Esterline Corporation
500 108th Avenue NE
Suite 1500
Bellevue, WA 98004

Tel: 425-453-9400
Fax: 425-453-2916
www.esterline.com
NYSE symbol: ESL

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13-C-RRB-001

Mr. Timothy Mooney
Department of Commerce
Bureau of Industry and Security
Regulatory Policy Division
14th and Pennsylvania Avenue , N.W.
Room 2099B
Washington, D.C. 20230

Subject: RIN 0694-AF64 Military Electronic Equipment

Dear Mr. Mooney:

Esterline Technologies Corporation supports the goals of the Export Control Reform (ECR) Initiative, and submits the following recommendations to simplify and make the reforms more efficient. Esterline is a manufacturer of a wide variety of parts and components for the aerospace and defense sector. We appreciate the opportunity to comment on the U.S. Department of Commerce's proposed treatment of electronic items formerly controlled under the USML.

Summary of Comments and Recommendations

This section outlines our main comments, each of which is explained more fully in the remainder of this letter. As noted in BIS commentary to the proposed rule, electronics are particularly susceptible to ambiguous classification. Esterline appreciates the difficulty faced by DDTC and BIS in resolving this ambiguity, and offers the following suggestions to assist in achieving Objective 1 of the ECR, to preclude multiple or overlapping controls of similar items within and across the two control lists, and also to reduce the administrative burden for minor items.

1. Define an order of precedence where multiple USML categories and/or CCL ECCNs may apply to the same item.
2. Remove parts and minor components in normal commercial use to which minor modifications have been made from all "catch-all" controls remaining on the USML and all "catch-all" controls in the CCL 600-series ECCNs. A definition for minor modifications is suggested.

3. Respect classification of items already decontrolled by commodity jurisdiction determination.
4. Implement a single harmonized ".y" list.
5. Modify license exception STA to address serious constraints on usability.
6. Clarify difference between military avionics vs. military electronics, and define avionics
7. Clarify electromagnetic interference policy

1. Define Order of Precedence

Defining a clear order of precedence that is easy to locate would improve the consistent understanding of correct export control classification by policy analysts, licensing officers, enforcement officers, customs officers, and industry.

Electronics are found in end items or enumerated systems and components in nearly all of the USML Categories and CCL 600-series ECCNs (see Table I

USML Cat.	ECR Rule		Possible Categories for Electronics (* indicates SME)	Parts Catch-All
	RIN	Fed. Reg.		
I	1400-AC90	Unpublished	I(h)	Unknown
II	1400-AD05	Unpublished	II(g), II(h), II(j)	Unknown
III	1400-AD04	Unpublished	III(d)	Unknown
IV	1400-AD19	Unpublished	IV(c), IV(h)	Unknown
V	1400-AD02	77 FR 25944	N/A	N/A
VI	1400–AC99	76 FR 80302	VI(c), VI(f)	No
VII	1400–AC77	76 FR 76100	VII(g)	No
VIII	1400–AC96	76 FR 68694	VIII(f), VIII(h)	Partial
IX	1400–AD15	77 FR 35317	IX(a), IX(b)	No
X	1400–AD16	77 FR 33698	X(d)(3)	No
XI	1400-AD25	77 FR 70958	XI(a), XI(b), XI(c)	No
XII	1400-AD32	Unpublished	XII(*a), XII(*b), XII(*c),XII(*d), XII(e)	Unknown
XIII	1400–AD13	77 FR 29575	XIII(b), XIII(j)(3), XIII(k)	No
XIV	1400-AD03	Unpublished	XIV(*f), XIV(k), XIV(l)	Unknown
XV	1400-AD33	Unpublished	XV(d), XV(e)	Unknown
XVI	1400-AD18	Unpublished	XVI(*a), XVI(*b), XVI(*c), XVI(d)	Unknown

XVII	1400-AD34	Unpublished	XVII(*a)	Unknown
XVIII	1400-AD35	Unpublished	XVIII(*a), XVIII(*b), XVIII(c), XVIII(d), XVIII(e)	Unknown
XIX	1400–AC98	76 FR 76097	XIX(e), XIX(f)	Partial
XX	1400–AD01	76 FR 80305	XX(c)	Yes

Note: where ECR rule is unpublished, possible categories that could cover electronics parts and components are shown from current USML. All of these categories currently contain a catch-all, but it remains unknown whether a catch-all will be included after the ECR rule is published.

Table II and Table II of this letter). In many cases the same item may be reasonably classified under any of multiple categories, because either:

a. The item's application pertains to multiple categories in the USML or CCL 600-series ECCNs;

b. The item has several integrated functions separately enumerated on the USML or CCL 600-series ECCNs; or

c. The item is common to higher assemblies in more than one USML category or CCL 600-series ECCN.

This ambiguity currently exists in the ITAR, but in most cases the various USML categories would result in no difference in licensing policy. An exception remains for electronics that may be SME; however, at present SME constitutes a small subset of all electronics controlled under the ITAR.

Under proposed rules, a specially designed item with several potential categories could be subject to multiple possible licensing policies depending on the classification decision: ITAR USML Significant Military Equipment (SME), ITAR USML non-SME, EAR CCL 600-series NS1 control, or EAR CCL 600-series AT1 control.

For example, a single control panel in the combat information center of a naval vessel might incorporate switches that engage or disengage a fire control computer, power a missile launcher, arm and launch the missile, and place a radar system in active or standby mode. Under existing regulations, the control panel could be reasonable classified under USML IV(h), VI(f), XI(c), or XII(e), all of which have the same licensing policy. Under proposed rules published to date, the control panel could be reasonably classified under USML IV(h), ECCN 8A609.x, USML XI(c), ECCN 3A611.x, or USML XII(e), with up to two different licensing policies. A specially designed indicator light on the control panel might therefore be reasonably classified under USML IV(h), ECCN 8A609.y.10, ECCN 3A611.x, or USML XII(e), now up to three different licensing policies.

In most case, order of precedence has not been documented. In a few circumstances, order of precedence has been established for certain subcategories within the USML or

under interpretations to the USML. For example, under RIN 1400-AD25, USML Category XII takes precedence over USML Category XI(a). These do not cover all situations, and are not consistently documented or easy to locate.

2. Parts and Minor Components in Normal Commercial Use

The USML categories inconsistently define "catch-all" controls for parts and components (including accessories and attachments), as shown in **Table I**

USML Cat.	ECR Rule		Possible Categories for Electronics (* indicates SME)	Parts Catch-All
	RIN	Fed. Reg.		
I	1400-AC90	Unpublished	I(h)	Unknown
II	1400-AD05	Unpublished	II(g), II(h), II(j)	Unknown
III	1400-AD04	Unpublished	III(d)	Unknown
IV	1400-AD19	Unpublished	IV(c), IV(h)	Unknown
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IX	1400–AD15	77 FR 35317	IX(a), IX(b)	No
X	1400–AD16	77 FR 33698	X(d)(3)	No
XI	1400-AD25	77 FR 70958	XI(a), XI(b), XI(c)	No
XII	1400-AD32	Unpublished	XII(*a), XII(*b), XII(*c),XII(*d), XII(e)	Unknown
XIII	1400–AD13	77 FR 29575	XIII(b), XIII(j)(3), XIII(k)	No
XIV	1400-AD03	Unpublished	XIV(*f), XIV(k), XIV(l)	Unknown
XV	1400-AD33	Unpublished	XV(d), XV(e)	Unknown
XVI	1400-AD18	Unpublished	XVI(*a), XVI(*b), XVI(*c), XVI(d)	Unknown
XVII	1400-AD34	Unpublished	XVII(*a)	Unknown
XVIII	1400-AD35	Unpublished	XVIII(*a), XVIII(*b), XVIII(c), XVIII(d), XVIII(e)	Unknown
XIX	1400–AC98	76 FR 76097	XIX(e), XIX(f)	Partial
XX	1400–AD01	76 FR 80305	XX(c)	Yes

Note: where ECR rule is unpublished, possible categories that could cover electronics parts and components are shown from current USML. All of these categories currently

contain a catch-all, but it remains unknown whether a catch-all will be included after the ECR rule is published.

Table II of this letter. The USML Categories not yet published for revision under the ECR retain for now the existing complete catch-all on specially designed parts and components. Under ECR as proposed, complete catch-all controls will continue for USML Category XX, and under Categories VIII and XIX continue for certain final aircraft or engine installations.

As a result, basic, simple, common hardware in normal commercial use (whether electronic, electrical, mechanical, hydraulic, or pneumatic) with minor off-catalog modifications or adaptations will be subject to widely varying controls. Thus, a common industrial electrical connector with modified solder terminals or a resistor with wires soldered to the leads could be controlled under any of the following licensing policies:

- ITAR USML Significant Military Equipment (SME),
- ITAR USML non-SME,
- EAR CCL 600-series NS1 control,
- EAR CCL 600-series AT1 control,
- EAR CCL other series control (various policies), or
- EAR99.

Thus, for items meeting the "specially designed" test of the ITAR and EAR, the licensing policy would vary widely depending on the assembly in which it is installed. . The use of variable catch-all controls and multiple, inconsistent ".y" lists is confusing and ambiguous.

Naturally, any ambiguity over the classification of the item in which a part is installed complicates this problem even further.

Compounding the problem for basic hardware manufacturers is the number of supply chain tiers between the hardware manufacturer and the manufacturer of the end item. The hardware manufacturer may know the item is eventually installed in a military fighter aircraft, but may not know installation details (aircraft, engine, or avionics) which could alter the export control classification under the proposed rules. Significant differences in export control policy will result from information not available to the hardware manufacturer.

Common industrial electronic, electrical, mechanical, hydraulic, or pneumatic hardware with minor modifications or adaptations do not warrant control under the ITAR and should be consistently transferred to the EAR. A list of basic hardware is proposed on Table III of this letter.

One of the most common minor adaptations to electronic and electrical parts is to solder a simple short interconnection of wire or of polyimide-insulated flexible circuit to its terminals, usually of length 30 cm or less, with or without an electrical connector. Other

common adaptations include substituting termination styles or pre-forming the part or component leads for a particular installation, affixing the part or component to a mount or a heat sink, or making small changes to flanges, mounting holes, shafts, or installation fasteners.

Today this needlessly results in ITAR control for items that are otherwise commercial components having ECCN EAR99. Under the proposed rule, a wide range of control policies could result. These kinds of minor adaptation should not result in either USML or CCL 600-series ECCN control.

A standard model manually-operated rotary switch, for example, should be consistently treated under the same export category, no matter what end item it was installed in, with or without a panel washer, whether or not it had a pigtail wire termination soldered to its leads, whether it had two contact decks or four, whether or not the terminals were sealed from solder flux, regardless of the angle of throw, regardless of shaft length, and no matter that certain switch positions were spring-loaded or locking. These types of adaptation are usual and customary for panel-mounted electronic parts, but cannot always be anticipated by catalog options.

Modifications and adaptations to basic hardware should be considered minor (and therefore not specially designed) if they:

a. are unclassified;

b. are not for the purpose of improving the hardware item's resistance or hardness to nuclear radiation, nuclear electromagnetic pulse, or resistance to chemicals or biological agents controlled under the ITAR; and

c. are not made to achieve special, designated military properties (e.g., special low-observable, acoustic, electromagnetic properties, hot section technology for military gas turbine engines, or characteristics identified in the proposed Supplement 4 to Part 740 of the EAR).

A consistent control policy for basic, simple, common hardware in normal commercial use would reduce the regulatory burden on the small and medium companies that manufacture these items. The suggested approach also supports national security concerns because, to be excluded from ITAR control and CCL 600-series control, (a) the unmodified item must be basic, simple hardware as listed on Table III of this letter and in normal commercial use, (b) modifications and adaptations resulting in sensitive military technology are excluded, and (c) existing MT, NP, NS, CB, and CW controls in the CCL for certain specialized versions of basic hardware such as valves and fittings would take precedence over the AT controls of CCL 600-series ".y" items.

Table I

USML Cat.	ECR Rule		Possible Categories for Electronics (* indicates SME)	Parts Catch-All
	RIN	Fed. Reg.		

I	1400-AC90	Unpublished	I(h)	Unknown
II	1400-AD05	Unpublished	II(g), II(h), II(j)	Unknown
III	1400-AD04	Unpublished	III(d)	Unknown
IV	1400-AD19	Unpublished	IV(c), IV(h)	Unknown
V	1400-AD02	77 FR 25944	N/A	N/A
VI	1400–AC99	76 FR 80302	VI(c), VI(f)	No
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XIV	1400-AD03	Unpublished	XIV(*f), XIV(k), XIV(l)	Unknown
XV	1400-AD33	Unpublished	XV(d), XV(e)	Unknown
XVI	1400-AD18	Unpublished	XVI(*a), XVI(*b), XVI(*c), XVI(d)	Unknown
XVII	1400-AD34	Unpublished	XVII(*a)	Unknown
XVIII	1400-AD35	Unpublished	XVIII(*a), XVIII(*b), XVIII(c), XVIII(d), XVIII(e)	Unknown
XIX	1400–AC98	76 FR 76097	XIX(e), XIX(f)	Partial
XX	1400–AD01	76 FR 80305	XX(c)	Yes

Note: where ECR rule is unpublished, possible categories that could cover electronics parts and components are shown from current USML. All of these categories currently contain a catch-all, but it remains unknown whether a catch-all will be included after the ECR rule is published.

Table II

Former USML Cat.	ECR Rule		Possible ECCNs for Electronics
	RIN	Fed. Reg.	
I	0694-AF47	Unpublished	Likely: 0A601.x & .y, 0B601.a
II	0694-AF48	Unpublished	Likely: 0A602.x & .y, 0B602.a
III	0694-AF49	Unpublished	Likely: 0A603.x & .y, 0B603.a
IV	0694-AF56	Unpublished	Likely: 0A604.x & .y, 0B604.a, 9A604.x & .y, 9B604.a
V	0694-AF53	77 FR 25932	1B608.a & .x
VI	0694-AF42	76 FR 80282	8A609.x & .y, 8B609.a
VII	0694-AF17	76 FR 76085	0A606.x & .y, 0B606.a
VIII	0694-AF36	76 FR 68675	9A610.h, .l, .m, .n, .x, .& y; 9B610.a & .b
IX	0694-AF54	77 FR 35310	0A614.a & .x; 0B614.a & .x
X	0694-AF58	77 FR 33688	1A613.x, 1B613.a
XI	0694-AF64	77 FR 70945	3A611.*all*, 3B611.*all*
XII	0694-AF75	Unpublished	Unknown
XIII	0694-AF51	77 FR 29564	0A617.a,.b,.d,.e, & .y; 0B617.a
XIV	0694-AF52	Unpublished	Unknown
XV	Unknown	Unpublished	Unknown
XVI	Unknown	Unpublished	Unknown
XVII	Unknown	Unpublished	Unknown
XVIII	Unknown	Unpublished	Unknown
XIX	0694-AF41	76 FR 76072	9A619.b,.d, &.x; 9B619.a & .b
VI, XX	0694-AF39	76 FR 80291	8A620.c, .x, .y; 8B620.a & .b

Table III. Basic Hardware

Electrical and Electronic
Batteries
Capacitors
Display elements: cathode ray tubes, electroluminescent panels, liquid crystal panels, segmented or graphic light-emitting diode arrays
Circuit protection devices: electric fuses other than those specially designed for explosive detonation, circuit breakers, gas discharge tube arrestors, ground fault circuit interrupters, metal-oxide varistors, thermal cutoffs, transient-voltage suppressor diodes
Crystal units and microelectronic oscillators
Discrete semiconductor devices
Electric filters, baluns, and ferrites
Electric switches other than RF, diplexer, duplexer, or circulator switches
Electric transformers, inductors, and coils
Electrical connectors, sockets, crimps, and couplings and their associated hardware: terminals, contacts, guide pins, covers, strain reliefs, and backshells
Filtered and unfiltered panel knobs, indicators, switches, thumbwheels, buttons, dials, lamps, and multi-character readout displays
Fixed resistors and variable resistors, potentiometers, and rheostats
Fluorescent lamps inverters and ballasts
Heater elements
Jumpers and grounding straps
Meters, gauges, and indicator dials
Microcircuits, unless programmed using ITAR-controlled technical data or CCL 600-series controlled technology, or application-specific using ITAR-controlled technical data or CCL 600-series controlled technology
Lamps and lamp holders
Photovoltaic cells
Relays, contactors, and optoisolators
Solenoids
Speakers, buzzers, and microphones
Thermoelectric coolers
Touchpads and touchscreens
Vacuum tubes other than TWTs, klystron tubes, or tubes specially designed for articles enumerated in USML Category XII

Mechanical
Rings
Caps and plugs
Circuit board hardware: racks, card guides, handles, pullers, standoffs, spacers, and rails
Clamps and line blocks
Electronic component insulators, mounts, holders, clips, and spacers
Fan hardware: grills, air filters, and finger barriers
Fasteners: screws, bolts, rivets, rods, studs, threaded inserts, washers, nuts, nut plates, pins, clips, retaining rings, thumbscrews, knobs, turnbuckles
Flip-guards
Gaskets and O-Rings
Grommets and grommet strips
Heat sinks electrical and electronic components
Identification plates and nameplates
Latches and hinges
Magnets
Springs
Hydraulic, Pneumatic, Fuel & Lubrication
Gauges
Hoses, tubing, straight and unbent lines, and straight and unbent pipes
Fittings, couplings and clamps
Filters
Regulators
Switches
Valves

3. Respect for Prior Commodity Jurisdiction Rulings

Formal commodity jurisdiction (CJ) determinations already made prior to the ECR initiative should be respected. Formal ECCN determinations of items known to be subject to EAR prior to the ECR initiatives, whether obtained by CCATS or by CJ with BIS advice, should also be respected.

The U.S. Government has already determined that these items do not warrant control under the ITAR as it currently exists, and therefore do not warrant control under the CCL 600-series ECCNs. These items should not revert to the ITAR or to the CCL 600-series

ECCNs as a result of the ECR. An explicit statement to this effect is needed to prevent such inadvertent effects, improve the predictability of U.S. Government policy, prevent disruption of supply to the U.S. and allied armed forces, and prevent an increased commodity jurisdiction and classification workload to the U.S. Government.

Most export control classifications are made by self-determination. Responsible companies rely on formal CJ and CCATS determinations for a few products to establish U.S. Government policy toward products having an identical fact pattern. Otherwise, DDTC and BIS policy staff would be overwhelmed by industry requests for classification. It is therefore essential that Industry retain confidence in the underlying policy behind prior formal CJ and CCATS determinations.

4. Single Harmonized ".y" List

The multiple ".y" lists proposed for the CCL 600-series ECCNs result in confusing and ambiguous classification. Table IV of this letter illustrates how ECR rules proposed to date would inconsistently treat items on the ".y" lists.

For example, why are specially designed indicator lights controlled under ".x" for ECCN 3A611 (military electronics) and test equipment in CCL 600-series Group B ECCNs, but under ".y" for 9A610 (aircraft, cockpits only), 8A609 (surface vessels), and 8A620 (submarines)? Under 3A611, why are cathode ray tubes controlled as ".y" while indicator lights are controlled as ".x"? Why are minor aircraft cockpit controls eligible for .y treatment, but not the same type of controls at aircraft crew-stations outside the cockpit?

Test equipment under CCL 600-series Group B ECCNs, tend to be assembled from industrial grade items listed on Table IV of this letter, which may have minor alterations for installation or maintenance purposes. Test equipment parts and components should generally not be treated as ".x"

Further, basic hardware on the various .y lists may themselves be parts or components of other .y list items, creating additional ambiguity in classification. For example, a trackball contains electrical connectors. The ".y" list is better suited to more complex components and systems that are Basic hardware would be better treated as dual use items and not 600-series at all, in support of the stated ECR objective of higher walls around a smaller yard.

Multiple .y lists create an unnecessary burden in the classification of goods. Most items must be self-classified, because the U.S. Government capacity for formal CCATS is limited.

Policy treatment of basic items under the ".y" lists should be consistent and sensible. A single, consolidated ".y" list would be far preferable, and would reduce ambiguity in classification.

5. License Exception STA

U.S. part and component manufacturers are more likely to export their goods in support of a foreign defense program than a U.S. defense program. Major foreign defense programs in "STA-36" countries tend to have at least one customer outside the "STA-36" list of countries. As a result, license exception STA is of limited value to U.S. part and component manufacturers.

Some kind of formal allowance for use of license exception STA on a program basis would improve its usability.

6. Avionics vs. Electronics

Policy intent behind the lack of a Category 7 entry similar to 4A611, 5A611, and 6A611 is unclear. Logically, military avionics not controlled by ITAR would be expected in Category 7 of the CCL.

Further, the EAR contains no definition for "avionics." As a result, it can be difficult to correctly place items that could be considered under either Category 7 or Category 9. For example, the control panel for the anti-ice bleed air valves might belong under either Category 7 or Category 9 depending on whether it contains a digital circuit, even though the function performed is precisely the same.

A definition for "avionics" would be helpful to eliminate this ambiguity,

Finally, the policy implication of part and component n.e.s. catch-all controls in 7A994 and 9A991.d is unclear with the addition of a "specially designed" definition. These ECCNs do not cite "specially designed," yet have never been understood to control EAR99 items common to non-aircraft applications. This should be clarified.

7. Electromagnetic Interference Policy

In RIN 0694–AF36 (76 FR 68685) and RIN 0694–AF41 (76 FR 76072) the proposed Supplement No. 4 to Part 740 license would restrict license exception STA from Category 9 CCL 600-series .x electrical "equipment," "parts," and "components" "specially designed" for electro-magnetic interference (EMI)—i.e., conducted emissions, radiated emissions, conducted susceptibility and radiated susceptibility—protection of aircraft that conform to the requirements of MIL-STD-461.

Since the distinction between electrical and electronic parts and components is often unclear, and since they may be ambiguously classified, Esterline believes it is appropriate to comment on this proposed supplement here.

MIL-STD-461 is a poor criterion for determining when items specially designed for EMI compatibility are either (a) restricted from license exception STA, or (b) subject to any reason for control other than AT.

MIL-STD-461 exists in several historical versions that remain in effect for many existing military programs. The degree of EMI protection offered by MIL-STD-461 varies widely

by version, by the type of platform on which an item is installed, and by tailoring particular to the end item requirements.

In many cases, civil aviation standards RTCA DO-160 and EUROCAE ED 14 (and related FAA and EASA airworthiness requirements) offer performance equal or superior to MIL-STD-461. The EMI requirements for civil transport category helicopters are particularly severe in the area of High Intensity Radiated fields or HIRF (see 14 CFR 29.1317 and 14 CFR 29 Appendix E), yet many dual use parts and components specially designed to meet DO-160/ED 14 and 14 CFR 29 HIRF requirements are only subject to reason for control AT under the existing CCL (as this is necessary for the safe operation of civil aviation fleets).

Further, military programs outside the U.S. may use multinational or foreign standards rather than MIL-STD-461, such as NATO STANAGs, or United Kingdom Ministry of Defence DEFSTANs.

A better criterion would be a degree of EMI protection exceeding the equivalent civil requirements for the item.

Summary

Esterline believes that addressing order of precedence in classification, consistent treatment of basic hardware, respect for prior commodity jurisdiction rulings, and the other suggestions offered here would improve implementation of the ECR initiative. Please feel free to contact me if you have any questions concerning the recommendations outlined above.

Regards,

Richard R. Baldwin
Director, Ethics & Compliance
Esterline Technologies Corporation

Table IV

Description	0A606	0B606	0A614	0B614	0A617	0B617	1B608	1A613	1B613	3x611	3B611	8A609	8B609	8A620	8B620	9A610	9B610	9A619	9B619
Air, fuel, and oil manifolds																		.y.8	
Aircraft tires																.y.1			
Alternators and generators	.y.2																		
Analog cockpit gauges and indicators																.y.2			
Analog gauges and indicators												.y.12		.y.12					
Anchoring systems														.y.18					
Atmosphere control and monitoring equipment														.y.14					
Audio headphones, earphones, handsets, and headsets										.y.8									
Audio selector panels												.y.13		.y.13		.y.3			
Axles	.y.3																		
Batteries	.y.4																		
Bearing puller																			.y.1
Bearings (e.g., ball, roller, wheel)	.y.5																		
Brake system components (e.g., discs, rotors, shoes, drums, springs, cylinders, lines, and hoses)	.y.1																		
Cables, cable assembles, and connectors	.y.6																		
Cathode ray tubes (CRTs)										.y.2									
Check valves for hydraulic and pneumatic systems																.y.4			
Containers "specially designed" for defense articles or items controlled by a "600 series" ECCN					.y.1														
Cooling system hoses	.y.7																		
Crew rest equipment																.y.5			
Damage control equipment.														.y.20					
Ejection seat mounted survival aids																.y.6			
Electric connector backshells										.y.17									
Electric couplings										.y.1									
Electric fans										.y.4									
Electric fuses other than those specially designed for explosive detonation										.y.6									

Description	0A606	0B606	0A614	0B614	0A617	0B617	1B608	1A613	1B613	3x611	3B611	8A609	8B609	8A620	8B620	9A610	9B610	9A619	9B619
Electric switches other than RF, pressure, diplexer, duplexer, circulator, or isolator switches										.y.20									
Electric transformers										.y.22									
Electrical connectors										.y.3									
Emergency lighting												.y.11		.y.11					
Energy dissipating pads for cargo (for pads made from paper or cardboard)																.y.7			
Environmental control and monitoring equipment														.y.15					
Field generators "specially designed" for military use					.y.2														
Filtered and unfiltered cockpit panel knobs, indicators, switches, buttons, and dials																.y.23			
Filtered and unfiltered panel knobs, indicators, switches, buttons, and dials												.y.10		.y.10					
Filters and filter assemblies for hydraulic, oil and fuel systems												.y.3		.y.3		.y.8			
Fuel and oil filters																		.y.4	
Fuel lines and hoses																		.y.3	
Galleys																.y.9			
Galleys and related equipment												.y.4		.y.4					
Gaskets and o-rings	.y.9																		
Grid vacuum tubes										.y.7									
Heat sinks										.y.9									
Hydraulic and fuel hoses, straight and unbent lines, fittings, clips, couplings, and brackets												.y.5		.y.5					
Hydraulic and fuel hoses, straight and unbent lines, fittings, clips, couplings, nutplates, and brackets																.y.10			
Hydraulic system hoses, fittings, couplings, adapters, and valves	.y.10																		
Hydraulic, fuel, oil, and air filters, other than those controlled by ECCN 1A004	.y.8																		
Identification plates																		.y.7	
Intercom systems										.y.10									
Internal communications systems												.y.2		.y.2					
Joy sticks										.y.11									

Description	0A606	0B606	0A614	0B614	0A617	0B617	1B608	1A613	1B613	3x611	3B611	8A609	8B609	8A620	8B620	9A610	9B610	9A619	9B619
Latches and hinges	.y.11																		
Lavatories																.y.11			
Lavatories and sanitary systems												.y.6		.y.6					
Lead-acid and Nickel-Cadmium batteries																.y.24			
Life rafts																.y.12			
Lighting systems, fuses, and components	.y.12																		
Loudspeakers										.y.12									
Magnetic compass, magnetic azimuth detector												.y.7		.y.7		.y.13			
Material corrosion and fouling control systems														.y.19					
Medical facilities and related equipment												.y.8		.y.8					
Medical litter provisions																.y.14			
Mica paper capacitors										.y.13									
Microphones										.y.14									
Mirrors, cockpit																.y.15			
Mooring, towing and dry docking equipment														.y.17					
Oil lines and tubes																		.y.2	
Oil tank and reservoirs																		.y.1	
Passenger seats including palletized seats																.y.16			
Pneumatic hoses, fittings, adapters, couplings, and valves	.y.13																		
Potable water storage systems												.y.9		.y.9		.y.17			
Potentiometers										.y.15									
Power controlled searchlights and control units therefor, "specially designed" for military use, and "equipment" mounting such units; and "parts," "components" and "accessories and attachments" "specially designed" therefor					.y.3														
Propellers, propeller systems, and propeller blades used with reciprocating engines																.y.25			
Public address (PA) systems																.y.18			
Rheostats										.y.16									
Rotron fans										.y.5									
Seats, seat assemblies, seat supports, and harnesses	.y.14																		
Shims																		.y.6	

Description	0A606	0B606	0A614	0B614	0A617	0B617	1B608	1A613	1B613	3x611	3B611	8A609	8B609	8A620	8B620	9A610	9B610	9A619	9B619
Ship service hydraulic and pneumatic systems												.y.1		.y.1					
Solenoids										.y.18									
Speakers										.y.19									
Steel brake wear pads (does not include sintered mix or carbon/carbon materials)																.y.19			
Tires, except run flat	.y.15																		
Trackballs										.y.21									
Trash handling systems														.y.16					
Underwater beacons																.y.20			
Urine collection bags/pads/cups/pumps																.y.21			
Vacuum tubes other than TWTs, klystron tubes, or tubes specially designed for articles enumerated in USML Category XII										.y.23									
V–Band, cushion, "broomstick," hinged, and loop clamps																		.y.5	
Waveguide										.y.24									
Windows, except those for armored vehicles	.y.16																		
Windshield washer and wiper systems																.y.22			