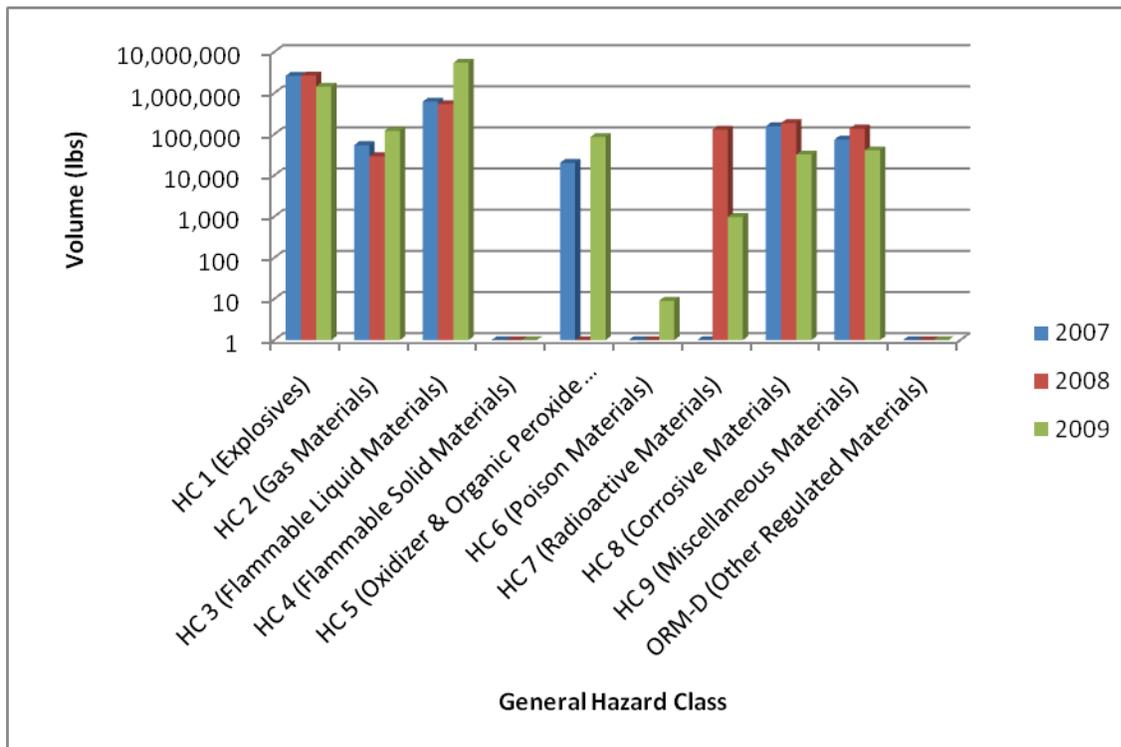


5. ANALYSIS BY SUBAREA

5.1 Southeast Alaska

Transportation of hazardous materials within the Southeast Alaska Subarea (SEAK) was primarily via marine transportation mode through inside passage route(s). Some shipments reportedly then continued on to other areas of Alaska via the marine and highway transportation modes. There were no shipments reported via air, pipeline, and/or rail in this subarea. For pipelines and rail, this is readily apparent since there are no pipelines in Southeast Alaska, and the railroad that runs from Skagway into Canada transports primarily tourists. However, the lack of air shipments is likely indicative of the data gap that exists for air cargo shipments and not an accurate reflection of reality. The breakdown of hazardous materials volumes from year to year by Hazard Class is depicted in Figure 5-1 below.

Figure 5-1. Volumes of Hazardous Materials Shipped into SEAK presented on a log scale



Figures 5-2, 5-3 and 5-4 depict the breakdown of hazardous materials shipments within the Southeast Alaska Subarea by a percentage of total volume shipped. It is interesting that the percentages by hazard class remained very consistent between 2007 and 2008 with HC 1 (Explosives) commodities dominating the volume. In 2009 that trend shifted due to a significant increase in HC 3 (Flammable Liquid Materials) commodities with a corresponding 50% drop in HC 1 shipments.

Figure 5-2. SEAK Hazardous Materials Percentage of Total Volume by Hazard Class for 2007

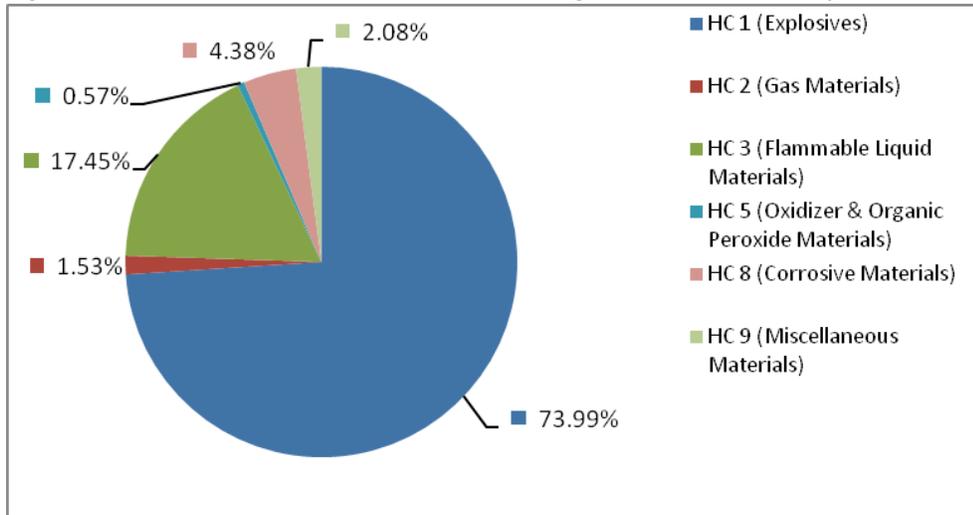


Figure 5-3. SEAK Hazardous Materials Percentage of Total Volume by Hazard Class for 2008

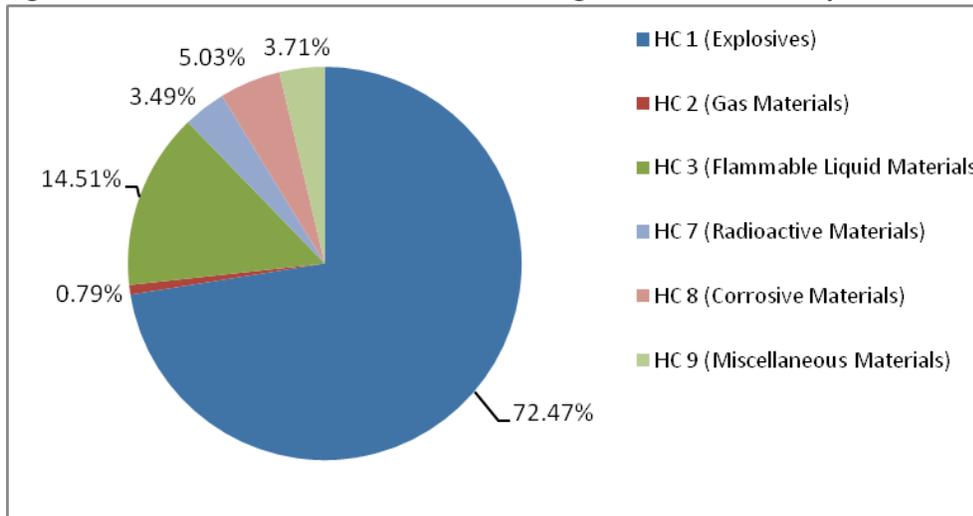


Figure 5-4. SEAK Hazardous Materials Percentage of Total Volume by Hazard Class for 2009

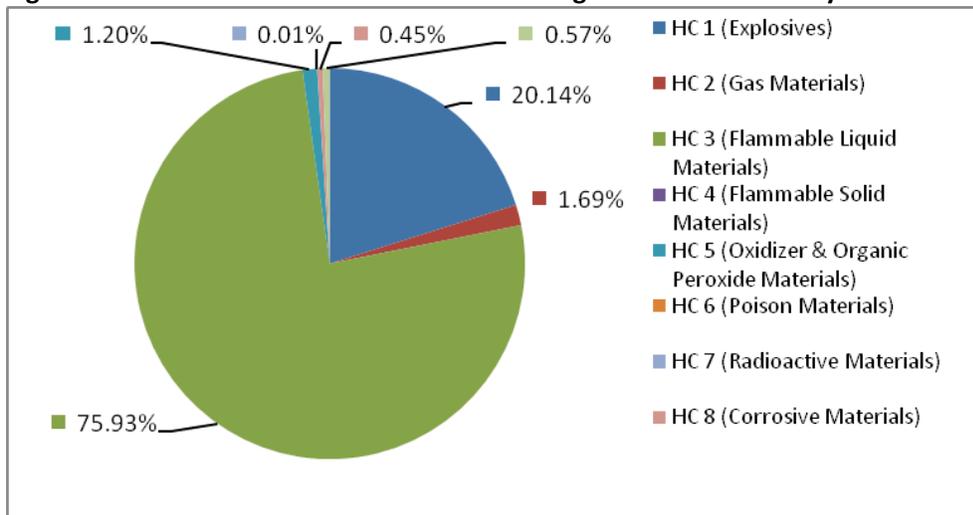


Table 5-1 below lists the actual volumes of commodities transported within the Southeast Alaska Subarea by calendar year.

Table 5-1. Volumes of Hazard Class Transported within SEAK Subarea by Calendar Year

Hazard Class	2007 (Total Volume in lbs)	2008 (Total Volume in lbs)	2009 (Total Volume in lbs)
HC 1 (Explosives)	2,644,646	2,690,563	1,444,784
HC 2 (Gas Materials)	54,713	29,263	121,517
HC 3 (Flammable Liquid Materials)	623,868	538,750	5,446,316
HC 4 (Flammable Solid Materials)	-	-	-
HC 5 (Oxidizer & Organic Peroxide Materials)	20,207	-	86,388
HC 6 (Poison Materials)	-	-	9
HC 7 (Radioactive Materials)	-	129,487	975
HC 8 (Corrosive Materials)	156,593	186,928	32,186
HC 9 (Miscellaneous Materials)	74,389	137,762	40,911
ORM-D (Other Regulated Materials)	-	-	-

A more detailed evaluation of each hazard class category is provided below. A threshold volume for this analysis was established at 10,000 lbs and this provided an adequate level of detail for the types of commodities shipped.

HC 1 Explosives: The primary explosives that were transported through the Southeast Alaska Subarea were within HCs 1.1, 1.4 and 1.5 with the highest volume in HC 1.5 from year to year. The total volume of HC 1 commodities shipped did not display a great deal of change between 2007 and 2008, but decreased by nearly 50% in 2009. Table 5-2 lists the primary HC 1 commodities shipped within the SEAK Subarea.

Table 5-2. Primary Hazard Class 1 Commodities Shipped within the SEAK Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
1.1	Explosive, Blasting, Type E	0241
	Cord, Detonating	0065
	Boosters	0042
	Torpedoes	0330
1.4	Articles, Explosive, N.O.S.	0349
	Detonators, Electric	0255
	Detonator Assemblies, Non-Electric	0361
1.5	Explosive, Blasting, Type E or Agent Blasting, Type E	0332
	Explosive, Blasting, Type B or Agent Blasting, Type B	0331
	Ammonium Nitrate-Fuel Oil Mixture	0331

HC 2 Gas Materials: HCs 2.1 and 2.2 were the gas materials transported through the Southeast Alaska Subarea between 2007 and 2009. Table 5-3 lists the primary HC 2 commodities shipped within the SEAK Subarea.

Table 5-3. Primary Hazard Class 2 Commodities Shipped within the SEAK Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
2.1	None	
2.2	Aerosols	1950
	Nitrogen, Compressed	1066
	Fire Extinguishers	1044
	Liquefied Gas, N.O.S.	3163
	Carbon Dioxide	1013
	Dichlorodifluoromethane or Refrigerant Gas R12	1028
	Compressed Gas, N.O.S.	1956

Volumes shipped through the Subarea were low when compared with other Subareas. HC 2.2 saw an approximate 80% increase in volume between 2008 and 2009.

HC 3 Flammable Liquid Materials: HC 3.0 transported through the Southeast Alaska Subarea saw a 10-fold increase between 2008 and 2009. Table 5-4 lists the primary HC 3 commodities shipped within the SEAK Subarea.

Table 5-4. Primary Hazard Class 3 Commodities Shipped within the SEAK Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
3.0	Paint	1263
	Flammable Liquids, N.O.S.	1993
	Petroleum Distillates, N.O.S. or Petroleum Products, N.O.S.	1268
	Adhesives	1133
	Acetone	1090
	Alcohols, N.O.S.	1987
	Flammable Liquids, Corrosive, N.O.S.	2924
	Xylenes	1307
	Butanols	1120
	Fuel, Aviation, Turbine Engine	1863
	Ethyl Methyl Ketone	1193
	Diesel Fuel, Fuel Oil, Gas Oil or Heating Oil Light	1202
	Combustible Liquid, N.O.S.	1993
	Methanol	1230

The sharp increase in HC 3 commodities between 2008 and 2009 appears to be the result of an addition of significant shipments of “DIESEL FUEL, FUEL OIL, GAS OIL or HEATING OIL LIGHT” equaling nearly 4.7 million pounds.

HC 4 Flammable Solid Materials: There were no Flammable Solid Materials transported within this Subarea during this time period according to the data evaluated.

HC 5 Oxidizer and Organic Peroxide Materials: HC 5.1 and 5.2 were shipped in 2007 and HC 5.1 was shipped in 2009. While there was an approximate 75% increase in HC 5.1 between 2007 and 2009, there were no discernible trends noted. There were no HC 5.1 or 5.2 materials shipped in 2008 in this Subarea. Table 5-5 lists the primary HC 5 commodities shipped within the SEAK Subarea.

Table 5-5. Primary Hazard Class 5 Commodities Shipped within the SEAK Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
5.1	Oxidizing Liquid, N.O.S.	3139
	Hydrogen Peroxide Aqueous Solutions	2014

There were no HC 5.2 commodities shipped that exceeded 10,000 lbs in volume.

HC 6 Poisons: A very small amount of HC 6.1 (Mercuric Chloride) was reported being shipped in 2009 within the Southeast Alaska Subarea. The small volume was retained for reporting purposes because it is classified as an EHS. There were no HC 6.1 or 6.2 commodities shipped that exceeded 10,000 lbs in volume.

HC 7 Radioactive Materials: HC 7.0 was transported in 2008 and 2009 within the Southeast Alaska Subarea. A sharp decrease was noted in volume between 2008 and 2009. Table 5-6 lists the primary HC 7 commodities shipped within the SEAK Subarea.

Table 5-6. Primary Hazard Class 7 Commodities Shipped within the SEAK Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
7.0	Radioactive Material, Type A Packaging, Special Form	3332
	Radioactive Material, Type A Package	2915

In 2009, there were no HC 7.0 commodities shipped that exceeded 10,000 lbs.

HC 8 Corrosive Materials: Shipments of HC 8.0 in the Southeast Subarea varied from year to year with the volume increasing between 2007 and 2008 and then sharply decreasing between 2008 and 2009. Table 5-7 lists the primary HC 8 commodities shipped within the SEAK Subarea.

Table 5-7. Primary Hazard Class 8 Commodities Shipped within the SEAK Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
8.0	Corrosive Liquids, N.O.S.	1760
	Batteries, Wet, Non-Spillable	2800
	Batteries, Wet, Filled with Acid	2794
	Formic Acid	1779
	Paint or Paint Regulated Material	3066
	Corrosive Liquid, Acidic, Inorganic, N.O.S.	3264
	Corrosive Liquid, Basic, Inorganic, N.O.S.	3266
	Acetic Acid, Glacial or Acetic Acid Solution	2879

HC 9 Miscellaneous Materials: The volume of HC 9.0 commodities shipped within the Southeast Alaska Subarea saw a dramatic increase between 2007 and 2008 and then dropped below the 2007 levels in 2009. The sharp increase in 2008 could be attributable to the increase in the Alaska Permanent Fund Dividend checks during this timeframe. Table 5-8 lists the primary HC 9 commodities shipped within the SEAK Subarea.

Table 5-8. Primary Hazard Class 9 Commodities Shipped within the SEAK Subarea

Hazard Class	Hazardous Material Description (Greater than 10,000 lbs Shipped)	UN ID Number
9.0	Engines, Internal Combustion	3166
	Lithium Batteries, Contained in Equipment	3091
	Vehicle, Flammable Gas Powered	3166

Figures 5-5 depicts the volumes of hazardous materials shipped each year within SEAK by Hazardous Material Name for volumes exceeding 10,000 pounds.

Figure 5-5. Hazardous Material Commodities by Hazardous Material Name (Greater than 10,000 lbs) for SEAK, for 2007 through 2009, presented on a log scale

