



DGP-WG/22-IP/14  
28/12/22

**DANGEROUS GOODS PANEL (DGP)  
WORKING GROUP MEETING (DGP-WG/22)**

**Montréal, 21 to 25 November 2022**

**Agenda Item 4: Managing safety risks posed by the carriage of lithium batteries by air (Ref: Job Card DGP.003.04)**

**U.S. IMPORT-EXPORT DATA ON UN3480/UN3481/UN3090 BASED ON HARMONIZED  
TARIFF SYSTEM (HTS) AND HARMONIZED TARIFF SCHEDULE OF THE UNITED  
STATES**

(Presented by the Secretary)

**SUMMARY**

Attached is the presentation delivered to DGP-WG/22 on U.S. Import-export data on UN3480/UN3481/UN3090 based on harmonized tariff system (HTS) and harmonized tariff schedule of the United States.





# **ICAO Dangerous Goods Panel Energy Storage Devices Working Group**

**U.S. Import-Export Data on UN3480/UN3481/UN3090  
based on Harmonized Tariff System (HTS) and  
Harmonized Tariff Schedule of the United States**

**November 22, 2022**

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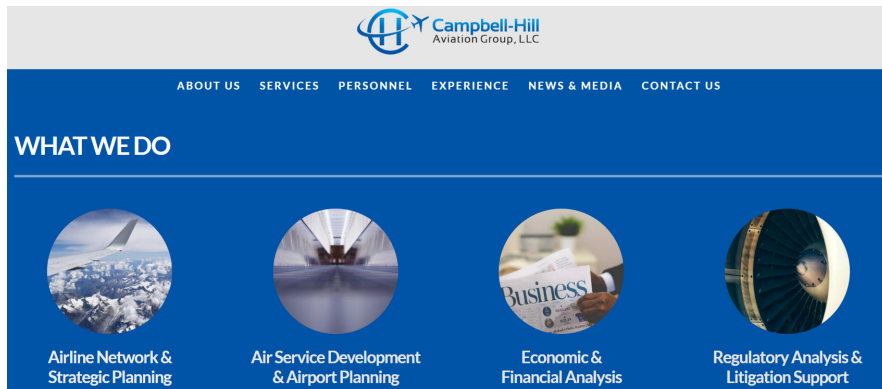
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# PRBA and Campbell-Hill Aviation Group



- PRBA and [Campbell-Hill Aviation Group](#) have tracked since 2010 imports into the U.S. and exports/re-exports from the U.S. of lithium ion and lithium metal cells and batteries (UN3480/UN3090) and lithium ion battery-powered products (UN3481)
- Data are compiled from the U.S. Bureau of the Census trade data
- Census data identifies shipment value, weight, and number of products that enter/exit a U.S. point via air from/to a foreign point

# The Harmonized System

- The Harmonized System (“HS”) is a hierarchical nomenclature system established by the World Customs Organization (WCO) for describing and classifying internationally traded goods based on their composition, function, and/or name
- The HS is divided into 21 Sections, which are further divided into 97 Chapters, each of which is assigned a 2-digit code (e.g., Chapter 01, Chapter 95)
- Each Chapter contains multiple 4-digit tariff headings, which are subdivided into 6-digit “subheadings”

# The Harmonized System

85 07 60  
Chapter Heading Subheading

- In this example of a six-digit subheading:
  - 85 indicates Chapter 85, covering electrical machinery
  - 07 indicates heading 8507, covering electric storage batteries
  - 60 indicates subheading 8507.60, covering lithium-ion batteries

# The Harmonized Tariff Schedule of the United States



- The Harmonized Tariff Schedule of the United States (“HTSUS”) is based on the HS
- The HTSUS includes the HS’s 21 Sections and 97 Chapters, and same 4-digit headings and 6-digit subheadings in each Chapter
- Beyond the 6-digit level, **the United States breaks out its classifications into 8-digit “tariff lines” and 10-digit “statistical breakouts” to more specifically identify products for duty and statistical purposes**

# The Harmonized Tariff Schedule of the United States



- Beyond the HS's 21 Sections and 97 Chapters, the HTSUS contains an additional, 2-Chapter Section relating to U.S.-specific specialty classifications and temporary tariff modifications
- Each Section and Chapter within the HTSUS provides a broad explanatory title to guide classification, as well as notes that specify what each Section and Chapter covers or excludes
- The HTSUS also identifies the rates of duty applicable to each classification



# The Harmonized Tariff Schedule of the United States



85 07 60 00 20  
Chapter Heading Subheading Tariff Line Statistical Breakout

- In this example of a full, 10-digit provision:
  - 6-digit subheading (8507.60) covers lithium-ion batteries
  - 00 indicates tariff line 8507.60.00, with a scope identical to subheading 8507.60
  - 20 indicates statistical breakout 8507.60.0020, covering lithium-ion batteries other than those of a kind used to propel electric vehicles

# The Harmonized Tariff Schedule of the United States – Lithium ion Batteries



Heading/ Subheading	Stat. Suf- fix	Article Description	Unit of Quantity	Rates of Duty		
				1		2
				General	Special	
8507.60.00		Lithium-ion batteries:.....		3.4% <sup>8/</sup>	Free (A, AU, B, BH, C, CL, CO, D, E, IL, JO, KR, MA, OM, P, PA, PE, S, SG)	40%
	10	Of a kind used as the primary source of electrical power for electrically powered vehicles of subheadings 8703.40, 8703.50, 8703.60, 8703.70 or 8703.80.....	No. kg			
	20	Other.....	No. kg			

## HTSUS Classification

Chapter 85  
Heading 8507  
Subheading 8507.60  
Tariff Line 8507.60.00  
Statistical Breakout 8507.60.0020

## Product Description

## Duty Rates

Column 1-General: the standard duty rate (footnote points to applicable temporary tariff modifications)

Column 1-Special: rate under specific free trade agreements

Column 2: rate for countries not accorded "most favored nation" status (e.g., Russia, North Korea, Cuba, etc.)



# The Harmonized Tariff Schedule of the United States



85	17	13	00	00
└─┘	└─┘	└─┘	└─┘	└─┘
Chapter	Heading	Subheading	Tariff Line	Statistical Breakout

- In this example of a full, 10-digit provision:
  - 6-digit subheading (8517.13) **covers smartphones**
  - First 00 indicates tariff line 8517.13.00, with a scope identical to subheading 8517.13.00
  - Second 00 indicates statistical breakout 8517.13.0000, with a scope identical to the subheading and tariff line

# The Harmonized Tariff Schedule of the United States – Smartphones



Heading/ Subheading	Stat. Suf- fix	Article Description	Unit of Quantity	Rates of Duty		
				1		2
				General	Special	
8517		Telephone sets, including smartphones and other telephones for cellular networks or for other wireless networks; other apparatus for the transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network), other than transmission or reception apparatus of heading 8443, 8525, 8527 or 8528; parts thereof: Telephone sets, including smartphones and other telephones for cellular networks or for other wireless networks :				
8517.11.00	00	Line telephone sets with cordless handsets.....	No.....	Free <sup>8/</sup>		35%
8517.13.00	00	Smartphones.....	No.....	Free		35%

## HTSUS Classification

Chapter 85  
Heading 8517  
Subheading 8517.13  
Tariff Line 8517.13.00  
Statistical Breakout 8517.13.0000

## Product Description

## Duty Rates

Column 1-General: the standard duty rate  
Column 1-Special: rate under specific free trade agreements (none here because the standard duty rate is 0%)  
Column 2: rate for countries not accorded "most favored nation" status (e.g., Russia, North Korea, Cuba, etc.)

## U.S. Trade Data for UN3480, UN3481, UN3090

Table 2-1  
U.S. Trade Value for Affected Products (2021)

	Total (millions)	Air (millions)	% of Total
<b>U.S. Imports</b>			
Cellphones & Related Products	\$103,455	\$87,411	84%
Notebook and Handheld Computers	\$59,807	\$53,435	89%
Audio & Video Equipment	\$9,390	\$5,617	60%
Hand Power Tools	\$5,441	\$338	6%
Other Electronic Products	\$10,947	\$4,543	42%
Combined Total	\$189,041	\$151,344	80%
<b>Lithium Ion Batteries</b>	\$11,201	\$1,132	10%
<b>Lithium Metal Batteries</b>	\$358	\$120	34%
	\$11,559	\$1,252	11%
<b>U.S. Exports and Re-Exports</b>			
Cellphones & Related Products	\$27,844	\$22,664	81%
Notebook and Handheld Computers	\$7,547	\$4,207	56%
Audio & Video Equipment	\$1,946	\$1,040	53%
Hand Power Tools	\$471	\$31	7%
Other Electronic Products	\$4,058	\$3,011	74%
Combined Total	\$41,867	\$30,953	74%
<b>Lithium Ion Batteries</b>	\$1,828	\$290	16%
<b>Lithium Metal Batteries</b>	\$458	\$297	65%
	\$2,285	\$587	26%
<b>Combined Total - All Trade</b>	<b>\$244,752</b>	<b>\$184,136</b>	<b>75%</b>
Source: U.S. Bureau of the Census trade data			

Table 2-2  
U.S. Air Trade Volumes for Affected Products (2021)

	Units (millions)	Shipments (000)	Units per Shipment	Kilograms per Shipment	Value per Unit
<b>U.S. Imports</b>					
Cellphones & Related Products	411.0	872.6	471	205	\$213
Notebook and Handheld Computers	108.3	997.4	109	220	\$493
Audio & Video Equipment	49.1	127.2	386	279	\$114
Hand Power Tools	2.5	24.6	102	353	\$134
Other Electronic Products	25.8	270.4	96	124	\$176
Combined Total	596.7	2,292.3	260	208	\$254
<b>Lithium Ion Batteries</b>	196.4	81.3	2,416	318	\$6
<b>Lithium Metal Batteries</b>	35.6	3.9	9,228	366	\$3
	232.0	85.1	2,724	320	\$5
<b>U.S. Exports and Re-Exports</b>					
Cellphones & Related Products	156.4	398.5	392	126	\$145
Notebook and Handheld Computers	9.6	100.4	95	184	\$439
Audio & Video Equipment	3.0	46.5	64	74	\$350
Hand Power Tools	0.3	2.4	110	387	\$118
Other Electronic Products	8.1	88.6	92	136	\$371
Combined Total	177.3	636.4	279	134	\$175
<b>Lithium Ion Batteries</b>	6.1	18.1	335	175	\$48
<b>Lithium Metal Batteries</b>	6.7	8.8	757	99	\$44
	12.8	26.9	474	150	\$46
<b>Combined Total - All Trade</b>	<b>1,018.8</b>	<b>3,040.8</b>	<b>335</b>	<b>195</b>	<b>\$181</b>
Source: U.S. Bureau of the Census trade data and Campbell-Hill Aviation Group					



Source: U.S. Bureau of the Census trade data and Campbell-Hill Aviation Group

U.S. Trade <b>Value</b> for UN3481 Products (2021)			
	Total	Air	% of
	(millions)	(millions)	Total
<b>U.S. Imports</b>			
Cellphones & Related Products	\$103,455	\$87,411	84%
Notebook and Handheld Computers	\$59,807	\$53,435	89%
Audio & Video Equipment	\$9,390	\$5,617	60%
Hand Power Tools	\$5,441	\$338	6%
Other Electronic Products	\$10,947	\$4,543	42%
Combined Total	\$189,041	\$151,344	80%

Source: U.S. Bureau of the Census trade data and Campbell-Hill Aviation Group

### U.S Air Trade **Volumes** for UN3481 Products (2021)

	Units	Shipments	Units per	Kilograms	Value
	(millions)	(000)	Shipment	per Shipment	per Unit
<b>U.S. Imports</b>					
Cellphones & Related Products	411.0	872.6	471	205	\$213
Notebook and Handheld Computers	108.3	997.4	109	220	\$493
Audio & Video Equipment	49.1	127.2	386	279	\$114
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Other Electronic Products	25.8	270.4	96	124	\$176
Combined Total	596.7	2,292.3	260	208	\$254

Source: U.S. Bureau of the Census trade data and Campbell-Hill Aviation Group

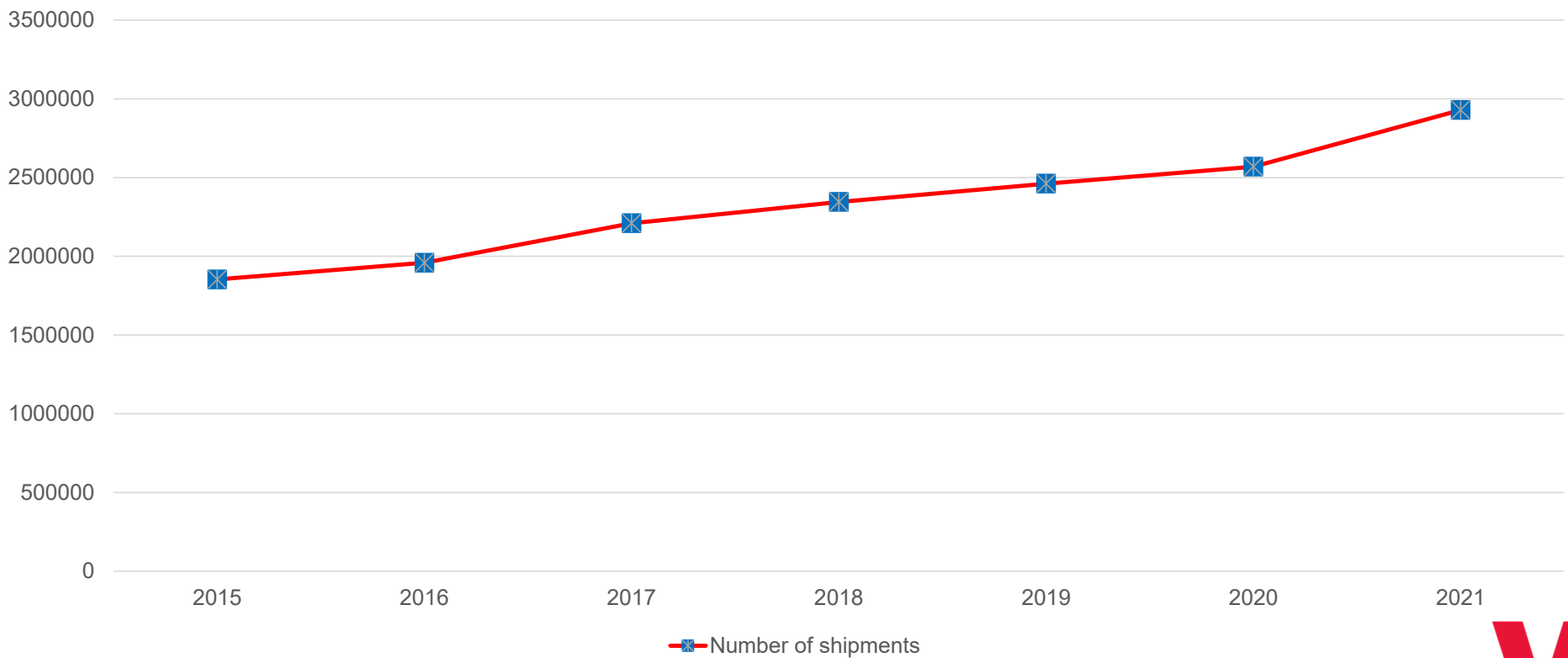
### U.S Air Trade **Volumes** for UN3481 Products (2021)

	Units	Shipments	Units per	Kilograms	Value
	(millions)	(000)	Shipment	per Shipment	per Unit
<b>U.S. Exports and Re-Exports</b>					
Cellphones & Related Products	156.4	398.5	392	126	\$145
Notebook and Handheld Computers	9.6	100.4	95	184	\$439
Audio & Video Equipment	3.0	46.5	64	74	\$350
Hand Power Tools	0.3	2.4	110	387	\$118
Other Electronic Products	8.1	88.6	92	136	\$371
Combined Total	177.3	636.4	279	134	\$175

Source: U.S. Bureau of the Census trade data and Campbell-Hill Aviation Group



# UN3481 Imports to and Exports/ Re-Exports from U.S. by Air (2015 – 2021)

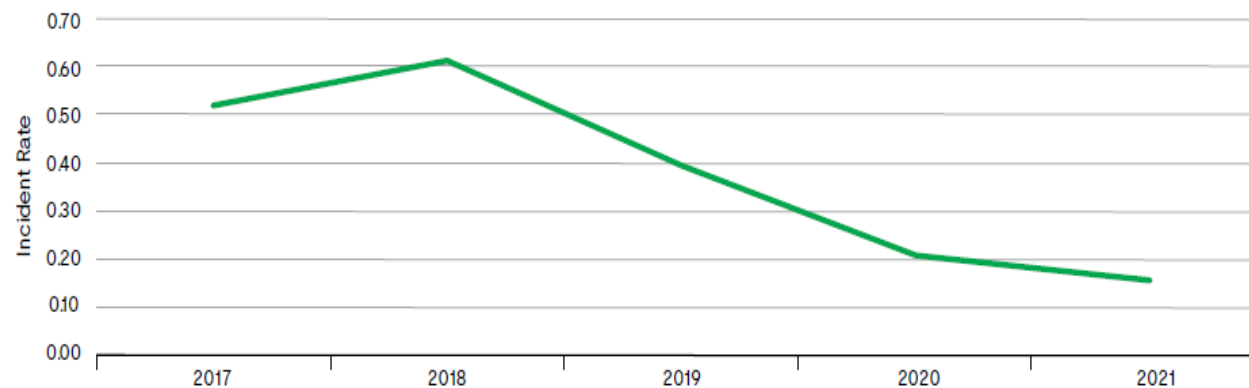


Source: U.S. Bureau of the Census trade data and Campbell-Hill Aviation Group

# TRIP Database and Cargo Thermal Events



Incident Rate Thermal incidents per Billion Revenue-Ton-Miles



*“Cargo incident frequency is trending downward across increasing cargo volumes. Both the absolute value of incidents in cargo operations reported by TRIP participants have fallen as well as the rate of these incidents normalized by the volume of cargo carried.”*

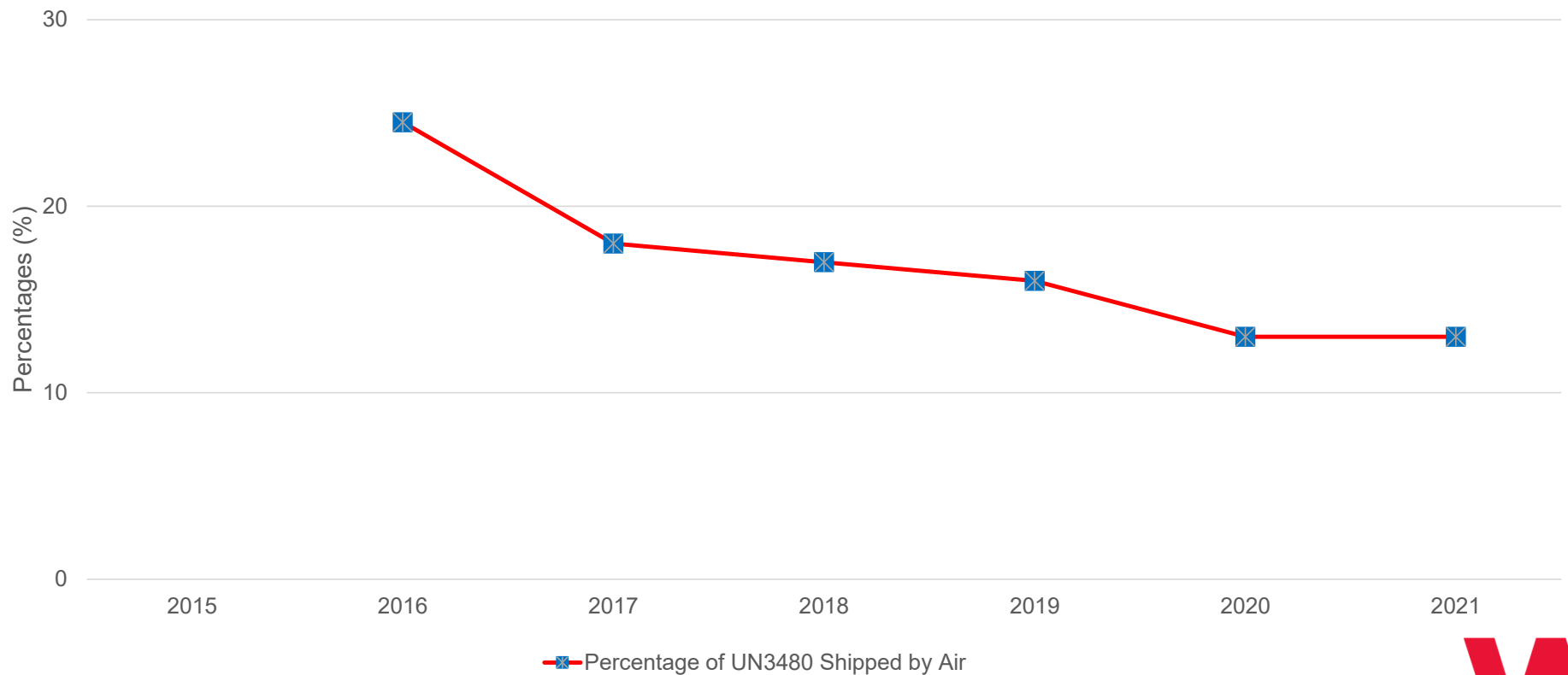
Source: TRIP Annual Report - 2021



## Summary for UN3481

- The number of UN3481 U.S. air shipments (imports to and exports/re-exports from U.S.) increased from 1,853,000 to 2,929,000 between 2015 – 2021
- Data do not account for domestic air shipments (within U.S.)
- PRBA data aligns with TRIP data that show increasing cargo volumes between 2017 and 2021
- **Cargo incident frequency is trending downward per TRIP data even with increased cargo volumes**
- **Changing how UN3481 are regulated in air transport per the ICAO TI (e.g., place a state of charge limit on UN3481 shipments) is not supported by the data**

# Overall Percentage of UN3480 Imports to and Exports/Re-Exports from U.S. by Air (2016 – 2021)



Source: U.S. Bureau of the Census trade data and Campbell-Hill Aviation Group

**Table 2-2**  
**U.S Air Trade Volumes for Affected Products (2021)**

		Units	Shipments	Units per	Kilograms	Kilograms	Value	Value
		(millions)	(000)	Shipment	(millions)	per Shipment	(millions)	per Unit
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>U.S. Imports</b>								
Cellphones & Related Products		411.0	872.6	471	178.8	205	\$87,411	\$213
Notebook and Handheld Computers		108.3	997.4	109	219.4	220	\$53,435	\$493
<b>Columns</b>								
(1)	Estimated using average weight per unit factors for HS commodities with unit counts as "unit of quantity" and a high share of trade via air.							
(2)	Estimated using average units per shipment factors for HS commodities with unit counts as "unit of quantity" and a high share of trade via air.							
(3)	Column 1 / (Column 2 * 1,000)							
(4)	Census totals adjusted to include estimates for cross-border air trade using Canadian and Mexican airports.							
(5)	Column 4 / (Column 2 * 1,000)							
(6)	Census totals adjusted to include estimates for cross-border air trade using Canadian and Mexican airports.							
(7)	Column 6 / Column 1							
Source: U.S. Bureau of the Census trade data and Campbell-Hill Aviation Group								