided by the product of electrical resistivity and thermal conductivity; and the weight and cubic measurement in head (4) are not intended to encompass the complete device but to include only the thermoelectric elements and assembly and the components for pumping calories. Other components, such	

IL1570 (cont.)	as heating or cooling sources or containers, device frames or stands and control equipment are not to be included in the calculations.	
IL1571	<p>Magnetometers, magnetometer systems and related equipment, the following:—</p> <p>(1) Magnetometers and magnetometer systems having or capable of having a sensitivity better than ± 1 gamma ($\pm 10^{-5}$ oersteds), A</p> <p>except magnetometers having sensitivities not better than ± 0.1 gamma ($\pm 10^{-6}$ oersteds) where the reading rate capability is not faster than once per half-second.</p> <p>(2) Magnetometer test facilities able to control magnetic field values to an accuracy of 1 gamma ($\pm 10^{-5}$ oersteds) or less A</p> <p>(3) Magnetic compensation systems using digital computers, non-magnetic platforms and calibration systems A</p> <p>(4) Specially designed components for the equipment specified in heads (1) to (3) above (inclusive)..... A</p> <p>In this entry "sensitivity" is defined as the visually recognised minimum sinusoidal signal in the frequency range of 0.025 Hz to 1.5 Hz when signal-to-noise ratio is higher than 1.</p>	
IL1572	<p>Recording or reproducing equipment and specially designed components therefor, the following:—</p> <p>(1) Equipment using magnetic techniques, A</p> <p>except</p> <p>(a) equipment specially designed for voice or music;</p> <p>(b) equipment specially designed to use magnetic card, tag, label or bank cheque recording media with a magnetic surface area not exceeding 85 sq cm;</p> <p>(c) video magnetic tape and disc recorders specially designed for civil television recording using a signal registered with the International Radio Consultative Committee (CCIR) or specially designed or adapted for use with medical equipment and having all of the following characteristics:</p> <p>(i) not ruggedised;</p> <p>(ii) not rated for continuous operation in ambient temperatures from below -20°C to above $+55^{\circ}\text{C}$;</p> <p>(iii) not specially designed for underwater use;</p> <p>(vi) 3 dB recording bandwidth not exceeding 6 MHz;</p>	

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(cont.)

- (v) a signal-to-noise ratio not exceeding 48 dB (or 52 dB if the equipment is of the cassette type);
 - (vi) maximum length of time of a single scan not exceeding 20 milliseconds;
 - (vii) portable or transportable and having a net weight not exceeding 50 kg;
- (d) Analogue magnetic tape recorders specially designed for use with medical equipment for recording physiological signals and having all of the following characteristics:
- (i) not ruggedised;
 - (ii) not rated for continuous operation in ambient temperatures from below -20°C to above $+55^{\circ}\text{C}$;
 - (iii) not specially designed for underwater use;
 - (iv) bandwidth capability at maximum design speed not exceeding 300 kHz per track;
 - (v) recording density not exceeding 5000 magnetic flux sine waves per 25.4 mm per track;
 - (vi) not including either recording or reproducing heads of the rotary or floating types or heads designed for use in equipment designed to specifications superior to those defined in subparagraphs (iv) or (v) above;
 - (vii) tape speed not exceeding 152.4 cm per second;
 - (viii) not exceeding 20 recording tracks (excluding audio voice track);
 - (ix) start-stop time not less than 25 milliseconds;
 - (x) equipped with tape-derived (off-tape) servo speed control and with a time displacement (base) error of not less than ± 5 microseconds at a tape speed of 152.4 cm per second and not less than ± 10 microseconds at any lower tape speed measured in accordance with applicable Inter-Range Instrumentation Group (IRIG) and Electronic Industries Group (EIA) documents;
- (e) Digital tape recorders specially designed for civil use and used for the collection of medical data obtained from nuclear or other ionizing radiation measurements and having all of the following characteristics:
- (i) not ruggedised;
 - (ii) not rated for continuous operation in ambient temperatures from below -20°C to above $+55^{\circ}\text{C}$;
 - (iii) mean packing density, with less than 5% loss of pulses, not exceeding 800 pulses per 25.4 mm per track;

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(cont.)

- (iv) designed to specifications not superior to those defined in (d)(vi), (ix) and (x) above;
- (v) tape speed not exceeding 95 cm per second;
- (vi) not exceeding 8 recording tracks;
- (vii) packing density not exceeding 800 bits per 25.4 mm per track;

(f) Digital recording and reproducing equipment operating serially with a packing density not exceeding 800 bits per 25.4 mm per track specially designed for use with, and incorporated in, typewriter systems used for preparing, correcting and composing text or any of these functions;

(g) Recording or reproducing equipment which is limited to both:

- (i) a tape width not exceeding $\frac{1}{4}$ inch (6.35 mm);
- (ii) digital recording techniques in serial form with a packing density not exceeding 800 bpi;

(2) Equipment using electron beam(s) operating in a vacuum or laser-produced light beams or both that produce patterns or images directly on the recording surface, and specialised equipment for image development,..... A

except

- (a) equipment specifically designed for the production of audio or video disc masters for the replication of entertainment and education type discs;
- (b) facsimile equipment incorporating lasers such as used for commercial weather imagery and commercial wire photos and text;
- (c) equipment using electron beams operating in a vacuum specially designed for television recording on film, using a signal registered with the International Radio Consultative Committee (CCIR) and having all of the following characteristics:
 - (i) not ruggedised;
 - (ii) not rated for continuous operation in ambient temperatures from below -20°C to above $+55^{\circ}\text{C}$;
 - (iii) not specially designed for underwater use;
 - (iv) pattern or image frame size not exceeding $3\text{ mm} \times 2.3\text{ mm}$;
 - (v) pattern or image not exceeding 312.5 lines per frame;
 - (vi) beam spot position stability not better than 0.3 per cent;
 - (vii) 3 dB recording bandwidth not exceeding 4 MHz;

IL1572
(cont.)

(see also the entry in Group 3F relating to lasers and laser systems);

(3) Graphic instruments capable of continuous direct recording of sinusoidal waves at frequencies exceeding 20 kHz. A

(4) Recording media (tapes, drums, discs and matrices) used in equipment specified in heads (1) to (3) above (inclusive),... A
except

(a) video tapes, the following:—

(i) with a magnetic coating material consisting only of undoped gamma-ferric (iron) oxide with a rated intrinsic coercivity not exceeding 350 oersteds and having all of the following characteristics:

(a) designed for use in video recorders having a 3 dB recording bandwidth not exceeding 6 MHz;

(b) a tape width not exceeding 25.4 mm;

(c) a magnetic coating thickness not less than 10.2 micrometres (0.40 mil);

(d) a tape length not exceeding 1402 m;

(ii) with a magnetic coating material consisting only of chromium dioxide with a rated intrinsic coercivity not exceeding 650 oersteds and having all of the following characteristics:

(a) designed for use in video recorders having a 3 dB recording bandwidth not exceeding 6 MHz;

(b) a tape width not exceeding 25.4 mm;

(c) a tape length not exceeding 548.6 m;

(iii) video tape in cassettes with a rated intrinsic coercivity not exceeding 750 oersteds and having all of the following characteristics:

(a) designed for use in video tape recorders having a 3 dB recording bandwidth not exceeding 6 MHz;

(b) a magnetic coating thickness not less than 2.54 micrometres (0.1 mil);

(c) a tape length not exceeding 548.6 m;

(d) a tape width not exceeding 19.05 mm;

(b) instrumentation tape for use in analogue recorders having a recording density not exceeding 5000 magnetic flux sine waves per 25.4 mm per track and having all of the following characteristics:

(i) a tape width not exceeding 25.4 mm;

IL1572
(cont.)

- (ii) a magnetic coating thickness not less than 10.2 micrometres (0.40 mil);
- (iii) a tape length not exceeding 1402 m;
- (c) computer tape designed for digital longitudinal recording and reproduction and having all of the following characteristics:
 - (i) a magnetic coating of a specified packing density of not more than 6250 bits per 25.4 mm (9042 flux changes per 25.4 mm) along the length of the tape;
 - (ii) a magnetic coating thickness not less than 5.08 micrometres (0.2 mil);
 - (iii) a tape width not exceeding 25.4 mm;
 - (iv) a tape length not exceeding 1097 m;
- (d) computer tape in cassettes or cartridges designed for digital longitudinal recording and reproduction and having all of the following characteristics:
 - (i) a magnetic coating of a specified packing density of not more than 1600 bits per 25.4 mm (3200 flux changes per 25.4 mm) along the length of the tape;
 - (ii) a magnetic coating thickness not less than 4.32 micrometres (0.17 mil);
 - (iii) a tape width not exceeding 6.35 mm;
 - (iv) a tape length not exceeding 274.3 m;

On condition that the magnetic tape referred to in sub-heads 4(a) to (d) above (inclusive) is a standard commercial product that has been in quantity production for at least two years with a base material consisting only of polyester or cellulose acetate, and is not designed for use in satellite applications.

- (e) Computer flexible disc cartridges designed for digital recording and reproduction and having all of the following characteristics:
 - (i) a magnetic coating of a specified packing density of not more than 13262 flux changes per radian (3268 bits per 25.4 mm at a radius of 51.536 mm around the disc);
 - (ii) a magnetic coating thickness not less than 2.54 micrometres (0.1 mil);
 - (iii) a disc thickness not exceeding 80 micrometres (3.0 mil);
 - (iv) a disc outer diameter not exceeding 201 mm;
 - (v) a disc inner diameter not exceeding 38.1 mm.

(5) Specially designed components for the equipment specified in heads (1) to (3) above (inclusive).....

A

- IL1573 Superconductive electromagnets and solenoids, of the following types:—
- (1) Those specially designed for gyrotron application having a non-uniform distribution of current-carrying windings, measured along the axis of symmetry, A
 except when rated for magnetic field strengths of less than 3 tesla (30 kilogauss) or overall current density in the windings of less than 10,000 A/cm².
- (2) Those specially designed to be fully charged or discharged in less than one minute and having all of the following characteristics:
- (a) the maximum energy delivered during discharge divided by the duration of the discharge being more than 500 kJ per minute; A
- (b) the inner diameter of the current-carrying windings being more than 6 cm; and A
- (c) being rated for magnetic field strengths of more than 8 tesla (80 kilogauss) or for overall current density in the windings of more than 10,000 A/cm² A
- In this entry "overall current density" means the total number of ampere-turns in the coil (that is, the sum of the number of turns multiplied by the maximum current carried by each turn) divided by the total cross-section of the coil (including the superconducting filaments, the metallic matrix in which the superconducting filaments are embedded, the encapsulating material and any cooling channels).
- IL1574 Electronic devices, circuits and systems specially designed for or capable of operation at temperatures below 103 K (–170°C) and incorporating components manufactured from superconducting materials which perform functions such as electromagnetic sensing and amplification, current switching, frequency selection or electromagnetic energy storage at resonant frequencies above 1 MHz, including but not limited to the following:—
- (1) Josephson-effect devices A
- (2) Dayem bridges A
- (3) Weak-link devices A
- (4) Proximity-effect devices A
- (5) Phase slip devices A
- (6) SNS (super-normal-super) bridges A
- (7) SIS (superconductor-insulator-superconductor) devices. A
- (8) Quasiparticle devices and detectors A

IL1584	<p>Cathode-ray oscilloscopes and specially designed components therefor including associated plug-in units, external amplifiers, pre-amplifiers and sampling devices, having any of the following characteristics:—</p> <p>(1) An amplifier or system bandwidth greater than 250 MHz A</p> <p>(2) A horizontal sweep faster than 1 nanosecond per cm with an accuracy (linearity) better than 2%..... A</p> <p>(3) Incorporating or designed for use with cathode-ray tubes specified in the entry in Group 3F relating to electronic cathode-ray tubes..... A</p> <p>(4) Ruggedised to meet a military specification A</p> <p>(5) Rated for operation over an ambient temperature range of from below -25°C to above $+55^{\circ}\text{C}$ A</p> <p>(6) Using sampling techniques for the analysis of recurring phenomena which increase the effective bandwidth of an oscilloscope or time domain reflectometer to a frequency greater than 4 GHz A</p> <p>(7) Digital oscilloscopes with sequential sampling of the input signal at an interval of less than 50 nanoseconds..... A</p> <p>In this entry “bandwidth” means the band of frequencies over which the deflection on the cathode-ray tube does not fall below 70.7% of that at the maximum point measured with a constant input voltage to the amplifier.</p>
IL1585	<p>Photographic apparatus and film, the following:—</p> <p>(1) High speed cinema recording cameras and equipment, the following:</p> <p style="padding-left: 20px;">(a) cameras in which the film is continuously advanced throughout the recording period, and which are capable of recording at framing rates exceeding 13,150 frames per second, using any camera and film combination from the standard 8 mm to the 90 mm size (inclusive) A</p> <p style="padding-left: 20px;">(b) special optical or electronic devices which supplement, replace, or are interchangeable with, standard camera components for the purpose of increasing the number of frames per second A</p> <p>(2) High speed cameras in which the film does not move, and which are capable of recording at rates exceeding 1,000,000 frames per second for the full framing height of standard 35 mm wide photographic film, or proportionately higher rates for lesser frame heights, or proportionately lower rates for greater frame heights..... A</p>

IL1585 (cont.)	<p>(3) Cameras incorporating electron tubes specified in sub-head (3)(a) of the entry in Group 3F relating to electronic cathode-ray tubes, vacuum tubes or valves A</p> <p>(4) Streak cameras having writing speeds of 10 mm per microsecond and above A</p> <p>(5) Camera shutters with speeds of, or greater than, 50 nanoseconds per operation and specially designed parts, components and accessories therefor A</p> <p>(6) Film, the following:</p> <p style="padding-left: 20px;">(a) high speed film having—</p> <p style="padding-left: 40px;">(i) an intensity dynamic ratio of 1,000,000 to 1 or more; or A</p> <p style="padding-left: 40px;">(ii) a speed of ASA 10,000 (or its equivalent) or better A</p> <p style="padding-left: 20px;">(b) colour film having a spectral sensitivity extending beyond 7,200 Å or below 2,000 Å A</p> <p>(7) High speed plates having an intensity dynamic range of 1,000,000 to 1 or more A</p>
IL1586	<p>Acoustic wave devices and specially designed components therefor, the following:—</p> <p>(1) Surface acoustic wave and surface skimming (shallow bulk) acoustic wave devices which permit the direct processing of signals, including but not limited to convolvers, correlators (fixed, programmable and memory), oscillators, bandpass filters, delay lines (fixed and tapped) and non-linear devices having any of the following characteristics: A</p> <p style="padding-left: 20px;">(a) a carrier frequency of greater than 400 MHz;</p> <p style="padding-left: 20px;">(b) a carrier frequency of 400 MHz or less (except such devices specially designed for domestic and entertainment purposes) having any of the following characteristics—</p> <p style="padding-left: 40px;">(i) a side-lobe rejection of greater than 45 dB;</p> <p style="padding-left: 40px;">(ii) a product of the maximum delay time in microseconds and the bandwidth in MHz greater than 100;</p> <p style="padding-left: 40px;">(iii) a dispersive delay of greater than 10 microseconds; or</p> <p style="padding-left: 40px;">(iv) an insertion loss of less than 10 dB.</p> <p>(2) Bulk (volume) acoustic wave devices which permit the direct processing of signals at frequencies greater than 1 GHz, including but not limited to fixed delay lines, non-linear and pulse compression devices A</p> <p>(3) Acousto-optic signal-processing devices employing an</p>

IL1586 (cont.)	interaction between acoustic waves (bulk wave or surface wave) and light waves which permit the direct processing of signals, including but not limited to spectral analysis, correlation and convolution.....	A
	(4) Specially designed components for the equipment specified in heads (1) to (3) above (inclusive).....	A
	In this entry "acoustic wave devices" means signal processing devices employing elastic waves in materials including but not limited to lithium niobate, lithium tantalate, bismuth germanium oxide, silicon, quartz, zinc oxide, aluminium oxide (sapphire), gallium arsenide and alpha-aluminium phosphate (berlinite).	
IL1587	Quartz crystals having piezo-electric qualities, in worked, semi-finished or mounted form including assemblies, the following:—	
	(1) Filter elements having either of the following characteristics:	
	(a) types designed for operation over a temperature range wider than 125°C; or	A
	(b) types making use of the trapped energy phenomenon and having more than three series or parallel resonances on a single quartz element.....	A
	except those designed for operation as intermediate frequency filters operating from 10.5 to 11 MHz or from 21 to 22 MHz with 3dB bandwidths not exceeding 40 KHz, or for operation as single sideband filters operating at from 1 to 10 MHz with 3dB bandwidths not exceeding 4 KHz.	
	(2) Oscillator elements specially designed for temperature-controlled crystal ovens or for temperature-compensated crystal oscillators described in head (3) of this entry and having an average ageing rate of $\pm 10^{-9}$ per day or better	A
	(3) Temperature-compensated crystal oscillators having any of the following characteristics:	
	(a) a temperature stability of better than $\pm 0.00015\%$ over their operating temperature range;.....	A
	(b) an operating temperature range wider than 120°C.....	A
	(c) capable of reaching to within 10^{-7} of normal operating frequency or better in 3 minutes or less from switch-on at an ambient temperature of 25°C;.....	A
	(d) rated to have an acceleration sensitivity of less than 10^{-9} of the operating frequency per g (where $g=981$ cm/sec ²) over a vibration test frequency range from 10 to 2,000 Hz sine wave and with a maximum level of acceleration not exceeding 20 g;	A
	(e) designed to withstand a shock greater than 10,000 g (where $g=981$ cm/sec ²) over a period of 1 millisecond; or.....	A
	(f) radiation hardened to better than 10^{-10} of the operating frequency per gray (1 rad = 10^{-2} gray).....	A
	In this entry "ageing rate" shall be measured over a longer	

	period at a constant temperature (within $\pm 2^{\circ}\text{C}$) of $+60^{\circ}\text{C}$ or more.	
IL1588	Materials composed of crystals having spinel, hexagonal, orthorhombic or garnet crystal structures, and thin film devices, the following:—	
	(1) Monocrystals of ferrites and garnets (synthetic only).....	A
	(2) Single aperture forms possessing either of the following characteristics:	
	(a) switching speed of 0.3 microsecond or faster at the minimum field strength required for switching at 40°C ; or	A
	(b) a maximum dimension less than 0.45 mm.....	A
	(3) Multi-aperture forms with fewer than 10 apertures possessing either of the following characteristics:	
	(a) switching speed of 1 microsecond or faster at the minimum field strength required for switching at 40°C ; or	A
	(b) a maximum dimension less than 2.54 mm.....	A
	(4) Multi-aperture forms having 10 or more apertures	A
	(5) Memory storage or switching devices, the following:	
	(a) thin film (including plated wire and plated rods) devices	A
	(b) single crystal or amorphous film magnetic bubble devices	A
	(c) moving domain devices.....	A
	(d) crosstie devices	A
	(6) Magnetic ferrite materials having square loop characteristics, suitable for operating above 1 GHz and having all of the following characteristics:.....	A
	(a) a saturation magnetisation of more than—	
	(i) 0.2 tesla (2,000 gauss) for lithium-based ferrites; or	
	(ii) 0.3 tesla (3,000 gauss) for other ferrites	
	(b) a dielectric loss tangent of less than 0.001 measured at a frequency of 1 GHz or higher	
	(c) a ratio of the remanent magnetisation (B_r) to the saturation magnetisation (4 Ms) not less than 0.7	
	(7) Rod forms possessing either of the following characteristics:	
	(a) a switching speed of 0.3 microsecond or faster at the minimum field strength required for switching at 40°C ; or	A

IL1588 (cont.)	(b) a minimum dimension less than 0.254 mm	A
	(8) Assemblies of, and devices incorporating, any of the items specified in heads (1) to (7) above (inclusive).....	A
IL1595	Gravity meters (gravimeters), gravity gradiometers and specially designed components therefor, except gravity meters for land use having static accuracies of 100 microgal or less and land gravity meters of the Worden type	A

GROUP 3H

Note. Goods specified in the heads of this Group may also be specified in Group 2 of this Part of this Schedule.

Metals, Minerals and their Manufactures

In this Group, the following definitions apply:—

Crude forms:

Anodes, balls, bars (including notched bars and wire bars), billets, blocks, blooms, briquettes, cakes, cathodes, crystals, cubes, dice, grains, granules, ingots, lumps, pellets, pigs, powder, rondelles, shot, slabs, slugs, sponge, sticks;

Semi-fabricated forms (whether or not coated, plated, drilled or punched):

(1) Wrought or worked material fabricated by rolling, drawing, extruding, forging, impact extruding, pressing, grain-ing, atomising and grinding, i.e. angles, channels, circles, discs, dust, flakes, foil and leaf, forgings, plates, powder, pressings and stampings, ribbons, rings, rods (including bare welding rods, wire rods and rolled wire), sections, shapes, sheets, strip, pipe and tube (including tube rounds, squares and hollows), drawn or extruded wire;

(2) Cast material produced by casting in sand, die, metal, plaster or other types of moulds, including high pressure castings, sintered forms and forms made by powder metallurgy.

IL1603	Seamless tubes and pipes having an outside diameter of 60 mm or more, and seamless fittings therefor, made of nickel-base superalloys containing the following major alloying elements, by weight: 19% or more of chromium, 7.4% or more of molybdenum, not more than 6% of iron, and 3% or more of niobium (columbium) or of niobium and tantalum combined...	A
IL1631	Magnetic materials, the following:— (1) Magnetic materials in all forms having any of the following characteristics: (a) initial permeability of 0.15 henry/m units (120,000 gauss/oersteds) or more calculated at induction 0 and magnetic field strength 0 or the equivalent.....	A

IL1631 (cont.)	(b) remanence 98.5% or over of maximum flux for materials having magnetic permeability.....	A
	or	
	(c) a composition capable of an energy product—	
	(i) 95,500 joules/m ³ (12 × 10 ⁶ gauss-oersteds) or more	A
	(ii) 55,700 joules/m ³ (7 × 10 ⁶ gauss-oersteds) or more, and having a coercive force of 159,155 amperes/m (2000 oersteds) or greater.....	A
	(2) Grain oriented iron alloy sheets or strips having a thickness of 0.1 mm or less	A
	(3) Magnetostrictive alloys having either of the following characteristics:	
	(a) saturation magnetostriction greater than 5 × 10 ⁻⁴ ; or.....	A
	(b) magnetomechanical coupling factor (K) greater than 0.8.....	A
IL1635	Steels in crude or semi-fabricated forms containing a higher percentage of iron than of any element and not being products obtained by casting with a carbon content of more than 1.5%, the following:—	
	(1) Steels containing 10% or more of molybdenum.....	A
	(2) Steels containing 5% or more of molybdenum together with 14% or more of chromium	A
	(3) Steel alloys containing a combination of the following major alloy elements in the amounts specified, by weight: 4.5 to 5.95% of nickel, 0.3 to 1.0% of chromium, 0.2 to 0.75% of molybdenum, 0.04 to 0.15% of vanadium and less than 0.19% of carbon.....	A
IL1648	Cobalt-based alloys containing a higher percentage of cobalt than of any other element and one or more of the following constituents in the proportions stated:—	
	(1) 5% or more of tantalum; or.....	A
	(2) 1% or more of thorium, aluminium, yttrium, zirconium or cerium oxides; or	A
	(3) 0.05% or more of rare earth metals.....	A
	in crude or semi-fabricated forms.	
IL1649	Niobium (columbium) based alloys containing 60% or more but not more than 99.3% of niobium, or having a combined content of 60% or more but not more than 99.3% of niobium-tantalum, in crude, semi-fabricated or scrap forms.....	A

IL1658	Molybdenum alloys containing not less than 97.5% or more than 99.9% of molybdenum, in crude or semi-fabricated forms, except wire.....	A
IL1661	Nickel alloys containing a higher percentage of nickel than of any other element and containing:— (1) 11% or more of aluminium and titanium combined; or (2) 1% or more of oxides of thorium, aluminium, yttrium, zirconium, cerium, or lanthanum; or..... (3) 0.05% or more of scandium, yttrium, didymium, cerium, lanthanum, neodymium or praseodymium.....	A A A
	in crude or semi-fabricated forms.	
IL1670	Tantalum, the following:— (1) Tantalum powder containing less than 200 parts per million of total metallic impurities	A
	(2) Sintered anodes fabricated from tantalum powder containing less than 200 parts per million of total metallic impurities	A
	(3) Tantalum based alloys containing 60% or more of tantalum (except ferro-tantalum or ferro-tantalum-niobium), in crude or semi-fabricated forms or scrap.....	A
IL1671	Titanium based alloys in crude or semi-fabricated form or scrap, having nominal compositions of 6% aluminium, 2% tin, 4% zirconium, 6% molybdenum and the balance titanium In this entry the alloying compositions are nominal and may be subject to slight variations.	A
IL1672	Aluminides of titanium containing 12% or more of aluminium by weight, and aluminides of nickel, cobalt and iron containing 10% or more of aluminium by weight, in crude or semi-fabricated forms, and scrap thereof	A
IL1674	Vanadium, including scrap, of a purity of 99.7% or higher and alloys containing vanadium, including scrap, of such purity as an alloying agent	A
IL1675	Superconductive materials of all types and processed conductors containing at least one superconducting constituent, designed for operation at temperatures below 103 K (– 170°C). except processed conductors possessing all of the following characteristics:— (1) The superconducting constituent, when evaluated in sample length of less than 1 metre, does not remain in the superconducting state when exposed to an applied magnetic field in excess of 12 tesla (120 kilogauss) at a temperature of 4.2 K (– 268°C);	A

IL1675 (cont.)	(2) The superconducting constituent or filament has a cross-section area greater than $3.14 \times 10^{-4} \text{ mm}^2$ or, in the case of circular filaments, a diameter greater than 20 micrometres;	
	(3) The superconducting filaments are included in a copper or copper-based matrix; and	
	(4) The conductor is either non-coated or insulated with varnish, glass fibre, polyamide or polyimide.	
—	Aluminium alloys capable of ultimate tensile strength of $0.460 \times 10^9 \text{ N/m}^2$ (67,000 pounds per square inch) or greater, in crude; semi-fabricated or fabricated form.....	A
—	Maraging steel alloy capable of ultimate tensile strength of $2.050 \times 10^9 \text{ N/m}^2$ (300,000 pounds per square inch) or greater, whether or not finally heat-treated, in crude, semi-fabricated or fabricated form	A

GROUP 3I

Chemicals, Metalloids and Petroleum Products

IL1702	Hydraulic fluids containing as the principal ingredients petroleum (mineral) oils, synthetic hydrocarbon oils, non-fluorinated silicones or fluorocarbons and having either:—	
	(1) A flash point of more than 204°C; or	A
	(2) All of the following characteristics:.....	A
	(a) a pour point of -34°C or lower;	
	(b) a viscosity index of 75 or greater; and	
	(c) thermally stable at +343°C.	
IL1715	Boron, boron compounds, mixtures and alloys, except pharmaceutical preparations packaged for retail sale, the following:—	
	(1) Boron element in any form	A
	(2) Boron compounds and mixtures in which the boron -10 isotope comprises more than 20% of the total boron content.....	A
	(3) Boron compounds, mixtures and composites containing 5% or more of boron, the following:	
	(a) boron carbide (except powders) with a boron content of 70% or more and composites thereof	A
	(b) boron nitride (hexagonal close-packed structure, white form) and composites thereof, and other boron-nitrogen compounds	A
	(c) boron hydrides, except sodium boron hydride, potas-	

IL1715 (cont.)	<p>sium boron hydride, monoborane, diborane and triborane..... A</p> <p>(d) organoboron compounds (i.e. those containing boron atoms directly linked to carbon atoms)..... A</p> <p>(e) borides with purities above 98.5% and having melting points of 2,000°C or higher and composites thereof... A</p>
—	<p>Chemicals, the following:—</p> <p>(1) Chloroethanol..... I</p> <p>(2) Dimethylamine..... I</p> <p>(3) Dimethyl methylphosphonate..... A</p> <p>(4) Dimethylphosphite A</p> <p>(5) Methyl phosphonyl dichloride..... A</p> <p>(6) Methyl phosphonyl difluoride..... A</p> <p>(7) Phosphorous oxychloride..... A</p> <p>(8) Potassium fluoride I</p> <p>(9) Thiodiglycol..... A</p>
IL1746	<p>Polymeric materials and manufactures thereof, the following:—</p> <p>(1) Polyimides (including maleimides)..... A</p> <p>except the following forms: fully cured polyimide or polyimide-based film, sheet, tape or ribbon having a maximum thickness of 0.25 mm, whether or not coated or laminated with heat-sensitive or pressure-sensitive resinous substance of an adhesive nature, which contain no fibrous reinforcing materials and which have not been coated or laminated with carbon, graphite, metals or magnetic substances.</p> <p>(2) Polybenzimidazoles..... A</p> <p>(3) Aromatic polyamides, except staples, fibres, filaments, yarns and threads, having a fibre modulus of 0.161 newtons per tex (250 grammes-force per denier) or less and a tenacity of 0.00709 newtons per tex (11 grammes-force per denier) or less, and textile or mat products thereof A</p> <p>(4) Polybenzothiazoles..... A</p> <p>(5) Polyoxadiazoles..... A</p> <p>(6) Polyphosphonitriles A</p> <p>In this entry—</p> <p>“tenacity” is the maximum specific tensile strength when tested to the point of rupture;</p>

IL1746 (cont.)	<p>“fibre modulus” is the ratio of change in stress to change in strain between two points on the stress-strain curve, viz the point of zero stress and the point of breaking stress;</p> <p>“denier” means the number of grammes in 9,000 metres of material, usually fibre, filament, staple, thread, etc; and</p> <p>“tex” means the number of grammes in 1,000 metres of material, usually yarn.</p>	
IL1749	<p>Polycarbonate sheet of a thickness between 1.5 mm and 25.4 mm (inclusive) having no major defects and having all of the following optical characteristics:—.....</p> <p>(1) Less than 2% haze as determined by method ASTM D1003:</p> <p>(2) An angular deviation, as determined by method ASTM D637:</p> <p>(a) of not more than 12 minutes at any location more than 25.4 mm from the edge of the sheet for sheet thickness of between 1.5 mm and 9.5 mm (inclusive); or</p> <p>(b) of not more than 20 minutes at any location more than 25.4 mm from the edge of the sheet for sheet thickness of more than 9.5 mm and not more than 25.4 mm;</p> <p>(3) A total number of minor optical defects (excluding those within 25.4 mm of the sheet edge):</p> <p>(a) not exceeding 1 per 0.368 m² for sheet of a thickness of 12.7 mm or less;</p> <p>(b) not exceeding 2 per 0.092 m² for sheet of a thickness of more than 12.7 mm.</p> <p>In this entry “major defects” means variations in the material which cause angular deviations either side of the undeviated position exceeding those specified in head (2) and “minor defects” include any embedded particles, bubbles, scratches or internal inhomogeneity which reduce visibility through the plastic and those localised imperfections which cause a variation in angular deviation of more than 5 minutes within a distance of not more than 508 mm on the screen when tested by method ASTM D637.</p>	A
IL1754	<p>Fluorocarbon compounds and manufactures, the following:—</p> <p>(1) Monomeric and polymeric materials, the following:</p> <p>(a) Polychlorotrifluoroethylene, oily and waxy modifications only</p> <p>(b) Copolymers and terpolymers composed of any combination of the monomers tetrafluoroethylene, chlorotrifluoroethylene, vinylidene fluoride, hexafluoropropylene and bromotrifluoroethylene, except copolymers of tetrafluoroethylene and hexafluoropropylene..</p>	A A

IL1754 (cont.)	(c) Polybromotrifluoroethylene.....	A
	(d) Dibromotetrafluoroethane, except dibromotetrafluoroethane having a purity of 99.8% or less and containing at least 25 particles each 200 microns or larger per 100 ml	A
	(e) Perfluoroalkylamines.....	A
	(2) Greases, lubricants and dielectric, damping and flotation fluids made wholly of any of the materials listed in head (1) above.....	A
IL1755	Silicone fluids and greases, the following:—	
	(1) Fluorinated silicone fluids	A
	(2) Silicone and fluorinated silicone lubricating greases capable of operating at temperatures of 180°C or higher and having a drop point of 220°C or higher	A
IL1757	Compounds and Materials, the following:—	
	(1) Monocrystalline silicon, except metallurgical grade monocrystalline silicon having a purity not better than 99.97% ...	A
	(2) Gallium of a purity of 99.9999% or greater and gallium III/V compounds of any purity level,	A
	except	
	(a) gallium phosphide; or	
	(b) other gallium III/V compounds having a dislocation density (etch pit density—EPD) greater than 500,000 per cm ² ;	
	(3) Indium of a purity greater than 99.9995% and III–V indium compounds containing more than 1% indium.....	A
	(4) Hetero-epitaxial materials consisting of a monocrystalline insulating substrate epitaxially layered with silicon, compounds or gallium or compounds of indium.....	A
	(5) Elemental Cd and Te of purity levels of 99.999% or greater, and CdTe compounds of a purity level of 99.99% or greater or single crystals of CdTe of any purity level.....	A
	(6) Polycrystalline silicon, except polycrystalline silicon having a purity of 99.99% or less and containing at least 0.5 part in 10 ⁶ each of iron, carbon, boron and phosphorus, plus other impurities.....	A
	(7) Compounds used in the synthesis of the materials specified in head (6) above, having a purity level of 99.5% or better, including but not limited to SiH ₄ , SiClH ₃ , SiCl ₄ , SiCl ₃ H, and SiCl ₂ H ₂	A
	The purity level of a mixture containing a silicon-bearing compound shall be taken to be the same as that of the silicon-bearing compound.	

IL1757 (cont.)	<p>(8) Single crystal sapphire substrates A</p> <p>(9) B₂O₃ with a purity of 99.9% or greater, containing 1,000 parts per million of H₂O or less, in powder or cast form A</p> <p>(10) Monocrystalline germanium with a resistivity greater than 100 ohm. cm A</p> <p>(11) Resist materials with any of the following characteristics:</p> <p>(a) sensitive to X-rays or deep ultraviolet light (wavelength less than 436 nanometres) with a sensitivity of 500 millijoules/cm² or better A</p> <p>(b) sensitive to electrons or ion beams with a sensitivity of 100 microcoulombs/cm² or better A</p> <p>or</p> <p>(c) specified or optimised for dry development A</p> <p>(12) Single-crystal forms of bismuth germanium oxide having piezo-electric properties and single-crystal forms of lithium niobate, of lithium tantalate and of aluminium phosphate A</p>	
IL1759	<p>Syntactic foam for underwater use, the following:—</p> <p>(1) Syntactic foam formulated for applications at depths greater than 1,000 metres A</p> <p>(2) Syntactic foam having a density of 0.561 g/cm³ (35 lbs/cu.ft.) or less A</p> <p>In this entry—</p> <p>“syntactic foam” consists of hollow plastic or glass spheres less than 100 micrometres in diameter uniformly embedded in a resin matrix.</p>	
IL1760	<p>Compounds of tantalum and niobium (columbium), the following:—</p> <p>(1) Tantalates and niobates having a purity of 98% or more.. A</p> <p>(2) Other compounds containing 20% or more of tantalum in which the niobium content with respect of tantalum is less than 1 part per thousand A</p> <p>This entry does not cover single-crystal lithium tantalate for which see the entry in this Group relating to compounds and materials.</p>	
IL1763	<p>Composite structures, laminates and manufactures thereof made either with an organic matrix or a metal matrix utilising materials specified in heads (1) and (2) of the entry in this Group relating to fibrous and filamentary materials A</p>	

IL1763	<p>Fibrous and filamentary materials suitable for use in composite structures or laminates, the following:—</p> <p>(1) having both of the following characteristics: A</p> <p style="margin-left: 20px;">(a) specific modulus greater than $3.18 \times 10^6 \text{m}$ (1.25×10^8 in);</p> <p style="margin-left: 20px;">(b) specific tensile strength greater than $7.62 \times 10^4 \text{m}$ (3×10^6 in); or</p> <p>(2) having both of the following characteristics: A</p> <p style="margin-left: 20px;">(a) specific modulus greater than $2.54 \times 10^6 \text{m}$ (1×10^8 in);</p> <p style="margin-left: 20px;">(b) melting or sublimation point higher than 1,922 K (1,649°C) (3,000°F) in an inert environment;</p> <p>except carbon fibres having a specific modulus less than $5.08 \times 10^6 \text{m}$ (2×10^8 in) and a specific tensile strength less than $2.54 \times 10^4 \text{m}$ (1×10^8 in);</p> <p>(3) Resin-impregnated fibres (prepregs) and metal-coated fibres (preforms) made with materials specified in heads (1) or (2) above A</p> <p>In this entry—</p> <p>“specific modulus” means Young’s modulus in N/m^2 (lbs force/sq.in) divided by specific weight in N/m^3 (lbs force/cu.in), measured at a temperature of $(296 \pm 2) \text{K}$ ($(23 \pm 2)^\circ\text{C}$) ($(73.4 \pm 3.6)^\circ\text{F}$) and a relative humidity of $(50 \pm 5)\%$; and</p> <p>“specific tensile strength” means ultimate tensile strength in N/m^2 (lbs force/sq.in) divided by specific weight in N/m^3 (lbs force/cu.in) measured at a temperature of $(296 \pm 2) \text{K}$ ($(23 \pm 2)^\circ\text{C}$) ($(73.4 \pm 3.6)^\circ\text{F}$) and a relative humidity of $(50 \pm 5)\%$.</p>
IL1767	<p>Preforms of glass, or of any other material, specially designed for the fabrication of optical fibres specified in head (2) of the entry in Group 3F relating to cable and wire A</p> <p>In this entry “preforms” are defined as bars, ingots or rods, of glass, plastic or other materials, which have been specially processed for use in the fabrication of optical fibres. The characteristics of the preform determine the basic parameters of the resultant drawn optical fibres.</p>
IL1781	<p>Lubricating oils and greases, synthetic, which are or contain as their principal ingredient, the following:—</p> <p>(1) monomeric and polymeric forms of perfluorotriazines, perfluoroaromatic ethers and esters, and perfluoroaliphatic ethers and esters A</p> <p>(2) polyphenyl ethers and thio ethers containing more than three groups of any of the following: A</p> <p style="margin-left: 20px;">(a) phenyl;</p>

IL1781 (cont.)	(b) alkyl phenyl; (c) phenyl and alkyl phenyl;
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GROUP 3J

Synthetic Rubbers

IL1801 Synthetic rubbers, the following:—

- | | |
|---|---|
| (1) Fluorinated silicone rubbers and other fluorinated elastomeric material and such organic intermediates for their production as contain 10% or more of combined fluorine | A |
| (2) Polymeric products of butadiene, the following: | |
| (a) carboxyl terminated polybutadiene, hydroxyl terminated polybutadiene, thiol terminated polybutadiene and cyclised 1, 2-polybutadiene..... | A |
| (b) mouldable copolymers of butadiene and acrylic acid... | A |
| (c) mouldable terpolymers of butadiene, acrylonitrile and acrylic acid or any of the homologues of acrylic acid.... | A |
| (3) Carboxyl terminated polyisoprene | A |

GROUP 4

GOODS, TECHNOLOGIES AND PROCESSES IN RESPECT OF WHICH THE EXPORT OF TECHNOLOGICAL DOCUMENTS, OTHER THAN DOCUMENTS GENERALLY AVAILABLE TO THE PUBLIC, IS PROHIBITED TO ANY DESTINATION IN ANY COUNTRY SPECIFIED IN ARTICLE 2(iv)

—	The process of inert gas and vacuum atomising for achieving sphericity and uniform size of particles in metal powders.
IL1001	<p>Technology for metal-working manufacturing processes and specially designed software, the following:—</p> <p>(1) Technology for the design of tools, dies and fixtures specially designed for the following processes:</p> <p style="padding-left: 2em;">(a) hot die forging;</p> <p style="padding-left: 2em;">(b) superplastic forming;</p> <p style="padding-left: 2em;">(c) diffusion bonding;</p> <p style="padding-left: 2em;">(d) metal powder compaction using—</p> <p style="padding-left: 4em;">(i) vacuum hot pressing;</p> <p style="padding-left: 4em;">(ii) high pressure extrusion;</p> <p style="padding-left: 4em;">(iii) isostatic pressing;</p> <p style="padding-left: 2em;">(e) direct hydraulic pressing.</p> <p>(2) Technical data consisting of the following process parameters:</p>

IL1001
(cont.)

- (a) for controlling hot die forging—
 - (i) temperature;
 - (ii) strain rate;
- (b) for controlling superplastic forming of aluminium alloys, titanium alloys and superalloys—
 - (i) surface preparation;
 - (ii) strain rate;
 - (iii) temperature;
 - (iv) pressure;
- (c) for controlling diffusion bonding of superalloys and titanium alloys—
 - (i) surface preparation;
 - (ii) temperature;
 - (iii) pressure;
- (d) for controlling metal powder compaction using vacuum hot pressing, high pressure extrusion or isostatic pressing—
 - (i) temperature;
 - (ii) pressure;
 - (iii) cycle time;
- (e) for controlling direct-acting hydraulic pressing of aluminium alloys for titanium alloys—
 - (i) pressure;
 - (ii) cycle time;
- (f) for controlling hot isostatic densification of titanium alloys, aluminium alloys and superalloys—
 - (i) temperature;
 - (ii) pressure;
 - (iii) cycle time.

IL1080

Technology, other than installation, operation and maintenance technology, for the use of the following equipment used in the manufacture of gas turbine blades or vanes:—

- (1) Blade or vane belt grinding machines;
- (2) Blade or vane edge radiusing machines;
- (3) Blade or vane aerofoil milling or grinding machines;
- (4) Blade or vane blank preforming machines;
- (5) Blade or vane rolling machines;
- (6) Blade or vane aerofoil shaping machines, except metal removing types;

- IL1080
(*cont.*)
- (7) Blade or vane root grinding machines; and
 - (8) Blade or vane aerofoil scribing equipment.
- IL1372
- Technology common to industrial gas turbine engines and gas turbine aircraft engines as specified in head (3) of the entry in this Group relating to technology for aircraft and helicopters, and technology common to industrial gas turbine engines and marine gas turbine engines.
- IL1425
- Technology relating to floating docks, the following:—
- (1) That portion of the design of a floating dock specially designed for use at remote locations relating to the incorporation of the following facilities:
 - (a) welding and pipe fitting repair shops;
 - (b) electrical and electronic repair workshops; and
 - (c) mechanical repair or metal working machine shops; and
 - (2) The design, production and use of onboard floating dock facilities which permit the operation, maintenance and repair of nuclear reactors.
- IL1460
- Technology relating to aircraft and helicopters, the following:—
- (1) Technology for aircraft and helicopter airframes, for aircraft propellers, and for aircraft and helicopter airframe and aircraft propeller components, and specially designed software therefor, the following:
 - (a) design technology using computer-aided aerodynamic analyses for integration of the fuselage, propulsion system and lifting and control surfaces to optimise aerodynamic performance throughout the flight regime of an aircraft;
 - (b) technology for the design of active flight control systems, the following—
 - (i) technology for configuration design for interconnecting multiple microelectronic processing elements (on-board computers) to achieve high-speed data transfer and high-speed data integration for control law implementation;
 - (ii) technology for control law compensation for sensor location and dynamic airframe loads (compensation for sonor vibration environment and for variation of sensor location from centre of gravity);
 - (iii) technology for electronic management of systems redundancy and data redundancy for fault detection, fault tolerance and fault isolation;

IL1460
(cont.)

- (iv) technology for design of flight controls which permit in-flight reconfiguration of force and moment controls;
- (c) design technology for integration of flight control, navigation and propulsion control data into a flight management system for flight path optimisation;
- (d) design technology for protection of avionic and electrical sub-systems against electromagnetic pulse (EMP) and electromagnetic interference (EMI) hazards from sources external to the aircraft, the following—
 - (i) technology for design of shielding systems;
 - (ii) technology for the configuration design of hardened electrical circuits and sub-systems; and
 - (iii) determination of hardening criteria for the circuits and sub-systems specified in sub-head (d)(ii) above;
- (e) technology for the design, production and reconstruction of adhesively bonded airframe structural members designed to withstand operational temperatures in excess of 120°C;
- (f) technology for the design and production of propeller blades constructed wholly or partly of composite materials, and specially designed hubs therefor;
- (g) technology for the design and production of digital electronic synchrophasers specially designed for propellers, technology for the design of digital electronic controls for propellers and technology for the production of digital electronic controls for the propellers specified in sub-head (f) above; and
- (h) technology for the design and production of active laminar flow control lifting surfaces.

(2) Technology for helicopter power transfer systems, except data resulting from helicopter power transfer system performance and installation design studies, and fabrication technology or overhaul and refurbishment technology for specific helicopter power transfer systems in civil use in bona fide civil helicopters for more than 8 years.

(3) Technology for gas turbine engines and auxiliary power units (APUs) for use in aircraft or helicopters, except data resulting from aircraft performance and installation design studies, and fabrication technology or overhaul and refurbishing technology for specific gas turbine aircraft engines or gas turbine powered aircraft APUs in civil use in bona fide civil aircraft or civil helicopters for more than 12 years.

IL1519

Technology, other than for installation, operation or maintenance, relating to communication transmission equipment employing digital transmission techniques and designed for operation at a total bit rate at the highest multiplex point exceeding 2.1 Megabits per second.

- IL1560 Technology for the design and production of tantalum capacitors rated for operation at ambient temperatures exceeding 125°C, except sintered electrolytic types having a casing made of epoxy resin or which are sealed or coated with epoxy resin.
- IL1565 Technology relating to electronic computers, the following:—
- (1) Technology applicable to the:
 - (a) development, production or installation, operation and maintenance of electronic computers of any kind, except
 - (i) technology which is unique to related equipment specified in sub-heads (d)(i), (d)(ii), (d)(iii), (d)(v), (d)(vi), (d)(xii), (d)(xiv), (d)(xvi) or (d)(xvii) of head (7) of the entry in Group 3G relating to computers and does not relate to equipment specified elsewhere in this Schedule; and
 - (b) development production or installation, operation and maintenance of equipment or systems specified in head (4) of the entry in Group 3G relating to computers.
 - (2) Technology for the integration of:
 - (a) electronic computers or related equipment specified, other than as exceptions, in the entry in Group 3G relating to computers into other equipment or systems whether or not such other equipment or systems are so specified; or
 - (b) electronic equipment or related equipment not specified, other than as exceptions, in the entry in Group 3G relating to computers into other equipment or systems which are so specified.
- IL1566 Technology applicable to the development, production or installation, operation and maintenance of software, whether or not such software is specified in this Schedule, except the minimum technical information necessary for the use of software not so specified other than as an exception.
- IL1567 Technology applicable to the development, production or installation, operation and maintenance of stored-programme-controlled communication switching equipment or systems, whether or not the equipment or systems are specified in the entry in Group 3G relating thereto, except the minimum technical information necessary for the use of stored-programme-controlled communication switching equipment or systems not so specified, other than as exceptions.
- IL1602 Pyrolytic deposition technology and specially designed components therefor, the following:—

IL1602 (cont.)	<p>(1) Technology for producing pyrolytically derived materials formed on a mould, mandrel or other substrate from precursor gases which decompose in the 1,573 K (1,300°C) to 3,173 K (2,900°C) temperature range at pressures of 133.3 Pa to 19.995 kPa, including the composition of precursor gases, flow rates and process control schedules and parameters;</p> <p>(2) Specially designed nozzles for the processes specified in head (1) above.</p>
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Article 10

SCHEDULE 2

The Export of Goods (Control) Order 1981 S.I. 1981/1641.

The Export of Goods (Control) (Amendment) Order 1982 S.I. 1982/1446.

The Export of Goods (Control) (Amendment No. 2) Order 1982 S.I. 1982/1556.

The Export of Goods (Control) (Amendment No. 3) Order 1983 S.I. 1983/1006.

The Export of Goods (Control) (Amendment No. 4) Order 1983 S.I. 1983/1266.

The Export of Goods (Control) (Amendment No. 5) Order 1984 S.I. 1984/90.

The Export of Goods (Control) (Amendment No. 6) Order 1984 S.I. 1984/553.

The Export of Goods (Control) (Amendment No. 7) Order 1984 S.I. 1984/694.

The Export of Goods (Control) (Amendment No. 8) Order 1984 S.I. 1984/819.

The Export of Goods (Control) (Amendment No. 9) Order 1985 S.I. 1985/34.

The Export of Goods (Control) (Amendment No. 10) Order 1985 S.I. 1985/148.

EXPLANATORY NOTE

(This Note is not part of the Order.)

This Order revokes and replaces the Export of Goods (Control) Order 1981 and the subsequent amendments thereto. The changes (apart from minor and drafting changes) it effects are as follows:—

1. Export control is:

- (a) *reduced* on amplifiers, capacitors, indium, magnetic materials, polymeric materials, pulse modulators, pumps, semi-conductor diodes, steels (alloys) and titanium-based alloys;
- (b) *extended in scope* on acoustic wave devices, aircraft and helicopters, cable and wire, compasses and gyroscopic apparatus, communication, detection and tracking equipment, electric vacuum furnaces, equipment for manufacturing, inspecting or measuring aircraft and helicopters, airframe structures, aircraft engines and gas turbine blades or vanes, gas turbine engines, machinery for manufacturing and testing electronic equipment, machinery for generating optical quality surfaces, magnetometers, optical elements, photosensitive components, rolling mills, ships (and surface-effect vehicles) and wind tunnels;
- (c) *introduced* on certain aluminides, digitally-controlled equipment capable of automatic X-ray orientation and angle correction of quartz crystals, equipment for monitoring acoustic emissions of airborne or underwater vehicles, machinery for manufacturing hydrofoil vessel and surface-effect vehicle structures, polycarbonate sheet, production equipment for compasses, gyroscopes, accelerometers and inertial equipment, robots and robot equipment, certain seamless tubes and pipes, software (including specially-designed software for certain goods, processes or technologies), stored-programme-controlled communication switching equipment, super-conductive electromagnets and solenoids, super-conductive materials, tooling and fixtures for manufacturing fibre-optic connectors and couplers, vanadium and water-tunnel equipment; and on specific technologies, in respect of which the export of technological documents is controlled to certain destinations, relating to aircraft and helicopter airframes and aircraft propellers, aircraft and marine gas turbine engines, computers, equipment used in the manufacture of gas turbine blades or vanes, floating docks, metal-working manufacturing processes, pyrolytic deposition, software, stored-programme-controlled communications switching equipment and tantalum capacitors; and
- (d) *amended in scope* on anti-friction bearings, cathode-ray oscilloscopes, communication transmission equipment, computers, electronic cathode-ray tubes, vacuum tubes or valves, electronic components, electronic measuring, calibrating, counting and testing equipment, frequency synthesisers, gravity meters, lasers and laser systems, machinery for manufacturing or inspecting aircraft, airframe structures or aircraft fasteners and aircraft engines, machinery for manufacturing or testing electronic equipment, components or materials, machine tools and numerical control systems, materials composed of crystals, materials for use as absorbers of electromagnetic waves, navigation, direction finding, radar and airborne communication equipment, photographic material, presses, quartz

crystals, radio receivers, recording or reproducing equipment and spin-forming and flow-forming machines.

2. The descriptions of goods subject to export control have been amended in respect of apparatus for detecting or locating underwater or subterranean objects or features, arms and ammunition, electro-chemical, semi-conductor and radio-active devices, equipment for manufacturing cable and wire, explosives and propellants, hydraulic fluids, machinery for the extrusion of fluorocarbon materials, military aircraft and helicopters, naval equipment, photographic instruments and appliances and plants for the separation of isotopes of source materials and fissionable materials.

3. Civil aircraft and helicopters, and spacecraft and launch vehicles have been transferred from Group 1 to Group 3E, telemetering and telecontrol equipment from Group 1 to Group 3F, machinery for generating optical quality surfaces from Group 3A to Group 3D, precision linear and angular measuring equipment from Group 3A to Group 3F, environmental chambers from Group 3D to Group 1 and syntactic foam from Group 3E to Group 3I. Cryogenic equipment has been transferred from Group 3B partly to Group 1 and partly to Group 3F (electronic devices, circuits and systems) and to Group 3H (superconductive materials). Artificial graphite is no longer separately specified but it remains subject to control as an explosives-related substance in Group 1.

4. All goods specified in Part II of Schedule 1 are now subject to control to all destinations including those listed in the former Schedule 2, which is deleted. These goods are now for convenience specified by reference to the classification system used by the Department of Trade and Industry for export control purposes.

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