

# Business Development: UAS Export Controls

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# Agenda

- ▶ What Are Export Controls and Why Do We Have Them?
  - ▶ US Export Controls
    - ▶ International Traffic in Arms Regulations (ITAR)
    - ▶ Export Administration Regulations (EAR)
  - ▶ Multilateral & Foreign Export Controls
- ▶ Export Controls Can Apply to UAS at Various Levels
  - ▶ Vehicle
  - ▶ Components and Accessories
  - ▶ Payload
- ▶ Enhanced Proliferation Control Initiative (EPCI) Export Controls
- ▶ Technology Transfer and “Deemed Exports”

# What Are Export Controls?

- ▶ Laws and Regulations that Limit Exports of Goods, Technology, and Software
- ▶ Limit Exports of Military Items and “Dual-Use” Items to Sensitive Destinations
- ▶ Whether a License Is Required Depends on:
  - ▶ Type of Item
  - ▶ Destination
  - ▶ End-User and End-Use
- ▶ Different Types of Authorizations
  - ▶ Individual License
  - ▶ License Exception/Exemption
  - ▶ No License Required

# Why Do We Have Export Controls?

- ▶ Most Export Controls Multilateral, Based on Treaties or Cooperative Arrangements
  - ▶ Wassenaar Arrangement = Protect Military and Civilian High Technology Items
  - ▶ Missile Technology Control Regime = Control Transfer of Long-Range Missiles and Unmanned Aircraft (UAS)
  - ▶ Nuclear, Chemical, Biological Weapons Conventions = Counter-Proliferation
- ▶ Some Export Controls Unilaterally Imposed by the United States
  - ▶ Anti-Terrorism = Deny Items to Terrorists
  - ▶ Embargoes = Economic Foreign Policy
  - ▶ Punishment = Deny US Products to “Bad Guys”

# What Can Export Controls Affect?

- ▶ Export Sales
- ▶ Domestic Sales
- ▶ Co-Development Projects
- ▶ Foreign Investment
- ▶ Internal Staffing



# US Export Controls

- ▶ International Traffic in Arms Regulations (ITAR), 22 CFR 120-130
  - ▶ Administered by Department of State, Directorate of Defense Trade Controls (DDTC)
  - ▶ Exports, Reexports, and Transfers of Items on US Munitions List
    - ▶ Hardware, Software, and Technology
  - ▶ Defense Services
    - ▶ Assistance with the Development, Production, and Use of Defense Articles
  - ▶ Brokering of Defense Articles and Services
  - ▶ Takes Precedence Over Other Regulations
  - ▶ License Required for All Destinations, With Very Few Exceptions
  - ▶ Manufacturers (Even If You Don't Export!), Exporters and Brokers Must Register and Pay Fees



# US Export Controls

- ▶ Export Administration Regulations (EAR), 15 CFR 730-774
  - ▶ Administered by Department of Commerce, Bureau of Industry and Security (BIS)
  - ▶ Items on Commerce Control List
    - ▶ Hardware, Software, and Technology
  - ▶ Proliferation-Related Activities
  - ▶ License Requirements Vary Based on Sensitivity of Item, Destination, End-Use, End-User
  - ▶ No Registration Requirements, No Brokering Regulations
- ▶ Economic Sanctions and Embargoes, 31 CFR 500-599
  - ▶ Administered by Department of the Treasury, Office of Foreign Assets Control (OFAC)
  - ▶ Cuba, Iran, Sudan, Terrorists, Narcotics Traffickers, Other Targeted Sanctions



# Multilateral & Foreign Controls

- ▶ Many Countries Participate in Multilateral Export Control Regimes
  - ▶ Treaties - Chemical Weapons Convention, Nuclear Nonproliferation Treaty, Firearms Convention
  - ▶ Voluntary Agreements - Wassenaar Arrangement, Missile Technology Control Regime, Australia Group
- ▶ UN Security Council Resolution 1540 Requires Member States to Adopt Export Controls
- ▶ Not All Countries Participate in All Regimes and Some Countries Don't Participate at All
- ▶ Each Country Implements Its Treaty or Regime Obligations as It Sees Fit
  - ▶ Can Create Inconsistencies
- ▶ Each Country Follows Its Own Licensing Policy



# US Export Controls on UAS

- ▶ Both the ITAR and the EAR Regulate UAS
- ▶ ITAR See-Through Concept
  - ▶ ITAR-Controlled Parts, Components, Payload Can “Infect” UAS with ITAR Jurisdiction, Even If Vehicle Is Not Military in Character
- ▶ Can Be Useful to Obtain Commodity Jurisdiction (CJ) Ruling to Confirm Whether UAS Is Subject to ITAR or EAR
- ▶ Can Be Useful to Obtain BIS Commodity Classification (CCATS) to Confirm Where EAR-Controlled UAS/Payload Classified on Commerce Control List
- ▶ ITAR Always Takes Precedence, So Only a CJ Is Definitive - CCATS Is Not a Jurisdictional Ruling

# Missile Technology (MT) Controls

- ▶ ITAR and EAR Licensing Requirements and Policy Guided by Missile Technology Controls
- ▶ Derived from Missile Technology Control Regime (MTCR) Commitments
- ▶ “MT” Controls Apply to All UAS with Range of 300 km or More
  - ▶ Range = Maximum Distance in Stable Flight as Measured by Projection of Trajectory Over Earth’s Surface
  - ▶ UAV Range Calculated as Maximum One-Way Distance Using Most Fuel Efficient Profile, Zero Wind
  - ▶ Limitations of Telemetry, Datalinks, Operational Restrictions, Other External Constraints NOT a Factor
- ▶ MT Category 1 = Payload Capacity 500 kg or More
  - ▶ Strictest Licensing Policy, Strong Presumption of Denial
- ▶ MT Category 2 = Payload Capacity Less Than 500 kg
  - ▶ Less Strict, But License Not Guaranteed
- ▶ ITAR Imposes License Requirement to All Destinations Anyway, MT Controls Affect Licensing Policy
- ▶ EAR MT Controls Impose License Requirement to All Destinations Except Canada
  - ▶ Cannot Use EAR License Exceptions (ex. TMP - Temporary Exports, RPL - Repair & Replacement)

# ITAR - Vehicle Level



- ▶ USML Category VIII - Military Aircraft
  - ▶ (a)(5) Unarmed military unmanned aerial vehicles (UAVs)
  - ▶ (a)(6) Armed unmanned aerial vehicles (UAVs)
  - ▶ (a)(10) Target drones
  - ▶ (f) Developmental aircraft funded by the Department of Defense via contract or other funding authorization, and specially designed parts, components, accessories, and attachments therefor.
- ▶ Issue: No Definition of What Makes an Unarmed UAS “Military”
  - ▶ Factors Include Range, Ceiling, Payload, Potential to Carry Weapons, Military/Intelligence Funding, Competitive Capabilities, USG “Gut Check”
  - ▶ Prudent to Obtain CJ to Confirm If Your UAS Has Potential Military Application, or Received DoD Funding Support

# EAR – Vehicle Level



CCL Export Control Classification Number (ECCN) 9A012

Non-military “Unmanned Aerial Vehicles,” (“UAVs”), unmanned “airships”, related equipment and “components”

a. “UAVs” or unmanned “airships”, designed to have controlled flight out of the direct ‘natural vision’ of the ‘operator’ and having any of the following:

a.1. Having all of the following:

a.1.a. A maximum ‘endurance’ greater than or equal to 30 minutes but less than 1 hour; and

a.1.b. Designed to take-off and have stable controlled flight in wind gusts equal to or exceeding 46.3 km/h (25 knots); or

a.2. A maximum ‘endurance’ of 1 hour or greater;

- ▶ *Range 300 km or More = MT Controls = License Required to All Destinations Except Canada, No License Exceptions*
- ▶ *Range Less than 300 km = National Security (NS) Column 1 = Authorization Required to All Destinations Except Canada, But May Be Able to Use License Exceptions*

*Decontrol Note: 9A012 does not control model aircraft or model “airships”.*

- ▶ *Issue: No definition of “model”, so may be difficult to apply this exclusion, but recent changes to 9A012.a.1 to focus on endurance and stability in high winds may be sufficient to eliminate hobbyist and civil UAS that do not pose a dual-use concern*

# EAR – Vehicle Level

## *9A012.a Technical Notes:*

- 1. For the purposes of 9A012.a, 'operator' is a person who initiates or commands the "UAV" or unmanned "airship" flight.*
- 2. For the purposes of 9A012.a, 'endurance' is to be calculated for ISA conditions (ISO 2533:1975) at sea level in zero wind.*
- 3. For the purposes of 9A012.a, 'natural vision' means unaided human sight, with or without corrective lenses.*

## *Definitions*

*"Aircraft".* (Cat 1, 7, and 9)--A fixed wing, swivelwing, rotary wing (helicopter), tilt rotor or tilt-wing airborne vehicle.

*"Airship".* (Cat 9) A power-driven airborne vehicle that is kept buoyant by a body of gas (usually helium, formerly hydrogen) which is lighter than air.

*"Unmanned aerial vehicle" ("UAV").* (Cat 9) Any "aircraft" capable of initiating flight and sustaining controlled flight and navigation without any human presence on board. In addition, according to section 744.3 of the EAR, unmanned air vehicles, which are the same as "unmanned aerial vehicles," include, but are not limited to, cruise missile systems, target drones and reconnaissance drones.

# EAR - Vehicle Level

9A120 Complete unmanned aerial vehicles, not specified in 9A012, having all of the following characteristics (see List of Items Controlled.)

a. Having any of the following:

a.1. An autonomous flight control and navigation capability; *or*

a.2. Capability of controlled-flight out of the direct vision range involving a human operator; and

b. Having any of the following:

b.1. Incorporating an aerosol dispensing system/mechanism with a capacity greater than 20 liters; *or*

b.2. Designed or modified to incorporate an aerosol dispensing system/mechanism with a capacity of greater than 20 liters.

► **MT Controls - Strictest Licensing Policy**

# EAR – Vehicle Level



9A991 “Aircraft”, n.e.s., and gas turbine engines not controlled by 9A001 or 9A101 and “parts” and “components,” n.e.s. (see List of Items Controlled).

b. Aircraft n.e.s.;

- ▶ Subject to “Anti-Terrorism” (AT) Controls
- ▶ License Required for Cuba, Iran, North Korea, Sudan, Syria, Crimea
- ▶ License Required for Military End-Uses in China
- ▶ License Required for Military End-Uses and End-Users in Russia, Venezuela

# ITAR - Parts, Components, etc.

## USML Category VIII - Military Aircraft

(d) Ship-based launching and recovery equipment specially designed for defense articles described in paragraph (a) ... and land-based variants thereof

(h) Aircraft parts, components, accessories, attachments, associated equipment and systems, as follows:

(h)(6) ... unmanned aerial vehicle (UAV) launching systems [i.e., for launching UAVs from aircraft]

(h)(12) Unmanned aerial vehicle (UAV) flight control systems and vehicle management systems with swarming capability (*i.e.*, UAVs interact with each other to avoid collisions and stay together, or, if weaponized, coordinate targeting)

► Plus other types of aircraft INS, guidance and propulsion items called out in paragraph (h)

## EAR Export Control Classification Number (ECCN) 9A610 (Quasi-ITAR)

t. Composite structures, laminates and manufactures thereof “specially designed” for unmanned aerial vehicles controlled under USML Category VIII(a) with a range equal to or greater than 300 km.

u. Apparatus and devices “specially designed” for the handling, control, activation and non-ship-based launching of UAVs or drones controlled by either USML paragraph VIII(a) or ECCN 9A610.a, and capable of a range equal to or greater than 300 km.

v. Radar altimeters designed or modified for use in UAVs or drones controlled by either USML paragraph VIII(a) or ECCN 9A610.a., and capable of delivering at least 500 kilograms payload to a range of at least 300 km.

w. Hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire systems) and attitude control equipment designed or modified for UAVs or drones controlled by either USML paragraph VIII(a) or ECCN 9A610.a., and capable of delivering at least 500 kilograms payload to a range of at least 300 km.



# EAR – Parts, Components, etc.

CCL Export Control Classification Number (ECCN) 9A012

b.3. Equipment or “components” “specially designed” to convert a manned “aircraft” or a manned “airship” to a “UAV” or unmanned “airship”, controlled by 9A012.a;

b.4. Air breathing reciprocating or rotary internal combustion type engines, “specially designed” or modified to propel “UAVs” or unmanned “airships”, at altitudes above 15,240 meters (50,000 feet).

9A110 Composite structures, laminates and manufactures thereof “specially designed” for 9A012 items that are controlled for MT reasons.

# EAR – Parts, Components, etc.

9A101 Turbojet and turbofan engines, other than those controlled by 9A001, as follows (see List of Items Controlled).

b. Engines designed or modified for use in “missiles”, regardless of thrust or specific fuel consumption.

*Related Controls:* 9A101.b controls only engines for non-military unmanned air vehicles [UAVs] or remotely piloted vehicles [RPVs], and does not control other engines designed or modified for use in “missiles”, which are “subject to the ITAR”

▶ Missile Technology Controls

9A102 ‘Turboprop engine systems’ “specially designed” for items controlled in 9A012 for MT reasons, and “specially designed” “parts” and “components” therefor, having a maximum power greater than 10 kW (achieved uninstalled at sea level static conditions using the ICAO standard atmosphere), excluding civil certified engines.

*Technical Note to 9A102: For the purposes of 9A102 a ‘turboprop engine system’ incorporates all of the following:*

a. *Turboshaft engine; and*

b. *Power transmission system to transfer the power to a propeller.*

▶ Missile Technology Controls

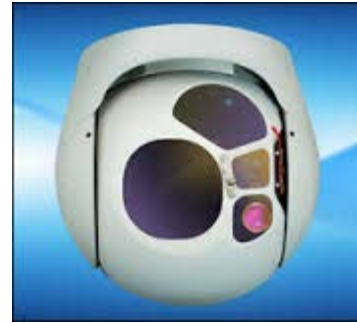
**Otherwise:**

9A991.d “Parts” and “components,” “specially designed” for “aircraft,” n.e.s.

▶ Anti-Terrorism Controls - License Required for Embargoed Countries, Prohibited End-Uses/End-Users

# ITAR- Payload

- ▶ USML Category XI - Military Electronics
  - (a)(3) - 29 Types of Radar, Lidar
  - (a)(4) - Electronic Warfare Systems
  - (a)(5) - Certain Military C3, C4, C4ISR Systems
  - (a)(7) Developmental electronic equipment or systems funded by the Department of Defense
- ▶ USML Category XII - Fire Control, Range Finder, Optical and Guidance and Control Equipment
  - ▶ Infrared Cameras, Laser Target Designators, Fire Control Systems
  - ▶ This Category is undergoing revisions, scope unclear = check with manufacturer
- ▶ If Vehicle and No Parts, Components, or Payloads Are Not Subject to ITAR => EAR



# EAR - Payload

- ▶ EAR Lacks “See-Through” Concept - Once Payload Incorporated, Control Is At Vehicle Level
- ▶ However, If You Use Components that Are Controlled at a Higher Level, It Can Affect
  - ▶ Licensing Policy
  - ▶ Provision of Spares & Replacements
- ▶ Usual Suspects
  - ▶ Infrared Cameras = 6A003
  - ▶ Avionics = 7A003, 7A103
  - ▶ Radar/Lidar = 6A008



# ITAR- Software & Technology

- ▶ Software and Development, Production, and Use Technology Directly Related to USML Items Is Controlled at the Same Level as the Item
- ▶ License Is Required for All Countries and All Foreign Nationals

# EAR - Software & Technology

9D004.e. "Software" "specially designed" or modified for the operation of items specified by 9A012 [Long-Range/Endurance UAS]

- ▶ National Security Column 1 Controls

9D104 "Software" specially designed or modified for the "use" of equipment controlled by ECCN ... 9A012 (for MT controlled items only), 9A101 (except for items in 9A101.b that are "subject to the ITAR"...

- ▶ Missile Technology Controls

9E001/9E101/9E102

Controls Development, Production and Certain Use Technology for 9A012, 9A101, 9A102, 9A110, 9D004, 9D104

- ▶ National Security Column 1/Missile Technology, as Applicable

# Technology Transfer & Deemed Exports

- ▶ The ITAR and EAR Control Technology Transfers
- ▶ For ITAR and More Sensitive EAR, Means License Required to Transfer Controlled Technology to All Destinations and Foreign Nationals (Except Canada for EAR)
- ▶ Includes So-Called “Deemed Exports”
  - ▶ Release of Controlled Technical Data to Foreign Nationals in United States, Including Employees
  - ▶ Foreign National: Anyone Who Is NOT US Citizen, Permanent Resident, Protected Person (e.g., Asylee, Refugee)
  - ▶ Foreign National: Anyone in US on a Visa: H-1B, L-1, F-1, O-1, etc.
- ▶ Special Deemed Export Licensing on Individual Employee Basis in United States
- ▶ Can Obtain Site Licenses for Foreign Locations

# Enhanced Proliferation Control Initiative (EPCI)

- ▶ All Items - Regardless of Classification - Require Export/Reexport/Retransfer License If They:
  - ▶ Will Be Used in Design, Development, Production or Use of Rocket Systems or UAVs Capable of a Range of at Least 300 km in or by a Country in Country Group D:4
  - ▶ Will Be Used Anywhere (except NPT/NATO Nuclear Weapons States) in Design, Development, Production or Use of Rocket Systems or UAVs for the Delivery of WMDs
  - ▶ Will Be Used in Design, Development, Production or Use of Rocket Systems or UAVs in or by a Country in Country Group D:4, but You Are Unable to Confirm Range/Payload or WMD Use
- ▶ Country Group D:4 = Bahrain, China (PRC), Egypt, Iran, Iraq, Israel, Jordan, North Korea, Kuwait, Lebanon, Libya, Macau, Oman, Pakistan, Qatar, Saudi Arabia, Syria, UAE, Yemen



# UAS Export Controls - Tough Issues



- ▶ Unclear Definition of “Military” UAS
  - ▶ Not Only Determined by Range and Payload
  - ▶ Even Small UAS Could Qualify If Significant Military or Intelligence Applications
  - ▶ ITAR Jurisdiction Has Major Impact on Exportability
- ▶ Developing Licensing Policies for Civilian End-Use of EAR Controlled UAS
  - ▶ USG - Like All of Us - in the Process of Coming to Grips with the Scope of Civil End-Use
  - ▶ Difficult to Assess Risk of Diversion to Foreign Militaries, Potential Terrorist End-Use

# Licensing Policy

- ▶ Stringent Standards for Sale, Transfer, and Use of US-Origin Military UAS, Including Armed systems
  - ▶ Sensitive Systems Must Go through Foreign Military Sales Program
  - ▶ All U.S.-Origin Military UAS Recipients Must Agree to Principles of Proper End-Use
  - ▶ End-Use Assurances and Other Possible Security Measures
  - ▶ No Exports to China, Other Arms Embargo Countries
- ▶ Commercial UAS Reviewed under Licensing Policies Described in EAR 742.5, Including
  - ▶ Specific Nature of End-use
  - ▶ Contribution to Design, Development, Production, or Use of Missiles/UAS
  - ▶ Capabilities and Objectives of Missile and Space Programs of Recipient Country
  - ▶ Nonproliferation Credentials of Recipient Country
  - ▶ Types of Assurances or Guarantees against Design, Development, Production, or Use of Missiles
  - ▶ Existence of Pre-Existing Contract

# Licensing



- ▶ Not Just Getting Your Ticket Punched
- ▶ ITAR Licenses Submitted to State Department, EAR Licenses Submitted to Commerce Department
- ▶ Licensing Decisions Made on the Basis of National Security, Foreign Policy, Regional Stability
- ▶ Input from Commerce, State, Defense, Energy, Homeland Security, NASA, Intelligence Community
  - ▶ Agencies Seek Consensus
  - ▶ If You Have Allies in the Agencies, Talk to Them
- ▶ Processing Times Range from 4-6 Weeks to Never

# Q&A





## Export Controls and Sanctions Team

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