STATUTORY INSTRUMENTS

1961 No. 2242

EMERGENCY POWERS

The Strategic Goods (Control) Order, 1961

Made - - - -	*22nd November*, 1961
Laid before Parliament	*29th November*, 1961
Coming into Operation	*6th December*, 1961

The Board of Trade in pursuance of the powers conferred upon them by Regulation 55 of the Defence (General) Regulations, 1939, as continued in force by the Emergency Laws (Repeal) Act, 1959(a), hereby order as follows :—

1. Subject to the provisions of Article 2 of this Order, a person in, or ordinarily resident in, the United Kingdom shall not dispose of any goods of a description included in the First Schedule hereto situated outside the United Kingdom to the government, any government agency or other authority of, or to any person in, any country or territory specified in the Second Schedule hereto, or, if he has reasonable cause to believe that those goods may be imported directly or indirectly into any such country or territory, to any person whatsoever.

2. Nothing in Article 1 shall be taken to prohibit the disposal of—

(*a*) any goods under the authority of a licence granted by the Board of Trade under this Article, provided that any conditions attached to the licence are complied with ;

(*b*) any goods which are to be supplied directly to any ship as ships' stores for that ship or to any aircraft as stores for that aircraft ;

(*c*) any aircraft turbine engine fuel which is to be supplied directly to any aircraft as fuel for that aircraft.

3. The Orders specified in the Third Schedule hereto are hereby revoked :

Provided that any licence granted under Article 2 of the Strategic Goods (Control) Order, 1959(b), and in force immediately before the commencement of this Order shall have effect in like manner as if it had been granted under Article 2 of this Order.

4. In this Order—

"dispose of" means disposal whether inside or outside the United Kingdom and includes disposal of

(*a*) ownership or any proprietary interest, or

(*b*) the right to possession, or

(*c*) possession whether or not accompanied by any disposal of ownership or of any proprietary interest or of the right to possession,

(a) 7 & 8 Eliz. 2. c. 19. (b) S.I. 1959/190 (1959 I, p. 1218).

but does not include disposal by a carrier (otherwise than by way of sale) in the course of his business as such;

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

references in the First Schedule hereto to percentages of the content of any goods are references to percentages by weight; and

any other terms, the meaning of which in certain contexts is defined in the First Schedule hereto have, when used in such a context, the meaning so ascribed to them.

5. This Order may be cited as the Strategic Goods (Control) Order, 1961, and shall come into operation on the 6th day of December, 1961.

Dated this 22nd day of November, 1961.

Niall Macpherson,
Parliamentary Secretary
to the Board of Trade.

FIRST SCHEDULE

PART I

GROUP 1

Aircraft, Arms and Military Stores and Appliances

Aircraft and helicopters, of the piloted or pilotless types; aero-engines and aircraft equipment; associated equipment and components.

Arms, missiles and munitions; components and parts specially designed therefor.

Articles (including vehicles) specially designed or adapted for military use, and all components and parts specially designed therefor.

Biological and chemical materials adapted for use in war to produce casualties in men or animals, or to damage crops; equipment specially designed and intended—

(1) for their dissemination, or

(2) for defence against them;

components and parts specially designed therefor.

Cables, electric, buoyant types, suitable for sweeping magnetic mines.

Climatic conditioning chambers giving temperature, or pressure, or radiation, or humidity conditions equivalent to altitudes of 75,000 feet or more.

Cryogenic equipment, the following:—

(1) Equipment designed for maintaining an ambient temperature below − 130° Centigrade:—

(*a*) Designed for use in marine, airborne or space applications;

(*b*) Ruggedised for mobile ground use;

(*c*) Designed to maintain operating temperatures for electrical, magnetic or electronic equipment or components;

(2) Electrical, magnetic or electronic equipment designed for operation at ambient temperatures below − 130° Centrigrade;

(3) Specially designed accessories, sub-assemblies, parts or components for (1) and (2).

Explosives as defined in Section 3 of the Explosives Act, 1875.

Ground and airborne equipment developed solely or of a kind used mainly for aircraft, other than types in normal civil use.

Machinery and machine tools and apparatus specially designed or adapted for the production, testing, research into and development of any of the items specified in this Group.

Pressurised breathing equipment and partial pressure suits for use in aircraft; anti-g suits; flak suits; parachutes of a kind used for combat personnel, cargo-dropping and aircraft deceleration; liquid oxygen converters of a kind used for aircraft and missiles; catapults and cartridge actuated devices of a kind utilised in emergency escape of personnel from aircraft.

Self-contained diving and underwater swimming apparatus, the following:—

(1) Closed and semi-closed circuit (rebreathing) apparatus.

(2) Specially designed components for use in the conversion of open-circuit apparatus to military use.

(3) Articles specially designed for military use with self-contained diving and underwater swimming apparatus.

Telemetering and telecontrol apparatus suitable for use with aircraft (piloted or pilotless), missiles (guided or unguided) or space vehicles (guided or unguided).

Vessels of war and propulsion machinery for such vessels; components, parts, accessories and attachments specially designed therefor.

GROUP 2

Atomic Energy Materials and Appliances

Centrifuges, gas, capable of the enrichment or separation of isotopes.

Compressors and blowers (turbo, centrifugal and axial flow types), wholly made of, or lined with, aluminium, nickel or alloy containing 60 per cent. or more of nickel, having a capacity of 60 cubic feet per minute or greater.

Deuterium, heavy water, heavy paraffins and other compounds in which the ratio by number of deuterium atoms to hydrogen atoms exceeds 1 to 5,000; mixtures and solutions of any of the foregoing.

Dosimeters, personal radiation monitoring, capable of measuring (*a*) in one exposure a dosage between 25 and 800 roentgens, or (*b*) dose rates of between 1 and 80 roentgens per hour, other than—

(1) film dosimeters,

(2) dosimeters designed specially for use with medical radiation equipment.

Electrolytic cells for the production of fluorine, with a production capacity greater than 100 grammes of fluorine per hour.

Equipment specially designed for the separation of isotopes of uranium or lithium or of uranium and lithium.

Fissionable material, the following:—

(1) Plutonium.

(2) Uranium enriched in the isotope 235.

(3) The isotope 233 of uranium.

(4) Alloys, compounds or mixtures of any of the foregoing.

Graphite, artificial, having a boron content of one part per million or less, and a total thermal neutron absorption microscopic cross-section of 5 millibars or less per atom, in the form of blocks, bricks, plates, rods or electrodes, from which a cube of 2 inches side or greater can be cut.

Heat exchangers, designed for use in gaseous diffusion plants, designed to operate at sub-atmospheric pressure, with a leak rate of less than 10^{-4} atmospheres per hour under a pressure differential of 1 atmosphere, the following:—

(1) Types wholly made of aluminium, copper or nickel or alloys containing more than 60 per cent. of nickel, separately or together.

(2) Types incorporating tubing clad with aluminium, copper or nickel or alloys containing more than 60 per cent. of nickel, separately or together, and in which the other parts are wholly made of the foregoing metals, separately or together.

Mass spectrographs and mass spectrometers, the following:—

(1) Mass spectrographs and mass spectrometers with analyser assemblies capable of handling uranium hexafluoride.

(2) Solid source mass spectrographs and mass spectrometers of high sensitivity.

Nuclear reactors capable of operation so as to maintain a controlled self-sustaining fission chain reaction; and sub-assemblies, components and parts specially designed for use therefor.

Positive ion sources suitable for use in mass spectrographs or mass spectrometers and capable of handling uranium hexafluoride.

Thorium and its compounds and mixtures containing such substances.

Tritium and compounds containing tritium in which the ratio by number of tritium atoms to hydrogen atoms exceeds 1 to 1,000.

Uranium and its compounds and mixtures containing such substances.

Valves, 3 centimetres or greater in diameter, with bellows seal, wholly made of or lined with aluminium, nickel, or alloy containing 60 per cent. or more of nickel, either manually or automatically operated and with other than metal to metal seats.

GROUP 3

Electrical, Electronic and Scientific Appliances

Amplifiers—

(*a*) designed to operate at frequencies in excess of 500 megacycles per second;

(*b*) tuned, having a bandwidth which exceeds 10 megacycles per second or 10 per cent. of the mean frequency, whichever is less;

(*c*) untuned, having a bandwidth which exceeds 10 megacycles per second;

(*d*) direct current, amplifying by whatever means, having a noise level (referred to the input circuit) of 10^{-16} watts or less, or a zero drift in one hour corresponding to a change in input of 10^{-16} watts or less, or both these characteristics;

(*e*) parametric, with a noise figure of merit of 5 decibels or less measured at a temperature of 17° Centigrade;

(*f*) paramagnetic;

(*g*) other devices which amplify by means of simulated electromagnetic radiation;

and specialised parts for the equipment mentioned in heads (*e*), (*f*) and (*g*) of this entry.

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; and

"mean frequency" means the arithmetic mean between the frequencies at which the power amplification is one-half of its maximum value.

Apparatus for automatically sorting electronic components in respect of their electrical characteristics.

Apparatus designed to jam or otherwise interfere with radio reception, and parts specially designed therefor.

Apparatus of a kind used for detecting or locating objects under water by magnetic, acoustic or ultrasonic methods, except marine depth sounders of a kind used solely for measuring the depth of water or the distance of submerged objects vertically below the apparatus; specialised components of such apparatus.

Capacitors, tantalum electrolytic, the following:—

(1) All types designed to operate at temperatures exceeding 85° Centigrade.

(2) Sintered electrolytic capacitors.

(3) Electrolytic capacitors constructed with foils.

Centrifugal testing apparatus possessing any of the following characteristics:—

(1) driven by a motor or motors having a total rated horsepower greater than 400 horsepower;

(2) capable of carrying a load of 250 pounds or more;

(3) capable of exerting a centrifugal acceleration of 8 g or more on a load of 200 pounds or more.

Communication, detection and tracking equipment of a kind using infra-red radiation or ultrasonic waves, and specialised parts therefor.

Communication equipment employing tropospheric, ionospheric or meteoric scatter phenomena and specially designed sub-assemblies, parts and test equipment therefor.

Communication, navigation, direction finding and radar equipment, the following:—

(1) Airborne communication equipment and specialised parts and components therefor.

(2) Airborne navigation equipment and direction finding equipment, the following:—

(*a*) Altimeters, pulse modulated.

(*b*) Equipment designed to make use of the Doppler frequency phenomena.

(*c*) Equipment utilisng the constant velocity or the rectilinear propagation characteristics of electromagnetic waves having frequency less than 4×10^{-14} cycles per second (0·75 microns), or both.

(*d*) Equipment, direction finding, operating at frequencies greater than 5 megacycles per second, other than equipment designed for search and rescue purposes provided that the receiver operates on a crystal controlled fixed frequency of 121·5 megacycles per second and that the determination of the direction finding bearing is not independent of the heading of the aircraft and provided that the direction finding antenna array is designed for operation at a fixed frequency of 121·5 megacycles per second.

(*e*) Equipment pressurised throughout.

(*f*) Equipment rated for continuous operation over a range of ambient temperatures extending from below −40° Centigrade to above 55° Centigrade.

(3) Airborne radar equipment.

(4) Ground and marine radar equipment, the following:—

(*a*) Radar equipment, other than commercial equipment designed for pulse operation at frequencies between 1,300 megacycles per second and 1,660 megacycles per second, 2,700 megacycles per second and 3,900 megacycles per second, or 8,500 megacycles per second and 10,000 megacycles per second, and having

(i) in the case of marine navigation radar, a peak output power to the aerial system of 75 kilowatts or less, and

(ii) in the case of ground based radar, a peak output power to the aerial system of less than 50 kilowatts and a maximum usable range against the largest airborne target of less than 50 nautical miles.

(*b*) Radar equipment incorporating
(i) permanent echo cancellation facilities, or
(ii) aerials with circular polarisation.

(*c*) Radar equipment utilising other than conventional pulse modulation and signal processing techniques.

(*d*) Ground and marine direction finding equipment operating at frequencies greater than 5 megacycles per second.

(5) Ground and marine equipment for use with airborne navigation equipment utilising the constant velocity or the rectilinear propagation characteristics of electromagnetic waves having frequency less than 4×10^{14} cycles per second (0·75 microns), or both.

(6) Specialised parts, specialised accessories, specialised testing or calibrating equipment and training or simulating equipment for the apparatus mentioned in heads (2), (3), (4) or (5) of this entry.

Communication transmission equipment, the following:—

(1) Terminal and intermediate repeater or amplifier equipment designed to deliver, carry or receive frequencies higher than 36 kilocycles per second into, or in, a communication system.

(2) Multi-channel telegraph terminal transmitting and receiving equipment.

(3) Specialised components, accessories and sub-assemblies for the foregoing.

Compasses and gyroscopic apparatus, the following:—

(1) Automatic pilots, except marine types for surface vessels.

(2) Gyro compasses, North-seeking only, possessing one or more of the following characteristics:—

(*a*) automatic correction for the effects on compass accuracy of changes in ship's speed, acceleration or latitude;

(*b*) provision for accepting ship's data as an electrical input;

(*c*) provision for setting in corrections for current set and drift;

(*d*) utilisation of accelerometer, rate gyro, rate integrating gyros or electrolytic levels as sensing devices;

(*e*) provision for determining and electrically transmitting ship's level reference data (roll, pitch) in addition to own ship's course data.

(3) Gyro-astro compasses.

(4) Gyro-magnetic compasses.

(5) Gyro-stabilisers other than the kinds used for stabilising an entire surface vessel.

(6) Gyroscopes and accelerometers, high precision or miniaturised, of the kind designed for use in ship inertia navigation systems, or in the guidance systems of weapons or aircraft.

(7) Pressure proof ship's course indicators.

(8) Transmitting magnetic compasses specially designed for submarines.

(9) Specially designed parts and components for any of the foregoing.

Components, electronic, capable of reliable performance in relation to their electrical and mechanical characteristics and maintaining their design service life-time while operating—

(*a*) over the whole range of ambient temperatures extending from below −45° Centigrade to above 100° Centigrade, or

(*b*) at ambient temperatures of 200° Centigrade or higher.

Computers, electronic (other than office calculating machines) and specialised components, parts, sub-assemblies and accessories therefor.

Control equipment, the following:—

(1) Synchros and resolvers possessing any of the following characteristics:—

(*a*) A rated electrical error of 10 minutes or less or of 0·5 per cent. or less of maximum output voltage;

(*b*) A rated dynamic accuracy for receiver types of 1° or less, except that for units of size 30 (3 inches in diameter) or larger a rated dynamic accuracy of less than 1°;

(*c*) Multi-speed from single-shaft types;

(*d*) Of size 11 (1·1 inches in diameter) and smaller;

(*e*) Types employing solid state Hall effect;

(*f*) Types designed for gimbal mounting;

(*g*) Types designed to operate below −55° Centigrade or above 125° Centigrade;

and special instruments (including microsyns, synchro-tels and inductosyns) rated to have any of the characteristics specified in (*a*), (*b*) and (*g*) of this sub-head;

(2) Amplifiers, electronic or magnetic, specially designed for use with resolvers, the following:—

(*a*) Isolation types having a variation of gain constant (linearity of gain) of 0·5 per cent. or better; or

(*b*) Summing types having a variation of gain constant (linearity of gain) or an accuracy of summation of 0·5 per cent. or better; or

(*c*) Types employing solid state Hall effect; or

(*d*) Types designed to operate below −55° Centigrade or above 125° Centigrade;

(3) Induction potentiometers (including function generators and linear synchros), linear and non-linear, possessing any of the following characteristics:—

(*a*) A rated conformity of 0·5 per cent. or less, or of 18 minutes or less;

(*b*) Of size 11 (1·1 inches in diameter) or smaller;

(*c*) Types employing solid state Hall effect;

(*d*) Types designed for gimbal mounting;

(*e*) Types designed to operate below −55° Centigrade or above 125° Centigrade;

(4) Induction rate (tachometer) generators, synchronous and asynchronous, the following:—

(*a*) Types with a rated linearity of 0·5 per cent. or less;

(*b*) All temperature-compensated or temperature-corrected types;

(*c*) Types of size 11 (1·1 inches in diameter) and smaller;

(*d*) Types employing solid state Hall effect;

(*e*) Types designed to operate below −55° Centigrade or above 125° Centigrade;

(5) Servo-motors (gear-head or plain), the following:—

(*a*) Types designed to operate from power sources of more than 300 cycles per second (other than those designed to operate from power sources of over 300 cycles per second up to but not exceeding 400 cycles per second with a temperature range of from −10° Centigrade to 55° Centigrade; or

(*b*) Types designed to have a torque-to-inertia ratio of 10,000 radians per second per second or greater; or

(*c*) Types incorporating special features to secure internal damping; or

(*d*) Types of size 11 (1·1 inches in diameter) and smaller; or

(*e*) Types employing solid state Hall effect; or

(*f*) Types designed to operate below −55° Centigrade or above 125° Centigrade;

(6) Potentiometers, other than potentiometers using only switched elements, the following:—

(*a*) Linear potentiometers having a constant resolution and a rated linearity of 0·1 per cent. or less;

(*b*) Non-linear potentiometers having a variable resolution and a rated conformity of:—

(i) 1 per cent. or less when the resolution is inferior to that obtained with a linear potentiometer of the same type and of the same track length; or

(ii) 0·5 per cent. or less when the resolution is better than or equal to that obtained with a linear potentiometer of the same type and of the same track length;

(*c*) Types designed for gimbal mounting;

(*d*) Types designed to operate below −55° Centigrade or above 125° Centigrade;

and special instruments (including Vernistats) rated to have any of the characteristics specified in (*a*), (*b*) or (*d*) of this sub-head;

(7) Direct current and alternating current torquers (torque motors specially designed for gyros and stabilised platforms);

(8) Electrical-optical devices designed to monitor relative rotation of remote surfaces;

(9) Synchronous motors, the following:—

(*a*) Types having synchronous speeds in excess of 3,000 revolutions per minute; or

(*b*) Types designed to operate from power sources of more than 400 cycles per second; or

(*c*) Types designed to operate below −10° Centigrade or above 55° Centigrade; or

(*d*) Types of size 11 (1·1 inches in diameter) or smaller;

(10) Ball-and-disc or cylinder-and-ball mechanical integrators, and mechanical ball resolvers;

(11) Analogue-to-digital and digital-to-analogue converters, the following:—

(*a*) Electrical-input types possessing—

(i) a peak conversion rate capability in excess of 50,000 complete conversions per second; or

(ii) an accuracy in excess of 1 part in more than 10,000 of full scale; or

(iii) a figure of merit of 5×10^6 (derived from the number of complete conversions per second divided by the accuracy);

(*b*) Mechanical input types, including shaft position encoders and linear displacement encoders, but excluding complex servo-follower systems, the following:—

(i) Rotary types having an accuracy of maximum incremental accuracy better than ± 1 part in 10,000 of full scale, or of size 11 (1·1 inches in diameter) and smaller;

(ii) Linear displacement types having an accuracy better than ± 5 microns; or

(*c*) Types employing solid state Hall effect; or

(*d*) Types designed to operate below −55° Centigrade or above 125° Centigrade;

(12) Specially designed components, parts, sub-assemblies and test equipment (including adaptors and couplers) for the equipment specified in sub-heads (1), (2), (3), (4), (5), (6), (7), (8), (9), (10) and (11).

Electric generators, mobile types, with a maximum continuous rating of more than 5,000 kilowatts.

Electric-impulse generators of a kind used for providing recurring impulses of peak power exceeding 150 kilowatts or of a duration of less than 0·1 micro-second, or with a duty cycle in excess of 0·002. and pulse transformer and pulse-forming equipment and delay lines being parts specially designed for such electric-impulse generators.

Electromagnetic waveguides and components therefor, the following:—

(1) Flexible waveguides of all types.

(2) Pressurised waveguides and specialised components therefor.

(3) Rigid waveguides and components designed for use at frequencies in excess of 12,500 megacycles per second.

(4) TEM mode devices using magnetic, including gyro-magnetic, properties.

(5) Waveguides having a bandwidth ratio greater than 1·5:1.

(6) Electromagnetic waveguide components, the following:—

(*a*) Directional couplers having a bandwidth ratio greater than 1·5:1 and a directivity over the band of 15 decibels or more.

(*b*) Rotary joints capable of transmitting more than one isolated channel or having a bandwidth greater than 5 per cent. of the centre mean frequency.

(*c*) Magnetic, including gyro-magnetic, waveguide components.

Electronic and precision instruments and apparatus, the following:—

(1) Electronic measuring, testing or calibrating instruments having one or more of the following characteristics:—

(*a*) designed for use at frequencies in excess of 500 megacycles per second,

other than—

(i) the radio spectrum analysers specified elsewhere in this group;

(ii) signal generators or mixers using self excited oscillators, with an overall frequency accuracy figure greater than 1·0 per cent., operating at less than 1,000 megacycles per second, and not having more than 2 rated output reference levels;

(*b*) testing instruments rated to maintain their specified operating data when operating over a range of ambient temperatures extending from below −25° Centigrade to above 55° Centigrade.

(2) Cathode-ray oscilloscopes and specialised parts and accessories therefor, the following:—

(*a*) Cathode-ray oscilloscopes of the kinds having any of the following characteristics:—

(i) a bandwidth greater than 12 megacycles per second;

(ii) a time base shorter than 0·04 microseconds per centimetre;

(iii) incorporating, or designed to use, one or more cathode-ray tubes having three or more electron guns;

(iv) incorporating, or designed to use, cathode-ray memory tubes;

(v) employing accelerating potentials in excess of 5 kilovolts.

(*b*) Amplifiers and pre-amplifiers, which are specialised accessories or sub-assemblies of cathode-ray oscilloscopes, having a bandwidth greater than 12 megacycles per second.

(*c*) Electronic devices (sampling devices) for stroboscopic analysis of a signal, whether sub-assemblies or separate units, designed to be used in conjunction with cathode-ray oscilloscopes to permit the analysis of recurring phenomena, which increase the capabilities of a cathode-ray oscilloscope to permit measurements within the limits of the apparatus mentioned under item (2) (*a*) (i) of this entry, or to achieve its operation within the limits of item (2) (*a*) (ii) of this entry.

In this entry "bandwidth" means the band of frequencies over which the deflection in the cathode-ray tube does not fall below 70·7 per cent. of that at the maximum point, measured with a constant input voltage to the amplifier.

Electronic cathode-ray tubes, vacuum tubes or valves, the following:—

(1) Cathode-ray tubes—

(*a*) with a resolving power of 500 lines or more per inch, using the shrinking raster method of measurement;

(*b*) with writing speeds of more than 3,000 kilometres per second;

(*c*) with three or more electron guns, other than 3-gun colour television tubes designed for entertainment use;

(*d*) alpha-numeric and similar data or information display tubes (display being obtained by scanning or other means), other than those tubes in which the displayed position of each character is fixed.

(2) Image converter tubes, image intensifier tubes and electronic storage tubes including memory transformers of radar pictures and ruggedised vidicon-type tubes but excluding other television camera tubes and X-ray intensifier tubes.

(3) Thyratron and modulator gas-discharge tubes, rated for continuous operation with peak current and peak voltage exceeding 100 amperes and 9,000 volts at a pulse repetition frequency of 200 or more pulses per second.

(4) Hydrogen thyratron tubes of any rating.

(5) Valves, constructed with a ceramic envelope and designed for frequencies in excess of 60 megacycles per second, and specialised parts therefor.

(6) Valves designed for operation in ambient temperatures exceeding 100° Centigrade, and specialised parts therefor.

(7) Valves designed to withstand—

(*a*) sinusoidal vibration at peak acceleration greater than 5g for a total period in excess of 100 hours at any one frequency between 25 and 170 cycles per second; or

(*b*) swept frequency sinusoidal vibrations between 60 and 1,000 cycles per second, with a minimum swept frequency of 5 to 1, at a peak acceleration greater than 4g for a total period in excess of 200 hours; or

(*c*) acceleration of short duration (shock) greater than 1,000g;

and specialised parts therefor.

(8) Valves indirectly heated, of a kind that can be passed through a circular hole 7·2 millimetres in diameter, and specialised parts therefor.

(9) Valves, the following—

(*a*) Klystrons, magnetrons and travelling wave tubes;

(*b*) All other valves of the kind in which the velocity of the electrons is utilised as one of the functional parameters other than diodes, diode-triodes, heptodes, hexodes, pentodes, tetrodes, triodes and triode-pentodes;

and specialised parts therefor.

(10) Valves—

(*a*) rated for CW operation over the frequency range of 300 to 600 megacycles per second and for which (at any part of this frequency range and under any condition of cooling) the product of frequency of operation in megacycles per second squared and the power output in watts from the anode or anodes of a single envelope at this frequency exceeds 10^7, when the valve is operating in Class C telegraphy key down conditions, or in Class C FM telephony conditions, or, if performance under those conditions is not known, the product of declared maximum frequency of full ratings in megacycles per second squared and the maximum anode dissipation per valve in watts exceeds 5×10^8;

(*b*) rated for operation above 600 megacycles per second;

(*c*) rated for pulse operation above 300 megacycles per second;

(*d*) having external anode or anodes rated for operation above 300 megacycles per second;

and specialised parts therefor.

(11) X-ray tubes, flash discharge types.

Electronic equipment and components, the following:—

(1) Assemblies and sub-assemblies constituting one or more functional circuits with a component density greater than 75 parts per cubic inch, and equipment containing such assemblies or sub-assemblies.

(2) Modular insulating panels (including plates and wafers) mounting single or multiple electronic elements, and specialised parts therefor.

Equipment designed to provide secrecy facilities on either voice or telegraph, line or radio communication circuits other than those systems making use of frequency inversions or band scrambling techniques.

Ferritic materials and other materials composed of crystals having spinel structures (and assemblies thereof and devices incorporating such materials), the following:—

(1) Monocrystals of ferrites and garnets (synthetic only);

(2) Single aperture forms possessing any of the following characteristics:—

(*a*) switching speed of 0·5 microsecond or less at the minimum field strength required for switching at 40° Centigrade;

(*b*) a maximum dimension less than 45 mils (1·14 mm.);

(3) Multi-aperture forms with fewer than 10 apertures possessing any of the following characteristics:—

(*a*) switching speed of 1 microsecond or less at the minimum field strength required for switching at 40° Centrigrade;

(*b*) a maximum dimension less than 100 mils (2·54 mm.);

(4) Multi-aperture forms having 10 or more apertures;

(5) Thin film memory storage or switching devices;

(6) Electrical filters in which the coupling element makes use of the electromechanical properties of ferrites;

(7) Materials suitable for application in electromagnetic devices making use of the gyro-magnetic resonance phenomenon.

Ion microscopes having a resolving power better than 10 angströms.

Magnetometers of the following types:—

(1) fluxgate;

(2) electron beam sensing;

(3) paramagnetic;

(4) nucleonic;

and parts specially designed therefor.

Materials designed and manufactured for use as absorbers of electromagnetic waves having frequencies greater than 2×10^8 cycles per second and less than 3×10^{12} cycles per second.

Measuring, calibrating, counting, and time interval measuring apparatus (whether or not incorporating frequency standards), having one or more of the following characteristics:—

(1) (*a*) consisting of, or containing, frequency measuring equipment or frequency standards designed for other than ground laboratory use with an accuracy better than 1 part in 10^7;

(*b*) consisting of, or containing, ground laboratory frequency standards or frequency measuring equipment incorporating frequency standards with a stability over 24 hours of 1 part in 10^9 or better;

(2) designed for use at frequencies in excess of 500 megacycles per second;

(3) designed to provide a multiplicity of alternative output frequencies controlled by a lesser number of piezo electric crystals or an internal or external frequency standard and not forming multiples of a common control frequency;

(4) counting equipment capable of resolving at normal input levels successive input signals with less than 0·5 microsecond time difference;

(5) time interval measuring equipment containing the counting equipment specified in (4).

Photo-electric cells (other than germanium photo cells with a peak response less than 17,500 ångströms), the following:—

Photo-electric cells, photo-conductive cells (including photo-transistors and similar cells) with a peak sensitivity at a wavelength longer than 12,000 ångströms.

Photo-transistors (photo-conductive cells including photo-diodes) with a response time constant of one millisecond or less measured at the operating temperature of the cell for which the time constant reaches a minimum.

Photographic apparatus, the following:—

(1) High speed cameras capable of recording at rates in excess of 250,000 frames per second.

(2) High speed cinematograph cameras, the following:—

(*a*) Cinematograph cameras employing film of a width of 35 millimetres or less, capable of recording at rates in excess of 3,000 frames per second using as the lighting source a steady light flow.

(*b*) Cinematograph cameras employing film of a width of 35 millimetres or less, capable of recording at rates in excess of 10,000 frames per second using as the lighting source flash apparatus connected to the unwinding system.

(*c*) Cinematograph cameras employing film wider than 35 millimetres and capable of recording at rates exceeding 64 frames per second.

(3) Photographic microflash apparatus capable of giving a flash of 10 microseconds or shorter duration at a minimum recurrent frequency of 200 flashes per second.

(4) Photographic systems specially designed for use in space vehicles.

Photomultiplier tubes of all types for which the maximum sensitivity occurs at wavelengths longer than 7,500 ångströms.

Piezo-electric quartz crystals, blanks, plates, bars, rods and toroids, worked or unworked, mounted or unmounted.

Radio receivers, panoramic, being receivers which search automatically a part of the radio frequency spectrum and indicate the signals received, and parts specially designed for such receivers.

Radio relay communications equipment other than short range and low power links for transmissions between camera or studio and the television transmitter; specialised components and sub-assemblies therefor.

Radio spectrum analysers (being apparatus capable of indicating the single-frequency components of multi-frequency oscillations), the following:—

(*a*) designed to operate at frequencies over 500 megacycles per second;

(*b*) designed to operate at frequencies over 300 megacycles per second and using interchangeable heads (radio-electric frequency tuning systems) and incorporating integral sweep facilities;

(*c*) having a display bandwidth in excess of 12 megacycles per second;

(*d*) specialised components, parts and accessories for (*a*), (*b*) and (*c*).

Radio transmitters and components, the following:—

(1) Transmitters or transmitter amplifiers designed to operate—

(*a*) at output carrier frequencies between 108 megacycles per second and 156 megacycles per second, other than equipment designed for search and rescue purposes where such equipment comprises an omnidirectional beacon and operates on a single crystal-controlled fixed frequency of 121·5 megacycles per second; or

(*b*) at output carrier frequencies greater than 223 megacycles per second other than television broadcasting transmitters and amplifiers therefor operating between 470 and 585 megacycles per second or between 610 and 940 megacycles per second.

(2) Transmitters or transmitter amplifiers designed to provide any of the following features:—

(*a*) any system of pulse modulation other than amplitude-, frequency- or phase-modulated television or telegraphic transmitters;

(*b*) rated for operation over a range of ambient temperatures extending from below −40° Centigrade to above 55° Centigrade;

(*c*) facilities providing a multiplicity of alternative output carrier frequencies controlled by a lesser number of piezo-electric crystals and not forming multiples of a common control frequency.

(3) Components and sub-assemblies, including modulators and modulation amplifiers, specially designed for use in any such transmitters.

Recording or reproducing equipment, the following:—

(1) Equipment using magnetic techniques (other than equipment specially designed for voice or music including such equipment containing one control channel);

(2) Equipment using electrothermal or electrostatic recording techniques employing electron beams operating in a vacuum or employing other means to provide a charge pattern directly on the recording surface (other than document copying equipment which employs electrothermal or electrostatic techniques to reproduce, on specially sensitised media, documents with which the media are in physical contact at the time of reproduction);

(3) Specialised equipment for the read-out of material recorded by the equipment specified in (2);

(4) Specialised recording media (tapes, drums, discs and matrices) for use with the equipment specified in (1), (2) and (3);

(5) Specialised components and parts for the equipment specified in (1), (2), (3) and (4).

Semi-conductor diodes, including rectifier diodes and switching diodes, but excluding photo-diodes, the following:—

(1) Any semi-conductor diode in which the bulk material is other than silicon, germanium, selenium or copper oxide.

(2) Signal diodes, including mixer diodes, frequency-changing diodes and switching diodes, the following:—

(*a*) Point contact type diodes in which the bulk material is silicon and which are designed for use at input frequencies greater than 300 megacycles per second.

(*b*) Point contact type diodes in which the bulk material is germanium and which are designed for use at input frequencies greater than 1,000 megacycles per second.

(*c*) Junction type diodes, including switching type diodes, in which the bulk material is silicon and which are designed—

(i) for use at input frequencies greater than one megacycle per second; or

(ii) for switching rates (repetition frequency) greater than 100 kilocycles per second.

(*d*) Junction type diodes, including switching type diodes, in which the bulk material is germanium and which are designed—

(i) for use at input frequencies greater than 300 megacycles per second; or

(ii) for switching rates (repetition frequency) greater than one megacycle per second.

(3) (*a*) Power diodes in which the rated peak inverse voltage exceeds 1,000 volts per junction at 25° Centigrade and under any conditions of cooling.

(*b*) Controlled diodes, the following:—

Semi-conductor multiple-junction devices for applications similar to those of grid-controlled gas-filled tubes, designed for use at switching rates (repetition frequency) greater than 100 kilocycles per second.

Telegraph apparatus, the following:—

Apparatus designed for the transmission or reception of messages at a speed exceeding 200 words per minute or 150 bauds, whichever is the less, other than—

(1) Apparatus operating at a speed of 300 bauds where the corresponding number of words does not exceed 65 words per minute, and

(2) Telemetering, telecommand and telesignalling equipment designed for industrial purposes employing time division multiplexing in which the total speed of operation is less than 150 bauds.

Terminal equipment capable of transmitting or receiving digital data at a rate in excess of 2,000 bits per second (bauds) or at a rate (applicable to single channels or to each sub-channel in a multi-channel system) in bits per second (bauds) numerically in excess of 75 per cent. of the channel (or sub-channel) bandwidth in cycles per second.

Specialised parts and accessories for such apparatus.

Thermal detecting cells, the following:—

Bolometers and thermocouple detectors, radiant energy types, with a response time constant of less than 10 milliseconds measured at the operating temperature of the cell for which the time constant reaches a minimum.

Thermoelectric materials and devices, the following:—

(1) Thermoelectric materials with a maximum product of the figure of merit (Z) and the temperature (T in °Kelvin) in excess of 0·75;

(2) Junctions and combinations of junctions using any of the materials specified in (1);

(3) Heat absorbing or electric power generating devices incorporating any of the junctions specified in (2);

(4) Other power generating devices which generate in excess of 10 watts per pound or of 500 watts per cubic foot of the device's basic thermoelectric components;

(5) Specialised parts, components and sub-assemblies for (1), (2), (3) and (4).

In this entry—

The figure of merit (Z) equals Seebeck coefficient squared divided by the product of electrical resistivity and thermal conductivity.

The weight and cubic measurements in (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 as heating or cooling sources or containers, device frames or stands and control equipment are not to be included in the calculations.

Transistors and related devices (or related semi-conductor amplifying devices such as fieldistors, spacistors and technetrons), the following:—

(1) Any type using any semi-conductor material having four or more active junctions within any single block of semi-conductor material;

(2) Any type using a bulk semi-conductor material other than germanium;

(3) Any type using germanium as a bulk semi-conductor material and having any of the following characteristics:—

(*a*) an average f alpha less than 50 megacycles per second and designed to have a product of maximum collector dissipation (in watts) times average f alpha (in megacycles per second) greater than 7·5;

(*b*) an average f alpha of 50 to 150 megacycles per second and designed to have a maximum collector dissipation greater than 150 milliwatts;

(*c*) an average f alpha greater than 150 megacycles per second;

(4) Specially designed or rated for use as a switching transistor for switching rates (repetition frequency) greater than 500 kilocycles per second;

(5) Specialised parts for the foregoing.

This entry covers all devices incorporating a semi-conducting crystal of any material with three or more electrical connections or with only two such connections where four or more active junctions exist within a single block of semi-conductor material, which are used as amplifiers, oscillators or trigger devices, or combinations thereof in electronic circuits.

In this entry—

"Maximum collector dissipation" means the continuous dissipation measured at an ambient temperature of 25° Centigrade, under any cooling conditions; and

"f alpha" means the frequency at which the modulus of the current gain in the common base connection has decreased to 0·707 of its low frequency value. Where f_1 (the frequency at which the modulus of the current gain in the common emitter connection is equal to 1) is quoted instead of f alpha, f_1 may be regarded as 0·8 times f alpha; and

"average f alpha" means the f alpha at which the major production of a particular type of transistor occurs, and where the average f alpha is not quoted or known, this value shall be taken as 1·5 times the minimum f alpha.

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GROUP 4

Chemicals

Ammonium perchlorate.

Beryllium compounds.

Boron compounds, and mixtures, the following:—

(1) Boric acids and the esters and ammonium, calcium, magnesium, potassium and sodium salts of boric acids, but not including perborates.

(2) Boric oxide.

(3) Boron carbide.

(4) Boron nitride.

(5) Boron trichloride and its complexes.

(6) Boron trifluoride and its complexes.

(7) Fluoroborates.

(8) Other boron compounds containing 10 per cent. or more of combined boron, excluding:—

(*a*) Perborates.

(*b*) Metal borates other than those specified in head (1) of this entry.

(9) Mixtures containing an aggregate of 10 per cent. or more of boron whether in combined or elemental forms.

Cellulose nitrate (Nitrocellulose).

Chlorine trifluoride.

Chlorotrifluoroethylene.

Dichlorotetrafluoroethane.

*sym*Diethyl*sym*diphenylurea (carbamite or centralite).

Diethylenetriamine.

*sym*Dimethyl*sym*diphenylurea (carbamite or centralite).

*asym*Dimethylhydrazine.

Dinitrophenol.

*asym*Diphenylurea.

Ethyl diphenylcarbamate (diphenylurethane).

Ethyl*asym*diphenylurea.

Ethyl di-*o*-tolylcarbamate (di-*o*-tolylurethane).

Ethyl *N*-ethylphenylcarbamate (ethylphenylurethane).

Fluorine.

Guanidine nitrate.

Hafnium compounds containing more than 15 per cent. by weight of hafnium.

Hydrazine, whether or not anhydrous, having a hydrazine content calculated as anhydrous hydrazine, of 70 per cent. or more.

Hydrazine nitrate.

Hydrogen peroxide and solutions containing 50 per cent. or more of hydrogen peroxide.

Lead azide.

Lead styphnate (lead trinitroresorcinoxide).

Lead thiocyanate.

Lithium compounds.

Methyl*asym*diphenylurea.

Nitric acid, fuming.

2-Nitrodiphenylamine.

p-Nitromethylaniline.

Pentaerythritol tetranitrate.

Picrates.

Picric acid.

Sodium azide.

Tantalum compounds.

Tetrafluoroethylene.

Trichlorotrifluoroethane.

Zirconium compounds in which the ratio of hafnium content to zirconium content is less than one part to 500 parts by weight, other than zirconium oxide thermally stabilised with calcium oxide or magnesium oxide or both.

GROUP 5

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Minerals and Metals

In this Group—

"raw materials" means ores, concentrates, matte, regulus, residues and dross (ashes), from which the metal described in the entry can be extracted;

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

"semi-fabricated forms" means the following (whether or not coated, plated, drilled or punched):—

(1) wrought or worked materials, fabricated by rolling, drawing, extruding, forging, impact extruding, pressing, graining, atomising and grinding, the following:—

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, pipes and tubes (including tube rounds, squares and hollows) and drawn or extruded wire; or

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

Beryllium, the following:—

Ores (other than gem grade beryl) and concentrates.

Beryllium and alloys containing more than 50 per cent. of beryllium, in crude or semi-fabricated forms.

Manufactures wholly or mainly by weight of beryllium, other than windows for medical X-ray machines.

Boron, the following:—

Boron minerals, crude and refined.

Ferro-boron, whether briquetted or not.

Boron and alloys containing 10 per cent. or more of boron, in crude or semi-fabricated forms.

Calcium containing less than 100 parts per million by weight of impurities other than magnesium and less than 10 parts per million by weight of boron.

Cobalt, the following:—

Raw materials, white alloy and red alloy.

Ferro-cobalt, whether briquetted or not.

Cobalt and alloys containing:—

(1) 50 per cent. or more of cobalt, or

(2) 19 per cent. or more of cobalt together with 14 per cent. or more of chromium and less than 1 per cent. of carbon, or

(3) 19 per cent. or more of cobalt, together with 14 per cent. or more of chromium and 3 per cent. or more of molybdenum,

in crude or semi-fabricated forms, or scrap.

Germanium, in ribbon form, 2 inches or more in length, whether or not processed.

Hafnium and alloys containing more than 15 per cent. by weight of hafnium, in crude or semi-fabricated forms, or scrap.

Iron and steel, the following:—

Iron, steel and alloys of iron or steel, being iron, steel and alloys containing 50 per cent. or more of iron if—

(1) (*a*) armour plate

(*b*) precipitation hardening steels containing 4 per cent. or more of nickel; or

(2) containing one or more of the following constituents in the proportions stated:—

(*a*) 10 per cent. or more of molybdenum;

(*b*) 5 per cent. or more of molybdenum together with more than 14 per cent. of chromium;

(*c*) 6 per cent. or more of cobalt (other than permanent magnetic metals with a cobalt content of 25 per cent. or less and high speed tool steels containing up to 10 per cent. of cobalt, less than 5 per cent. of chromium and no nickel);

(*d*) 1·5 per cent. or more of niobium (columbium) or tantalum or both;

(*e*) 32 per cent. or more of nickel;

(*f*) 32 per cent. or more of alloying elements (other than iron) one of which is nickel, together with 0·4 per cent. or more of titanium, niobium (columbium) or tantalum,

in crude or semi-fabricated forms.

Lithium, the following:—

Raw materials.

Lithium in crude or semi-fabricated forms.

Magnesium alloys containing 50 per cent. or more of magnesium and one or more of the following constituents in the proportions stated:—

(1) 0·4 per cent. or more of zirconium;

(2) 1·5 per cent. or more of thorium;

(3) 1·0 per cent. or more of rare earth metals (cerium mischmetall);

in crude or semi-fabricated forms, or scrap.

Magnetic materials, the following:—

(1) Magnetic materials in all forms (including specialised forms such as core assemblies, laminations, stampings, tapes and wound cores) having any of the following characteristics:—

(*a*) initial permeability 50,000 or over;

(*b*) remanence 98 per cent. or over of maximum flux for materials having magnetic permeability;

(*c*) a composition capable of an energy product greater than 6 megagauss-oersteds, or containing more than 25 per cent. of cobalt.

(2) Grain oriented sheet or strip having either of the following characteristics (and core assemblies, laminations, stampings, tapes and wound cores composed of such sheet or strip :—

(*a*) a thickness of 0·008 inch or less ;

(*b*) a thickness greater than 0·008 inch and not exceeding 0·012 inch and having a core loss of 0·45 watt per pound or less when measured at a flux density of 13,000 gauss and a frequency of 50 cycles per second, or of 0·62 watt per pound or less when measured at a flux density of 15,000 gauss and a frequency of 50 cycles per second.

Minerals, raw and treated (including residues and tailings), containing more than 0·05 per cent. of uranium or thorium, singly or together, including but not limited to, the following :—

Monazite and monazite sands.

Ores containing thorium including uranothorianite.

Ores containing uranium including pitchblende.

Molybdenum, the following :—

Ferro-molybdenum, whether briquetted or not.

Molybdenum and alloys containing 50 per cent. or more of molybdenum, in crude or semi-fabricated forms (other than clean wire of a diameter not exceeding 500 microns and which, after having been fully annealed, has an elongation factor not exceeding 5 per cent. for diameters up to 200 microns and not exceeding 10 per cent. for diameters of between 200 and 500 microns).

Molybdenum pipes and tubing, platinum clad.

Nickel, the following :—

Raw materials.

Nickel powder with a particle size less than 200 microns, whether compacted or not.

Nickel-based alloys containing 32 per cent. or more of nickel, in crude or semi-fabricated forms or scrap, other than—

(1) nickel-copper alloys containing not more than 6 per cent. of other alloying elements ;

(2) electrical resistance materials in the form of wire, rod, tape or strip ;

(3) bi-metallic strip for thermostats ;

(4) thermocouple nickel-chrome wire within a diameter range of 0·2 millimetre to 5 millimetres both inclusive, containing less than 95 per cent. of nickel.

Wire of a diameter of 0·1 millimetre or less containing 95 per cent. or more of nickel, and wire mesh, woven, composed of wire containing 95 per cent. or more of nickel and containing 60 or more wires per linear centimetre.

Niobium (columbium), the following :—

Raw materials.

Ferro-niobium and ferro-niobium-tantalum, whether briquetted or not.

Niobium and alloys containing 50 per cent. or more of niobium or 60 per cent. or more of niobium-tantalum in combination, in crude or semi-fabricated forms, or scrap.

Platinum clad molybdenum pipes and tubing.

Silicon, the following :—

(1) of a purity of 99·9 per cent. or more ;

(2) in ribbon form, 2 inches or more in length, whether or not processed.

Tantalum, the following:—

Raw materials.

Ferro-tantalum and ferro-tantalum-niobium (columbium), whether briquetted or not.

Tantalum and alloys containing 60 per cent. or more of tantalum or 60 per cent. or more of tantalum-niobium (columbium) in combination, in crude or semi-fabricated forms, or scrap.

Thorium and alloys containing 1·5 per cent. or more of thorium, in crude or semi-fabricated forms.

Titanium and alloys containing 70 per cent. or more of titanium, in crude or semi-fabricated forms, or scrap.

Tungsten wire in any form, other than—

(1) cut coil filaments;

(2) uncoated wire of a thickness not exceeding 600 microns of which the tensile strength does not exceed 35 grammes per milligramme per 200 millimetres (140 kilograms per square millimetre);

(3) thoriated tungsten wire which is either of a diameter of 1 millimetre or more containing by weight 2 per cent. or less thorium oxide which is cut in lengths not exceeding 30 centimetres for welding purposes; or of a diameter of 50 microns or less containing by weight 1 per cent. or less thorium oxide.

In this entry—

Tensile strength is measured after drawing wire to a diameter of 180 microns for wire of greater diameter after heating for 10 minutes in a hydrogen atmosphere at 2,100° Centigrade.

A coated wire is a wire covered with an electron emitting layer or with an insulating material.

Uranium, the following:

(1) Ferro-uranium, whether briquetted or not.

(2) Uranium and alloys containing any percentage of uranium, in crude or semi-fabricated forms.

Zirconium, in which the ratio of hafnium content to zirconium content is less than one part to 500 parts by weight, the following:—

(1) Ferro-zirconium, whether briquetted or not.

(2) Zirconium and alloys containing more than 50 per cent. of zirconium in crude or semi-fabricated forms.

(3) Manufactures wholly of zirconium or of alloys containing more than 50 per cent. of zirconium.

GROUP 6

Engineering products

In this Group—

"a specified corrosion-resistant material" means polytetrafluoroethylene, polychlorotrifluoroethylene or metals or alloys containing—

(i) 90 per cent. or more of tantalum, titanium or zirconium, either separately or combined, or

(ii) 50 per cent. or more of cobalt or molybdenum, either separately or combined.

Ball or roller bearings, and parts thereof, the following:—

(1) Ball or cylindrical roller bearings (other than separable (magneto type)

ball bearings, needle roller bearings and ball thrust bearings) manufactured to tolerances specified in Part II of this Schedule or closer, and possessing one or both of the following characteristics:—

(*a*) made of any material other than:—

(i) low carbon steel containing not more than 0·4 per cent., of carbon and no other elements except those present as impurities or in such low quantities as not to modify the basic characteristics of the steel;

(ii) high carbon chromium steel type En 31 as specified in British Standard 970:1955 (wrought steels), or equivalent types normally used in the manufacture of ball or roller bearings;

(iii) nickel-molybdenum steel type En 34 as specified in British Standard 970:1955 (wrought steels), or equivalent types normally used in the manufacture of ball or roller bearings;

(*b*) processed by heat treatment for the purpose of stabilising them for use at normal operation temperatures over 150° Centigrade.

(2) Parts of ball or roller bearings, the following:—

Outer rings, inner rings, retainers, balls, rollers and sub-assemblies usable only for bearings described in head (1) of this entry.

Cables, the following:—

(1) Coaxial-type cables (including submarine types) designed for telecommunication and radar purposes other than those of a type designed or in common use for domestic radio and television receivers.

(2) Communication cable (including submarine cable) containing more than one pair of conductors and containing any conductor, single or stranded, exceeding 0·9 millimetre in diameter.

Compressors and blowers, multistage, with an overall compression ratio of 2:1 or more coupled with a capacity of over 372,000 cubic feet per minute, or an overall compression ratio of 3:1 or more coupled with a capacity of over 106,000 cubic feet per minute.

Containers, jacketted only, including mobile types, for the storage or transportation of liquid gases, the following:—

(1) of 500 gallons (1,893 litres) capacity or over, designed for liquid argon, fluorine, helium, hydrogen, nitrogen, oxygen or ozone, other than 2-shell containers rated for an average evaporation loss of over 5 per cent. per 24 hour period, such loss to be calculated as a percentage of the total liquid capacity of the container under ambient temperature conditions of 24° Centigrade or higher and without exposure to direct sunlight.

(2) of 250 gallons (946·5 litres) capacity or over, designed for liquid fluorine.

Counter-current solvent extractors, made of stainless steel, specially designed for the extraction of radio-active substances.

Equipment for the production or concentration of deuterium oxide.

Equipment for the working of silicon or germanium, the following:—

(1) Equipment specially designed for purifying and processing silicon or germanium, other than plant for the zone purification of germanium.

(2) Equipment specially designed for the production or processing of silicon or germanium in the form of ribbon 2 inches or more in length.

Furnaces, electric, the following:—

(1) Specially designed for the recovery of titanium or zirconium from scrap.

(2) Consumable electrode vacuum arc furnaces with a capacity in excess of 5 tons.

(3) Skull type vacuum arc furnaces.

(4) Electron beam vacuum furnaces.

(5) Cold crucible vacuum induction furnaces, designed to operate at pressures lower than 0·1 millimetre of mercury and at temperatures higher than 1,100° Centigrade, and specialised parts therefor.

Gas liquefying equipment, the following:—

(1) Equipment for the separation of helium from natural gases.

(2) Equipment specially designed for the production of gases in liquid form, capable of operating at pressures of 300 pounds per square inch gauge and over and producing one ton or more per day of gas in liquid form, other than—

(*a*) Plants not capable of producing more than 25 per cent. of their total daily product as extractable gas in liquid form.

(*b*) Plants specially designed for liquefying chlorine and ammonia.

(*c*) Stationary equipment for liquefying carbon dioxide.

(*d*) Equipment for liquefying low molecular weight refinery gases.

(3) Liquid fluorine producing equipment.

Machines and apparatus for the manufacture or testing of electronic valves, the following:—

(1) Machines and apparatus specially designed for the manufacture or testing of the kinds of electronic valves, transistors and crystal diodes (including components and sub-assemblies therefor) specified in Group 3.

(2) Machines and apparatus specially designed for the automatic or semi-automatic assembly of electronic valves, transistors and crystal diodes (including components and sub-assemblies therefor).

(3) Specialised testing equipment for use with the machinery and apparatus mentioned in sub-head (2).

Machines and apparatus of the kind used for making telecommunication cables, the following:—

(1) Machines of the kind specially designed for the manufacture of multi-pair electric cables for telecommunication purposes, the following:—

(*a*) Machines of the kind used for applying insulating material to conductors.

(*b*) Machines of the kind used for laying conductors together or for applying an insulating, separating, binding or identifying material thereto.

(2) Machines of the kind specially designed for the manufacture of coaxial electric cables, the following:—

(*a*) Machines of the kind used for applying insulating separators to the inner conductor of air-spaced coaxial electric cables.

(*b*) Machines of the kind used for applying metal strip or sheet to form the outer conductor of coaxial electric cables.

(3) Machines of the kind used for laying up or stranding conductors, pairs, quads, multiple units thereof, or coaxial tubes, to form complete cable covers or parts thereof.

(4) Automatic apparatus for controlling the diameter or the eccentricity of extruded dielectric on wires and cables.

Machines, apparatus and tools specially designed for the manufacture and testing of gas turbines, the following:—

(1) Compressor case boring machines.

(2) Compressor and turbine disc turning machines.

(3) Machines and apparatus for making or measuring gas turbine blades.

(4) Rotor grinding machines.

Machines for milling aircraft skin.

Machines, metalworking, the following:—

(1) Forging hammers, the following:—

(*a*) Counter-blow hammers of rated size of 180,825 foot pounds and over.

(*b*) Horizontal impact hammers, hydraulically actuated, of rated size of 10,000 foot pounds and over.

(2) Gear-making or gear finishing machinery, the following:—

(*a*) Gear-grinding machines, generating type, of 36 inches work diameter or over.

(*b*) Machines capable of the production of gears having a pitch finer than 0·5 module.

(3) Grinding machines, the following:—

(*a*) Internal grinding machines 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.

(*b*) Jig grinding machines possessing any traverse (longitudinal, transverse or vertical) exceeding 44 inches.

(4) Jig boring machines with any traversing motion (longitudinal, transverse or vertical) exceeding 44 inches.

(5) Machines incorporating electronic closed loop feed back controls in which a continuous feed back of information from the work piece or tool or work piece carrier or tool-holder itself results in continuous correction of the control commands.

(6) Presses, the following:—

(*a*) Presses actuated by explosives;

(*b*) Presses designed or re-designed for the working or forming of metals or alloys with a melting point exceeding 1,900° Centigrade;

(*c*) Presses, hydraulic or mechanical, of an effective operating pressure over 5,000 tons;

and control equipment and component parts specially designed therefor.

(7) Spin-forming machines designed for use with, or equipped with, spindle drive motor of 50 horse power or more.

Machines specially designed for the working or forming of aircraft sheet, aircraft plate or aircraft extrusions.

Machine tool parts, accessories and associated apparatus, the following:—

(1) Electronic closed loop feed back controls for controlling machine tools in which a continuous feed back of information from the work piece or tool or work piece carrier or tool-holder itself results in continuous correction of the control commands.

(2) Grinding heads and spindle assemblies for internal grinding machines, designed or rated for operation at speeds in excess of 120,000 revolutions per minute.

Marine steam boilers designed to operate at temperatures of 593° Centigrade and above.

Pipe and tubing (metal) lined with or covered with polytetrafluoroethylene or polychlorotrifluoroethylene.

Pipe valves, cocks and pressure regulators, either—

(1) designed to operate at temperatures below −130° Centigrade; or

(2) having all flow contact parts made of or lined with a specified corrosion-resistant material.

Presses, hydraulic or mechanical, for the working of ceramics, with an effective operating pressure of over 5,000 tons, and control equipment and component parts specially designed therefor.

Plant for the production of military explosives and parts specially designed therefor, including nitrators, continuous types.

Plant for the production of titanium metal (other than separate plant for the production of titanium tetrachloride) and parts specially designed therefor.

Plant for the production of zirconium (other than separate plant for the production of zirconium tetrachloride) and parts specially designed therefor.

Printed circuit equipment, the following:—

Equipment specially designed to produce electronic assemblies—

(*a*) by depositing or printing on insulating panels, including plates or wafers, or otherwise forming in situ, component parts other than basic wiring;

(*b*) by automatically inserting or soldering components on insulating panels, including plates or wafers, to which wiring is applied by printing or other means;

(*c*) by automatically or semi-automatically assembling, wiring or packaging the mounted insulating panels, including plates and wafers, mentioned in sub-heads (*a*) and (*b*).

Pumps, the following:—

(1) Pumps (other than slush, bottom hole and vacuum pumps) capable of delivering liquids separately or in combination with solids, gases, or solids and gases, and having any of the following characteristics:—

(*a*) designed to move molten metals by electromagnetic forces;

(*b*) designed to operate at temperatures below −130° Centigrade;

(*c*) all flow contact surfaces made of a specified corrosion-resistant material.

(2) Vacuum pumps, the following:—

(*a*) Ion vacuum pumps with pumping speeds of 800 or more litres of hydrogen per second at a pressure of 10^{-6} millimetre of mercury or more;

(*b*) Parts and accessories specially designed therefor.

Rolling mills of the kind used for the reduction of metal by rolling, the following:—

Sheet and strip mills—

(*a*) having automatic work roll adjustment controls for tapering or contouring along the length of the sheet or strip; or

(*b*) more than 3-high.

Mills specially designed or re-designed for the rolling of metals or alloys with a melting point exceeding 1,900° Centigrade;

and specialised controls and component parts (other than rolls and ancillary equipment) for the foregoing.

GROUP 7

Transport Equipment

Compression ignition (diesel) engines capable of developing 50 brake horse power and over and having a non-magnetic content exceeding 50 per cent. of their total weight.

Construction equipment built to military specifications, specially designed for airborne transportation.

Mechanically propelled vehicles, tractors and lift trucks, possessing or built to current military specifications differing materially from normal civilian specifications.

GROUP 8

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Miscellaneous

Alkyl polysulphide liquid polymers (other than water dispersions).

Dielectric materials (condenser tissues) coated or uncoated, other than paper, in the form of films, sheets or strips, of a thickness of 0·0015 inch or less, of a kind used in the manufacture of condensers capable of operating—

(*a*) over the whole range of ambient temperatures extending from below −45° Centigrade to above 100° Centigrade ; or

(*b*) at ambient temperatures of 200° Centigrade or higher.

Fluorinated silicone rubbers and other fluorinated elastomeric materials, and such organic intermediates for their manufacture as contain 10 per cent. or more of combined fluorine.

Fuels for aircraft engines, the following:—

Any liquid fuel, including petroleum products, which contains high energy components or compounds thereof, having a gross calorific value of not less than 23,400 British Thermal Units per pound.

Hydraulic fluids, synthetic, having a viscosity of not more than 4,000 centistokes at −54° Centigrade and not less than 1·5 centistokes at 150° Centigrade.

Lubricating oils and greases, synthetic, being or containing—

(1) esters of dibasic saturated aliphatic acids combined with one or more of the following:—

(*a*) saturated aliphatic monohydric alcohols, where both of the two constituents contain six or more carbon atoms, and

(*b*) polyglycols where one or both of the two constituents contain six or more carbon atoms ; or

(2) fluoro-alcohol esters ;

other than oils and greases containing either—

(*a*) 50 per cent. or more of neutral castor oil, or

(*b*) 5 per cent. or more of neutral castor oil and 50 per cent. or more of castor oil and petroleum oil together.

(3) polyphenyl ethers containing more than 3 phenyl groups.

Polychlorotrifluoroethylene and manufactures wholly thereof.

Polytetrafluoroethylene and manufactures wholly thereof.

Silicone fluids and greases, the following:—

(1) Halogenated silicone fluids.

(2) Lubricating greases capable of operating at temperatures of 180° Centigrade or higher and having a drop point of 220° Centigrade or higher.

PART II

Ball and roller bearings: tolerances for bore and outside diameter, eccentricity, parallelism of races and wobble (parallelism of track to faces) referred to in Group 6 of Part I of this Schedule.

1. INNER RING

Bore sizes

Inch type / Metric type	Over 0 including 0·4 in. / Over 0 including 10 mm.	Over 0·4 including 2 in. / Over 10 including 50 mm.	Over 2 including 3 in. / Over 50 including 80 mm.	Over 3 including 5 in. / Over 80 including 120 mm.	Over 5 including 7 in. / Over 120 including 180 mm.	Over 7 including 10 in. / Over 180 including 250 mm.	Over 10 in. / Over 250 mm.
Total bore tolerance (inches) ...	·0002	·00015	·0002	·00025	·0003	·0004	·0004
Eccentricity (inches)	·0002	·00015	·00015	·0002	·0003	·0003	·0004
Parallelism of races (inches)	·0002	·0001	·00015	·00015	·0002	·0002	·0003
Wobble or parallelism of track to faces (inches)	·0003	·00015	·00015	·0002	·0003	·0003	·0004

2. OUTER RING

Outside Diameter Sizes

Inch type / Metric type	For bore up to and incl. 0·04 in.	For bores over 0·4 in.						
	Over 0 incl. 2 in. / Over 0 incl. 50 mm.	Over 0 incl. 3 in. / Over 0 incl. 80 mm.	Over 3 incl. 5 in. / Over 80 incl. 120 mm.	Over 5 incl. 7 in. / Over 120 incl. 180 mm.	Over 7 incl. 10 in. / Over 180 incl. 250 mm.	Over 10 incl. 12 in. / Over 250 incl. 315 mm.	Over 12 incl. 16 in. / Over 315 incl. 400 mm.	Over 16 in. / Over 400 mm.
Total outside diameter tolerance (inches)	·0002	·0002	·0003	·0004	·0004	·0005	·0005	·0006
Eccentricity (inches)	·0002	·0002	·0002	·0003	·0004	·0004	·0005	·0006
Parallelism of races (inches)	·0002	·0001	·0002	·0002	·0003	·0003	·0003	·0004
Wobble or parallelism of track to faces (inches)	·0003	·0002	·0002	·0003	·0004	·0004	·0005	·0006

SECOND SCHEDULE

Albania.

Bulgaria.

China.

Czecho-Slovakia.

Hungary.

North Korea.

North Viet Nam, that is, all that part of Viet Nam north of a line running from the mouth of the Song Ben Hat River along the course thereof to the village of Bo Ho Su and thence due west to the frontier of Laos.

Poland.

Roumania.

Soviet Zone of Germany.

Tibet.

Union of Soviet Socialist Republics.

THIRD SCHEDULE

ORDERS REVOKED

The Strategic Goods (Control) Order, 1959.

The Strategic Goods (Control) (Amendment) Order, 1960(a).

EXPLANATORY NOTE

(This Note is not part of the Order, but is intended to indicate its general purport.)

This Order revokes and replaces the Strategic Goods (Control) Order, 1959, and the amendment thereto. It effects the following changes :—

1. Control is removed from refractory goods, specified valves with bellows seal, *mono*Chlorodifluoromethane, molybdenum disulphide, specified zirconium oxide, certain bearings, certain chemical plant and equipment, certain external surface broaching tools, specified deep hole drills and drilling machines, specified spin-forming machines, rock drill bits, specified aircraft fuels and high octane blending agents.

2. Control is imposed on specified cryogenic equipment, tritium and certain tritium compounds, specified ferritic materials, photographic systems for space vehicles, specified components of electronic computers, thermoelectric materials, specified manufactures of beryllium, specified calcium, hafnium metal and alloys and compounds, specialised parts of specified vacuum induction furnaces and on certain synthetic lubricants.

3. The descriptions of goods to which control applies have been amended in the case of centrifuges, dosimeters, electrolytic cells, heat exchangers, nuclear reactors, amplifiers, specified direction finding equipment, electronic computers, control equipment, electromagnetic waveguides and components, electronic and precision instruments and apparatus, cathode-ray oscilloscopes, electronic cathode-ray tubes, vacuum tubes and valves, measuring and counting apparatus, photo-electric cells, radio spectrum analysers, radio transmitters and transmitter amplifiers, recording and reproducing equipment, telegraph apparatus, molybdenum, nickel powder, niobium (columbium), tungsten wire, pumps, and centrifugal counter-current solvent extractors.

(a) S.I. 1960/1325 (1960 I, p. 1367).