

Department of Civil Engineering

**TRANSPORTATION SYSTEMS OF ANTIGUA, W.I.**



Submitted to:

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## **Transportation Report Forward**

When one thinks of roads, what comes to mind? Meandering country paths, coastal dragways stretching for miles, or 8 lane freeways hustling and bustling with commuters? Being a citizen of this country I took the idea of developed road systems for granted. In this report, I aim to heighten the awareness of the average American to how another country (Antigua) approaches its transportation needs. My intent is to be broad and cover a great deal of information. The information will be presented based on firsthand experience of the systems. I loved the thrill of adventure everyday I spent in Antigua. One day we'd survey the blockhouse and the next we'd dive headlong into an 18<sup>th</sup> century catchment system. Every adventure however had a beginning and an end, the road in and the road out. During the trip, I set out to uncover how Antigua deals with the road in and the road out of its many sites and attractions. I researched the entire transportation infrastructure: planes, trains, and automobiles. I hope the report may be used as a basis of an in depth analysis towards any of the current systems presented. There is much opportunity for American engineers in the transportation industry, to help the developing nation of Antigua. I hope someday I could make positive impact on their society, be it in any realm that a civil engineer has influence over. With that sit back and enjoy the ride.

## **Introduction**

The nation of Antigua and Barbuda's infrastructure relies heavily on people getting from point A to point B. The Central Intelligence Agency website estimates Antigua and Barbuda's total population at 69,842 during July of 2008. With this many people along with a thriving tourism industry many systems have been implemented to ensure safe and quick travel. Some of

the systems I encountered on both islands were: cars and trucks (of Japanese make), vans, buses, an assortment of boats, motorcycles, bicycles, horses/donkeys, helicopters, and air planes. I noticed a variety of roads including those of paved asphalt, gravel, dirt, sand, and poured concrete. A developing storm water system can be noted on the island. Antigua houses an international airport that caters to the traveling needs of the islands. There were also numerous ports located on the island, the two main ones being Nelson's Dockyard and St. John's along with another located in Crabbs Peninsula (for mega-yachts). The variety of sea-faring vehicles was amazing, boats of all kinds. All in all the nation of Antigua has an extensive transportation infrastructure.

## **Objectives**

The objectives of this report are to present the reader with an overview about the transportation systems found on Antigua; to aid research capabilities for students who travel to and about the island; to present key elements that made the island the tourist destination that it is today; to illustrate a brief history Antigua's transportation system underwent; and to serve as a preliminary report that could aid designers, engineers, or planners with potential problems encountered in the future.

## **ANTIGUA TRANSPORTATION HISTORY**

From the canoe master to the captain of the mega-yacht Antigua has seen its fair share of travelers. A small annotation from Dr. Reg Murphy's presentation gave us (the field school students) insight on the origination of the early Antiguans:

“Most scholars believe that the early Caribbean people came from S. America and road the Gulf Stream current from island to island. Other views think they came from central Mexico or down from Puerto Rico, however with the rudimentary carved wooden boats used for travel this was an unlikely scenario. From South America, the Gulf current allowed the peoples to flow from the outlet of the Orinoco river and travel up to Trinidad, then to Grenada... then to St. Lucia, and finally to Antigua.”

The canoes that were spoken of are still being used today by the Wareo Indians of the Orinoco River Basin, See photo:



**Wareo Indians on dugout canoe  
in Orinoco River. Photo Courtesy of  
trimaran-naga.com, 2001.**

The early settlers of Antigua came prior to 3000 BC during the lithic era of the island. Once on the island the peoples tended to stay by the shores and river outlets where food was abundant. Evidence of inter-island trade also stems from the early Antigua culture. Antigua flint is found on other islands and from Archeological sites in Antigua Jadeite axes and finished unlocal gems, like North American turquoise, have been discovered. For thousands of years the Antiguans lived as such until the beginning of the historic era during 1493. The Spanish named

and tried to settle the island. Attempts were thwarted however from the strong Amerindian presence. Not until the 1600's would the British take claim and colonize the island. The presence of the sugar cane industry made Antigua very important to Britain from the 1600's to the 1930's.

In the 1707, the British issued documents that basically allowed anyone to become a privateer in foreign lands; these were called the Letters of Marque. Many British sailors signed these papers and became privateers for the crown some well known signers included: Drake, Morgan, and Kidd. The privateers were essentially licensed pirates with royal backing to plunder vessels from different countries like Spain and France. Great pirates began pulling in much wealth and trade goods to the Caribbean. At one time the infamous Captain Kidd was stationed in St. John's; from the privateer presence Antigua was greatly protected. Which country would want to attack a country with a city full of 2000+ "half drunken war hardened pirates"? Joking aside crimes began to escalate to the point that the "pirates" would sometimes prey on their own countries vessels. Thereby Nelson's Dockyard was established in 1728 to thwart the swashbucklers' presence. It became a huge military gain for the British navy, a place where boats could be "hidden" from the outer bay, repaired, cleaned, and restocked for voyages. Even today Nelson's Dockyard is a prime port destination for yachters from all over the world.

Trading and sugar manufacturing continued through the emancipation of slavery. At one time there was a train that went through the island. It was mainly used for the sugar cane industry; however after the sugar cane industry fell in the 1940's the train went out of use. In its day there was 77 km of track. The rail was composed of 64 km of 0.760-m gauge and 13 km 0.610-m gauge (www.wikipedia.com, 2008). The automobile began to make its presence during the latter half of the 20<sup>th</sup> century. The first major airport was built in 1981. All of this rich history leads to the transportation system the employ today.



**Field School attending the Nelson's Dockyard tour. Courtesy of Carly Marie, 2008.**

## **TRANSPORTATION TODAY**

### **Automobiles**

The presence of automobiles makes a strong impact on the country of Antigua. The cars sold there are generally of Asian make. There are Suzuki's, Toyotas, Hyundais, Kawasakis, and many other Asian cars present on the island. With these cars, there are a few dealers present; the biggest I saw was Hadeed motors. The gas prices are comparable to that of the US's being around 10 EC/gallon (\$4). The price of gas is said to take a toll on the tourism industry (Caribbean Time Bomb, R. Coram 1993). Essentially the higher the price of gas the higher the

air fare, electricity (entire island is based on diesel power plants), sea fare, tariffs, and travel about the island. Of yet I have no information on whether a toll on the industry is present.

The traffic of the island contains all “walks” of automobiles. The major ones being cars, trucks, vans, heavy construction vehicles, hauling trucks, and motorcycles. There is a labeling of traffic components by the license plates. If it’s a car there’s an A, if it’s a rental an R, if it’s a commercial vehicle a C, if it’s a taxi it says TAXI, if it’s a bus its BUS, if it’s a government vehicle a G, there is also SC on APUA vehicles. Our trip was fortunate to have rental vehicles on hand. Visitors to the island are allowed to rent cars as long with proof of a valid driver's license from their home country. Dr. Fox arranged for the purchase of two temporary driver's licenses from Big’s Auto Rental, for the two other teachers on the trip. There is a police force instated on the island and they ride in police jeeps. I saw ambulances and fire trucks as well in St. John’s but nowhere else. Vans could be converted into taxis or buses if the owner is issued a taxi or bus license. The buses and taxis play a significant role in the public transportation system; I will speak on this later.

Some of the cultural “rules of the road” were quite easy to adapt to, others not so much. Driving on the other side was a bit intimidating. People can sit in the back of pickup beds and without seat belts. Often in the early morning we would see a small truck drive by with 8 or so construction workers in the back of the truck bed on their way to work. Motor cyclists can ride their bike without helmets. A scary but true rule is that the bigger truck has the right of way. When a large cement truck was seen barreling towards us at full speed, we pulled off at our nearest convenience and waited for it to pass. Seat belts are optional to wear on the island. At most gas stations the workers come out and pump the gas for you. As of yet I have not seen any

of Antigua's traffic regulations thereby I am not saying that any of these things are legal, but they were consistently practiced.



**Notice the license plate (C is for commercial status), the numbers after only reach 5 maximum some places. Courtesy of Antigua-travel.com**

## **Buses**

One of the main transportation systems on the island is the privately owned public bus system. From my experience, a large means of public travel about the island is via the private bus system. The bus atmosphere is one that breaches social bounds, one could sit next to a teenager on the phone, a kindly old woman with groceries, a group of bewildered tourists, or a construction worker making his way home. At one time the buses could be open-air trucks where anyone could pay a meager price and get a lift from the truck bed.

The buses range from the very large school bus sizes to the very small. A bus is generally, but not always, a 15 seat van with the letters BUS on the license plate. Buses travel to

destinations according to the number they present on the front or back of the bus. For instance the 16 goes to St. John's and then back to Nelson's Dockyard in a continuing loop. For 3.5 EC one can travel across the entire island (i.e. English Harbor to St. John's). The buses run from 5:30 am to 6:00 pm on a schedule. There are two bus stations in St. John's, the East Bus Station near the Botanical Gardens on Independence Ave and another one on Market St. near the Central Market. Buses however do not drive to the airport or to some of the resort areas of the island. There is also a smaller bus system employed on Barbuda with smaller bus stops in Codrington.



**Example of the Central Market bus station in St. John's.**

**Courtesy of Carly Marie, 2008.**

Unlike the US the Antiguan bus system is based entirely on privately owned buses by bus drivers. The bus driver applies for his license from the government office in Antigua and upon approval is issued a license plate with the prefix BUS. To catch a bus, one simply flags the bus down or waits at a bus stop. Depending on the driver the passengers pay upon arrival to their destination or before the bus leaves. Some people become bus drivers to help supplement their income; a 15 person bus could make 105 EC in a round trip from Nelson's Dockyard to St. John's. Being that it is only an hour of easy work; some people actually exercise this trip during a lunch break. This may be a good idea for Americans who need work. The implementation of private bus systems has truly made a presence on the island's work force.

In some instances the bus drivers have gentlemen who “coax” passengers to their bus. In St. John’s a couple of men approached us (students) when we were at the bus station waiting for the bus. They asked us where we were going, we replied Cobb’s Cross. They both motioned for us to follow them, upon this motion we were then asked by another bus that recently pulled up whether or not we were going to English harbor (a destination past but the same trip to Cobb’s Cross). The men who motioned to us began to tell us not to listen to them but to instead make haste. With a couple of pushes and pulls we made it to the men’s larger bus. The bus was large and it took 20 minutes for it to fill with its passenger capacity. We paid through the window with the driver before the trip took place. The ride was fun; the bus driver didn’t take his time and maintained a speed of around 60 km/h+ on some roads. If someone needed to get off, the person would let it be known to the driver a stop would soon follow. I enjoyed this social mode of transport and thought it very fascinating in comparison to America’s public bus system.

## **Taxis**

The taxi system of Antigua is slightly different than the bus system. It doesn’t work like the taxi system in America; destinations have a fixed price (see Appendix A). However in relation to the Antiguan, buses the make of the vehicles (buses and taxis) are exactly alike, the only distinguishing feature is the presence of TAXI on the license plate. Taxis are more expensive than buses sometimes costing upwards \$21 per person (56 EC). The longer trips have the longer tolls, like the St. John’s to Shirley Heights trip.

Taxis have a “monopoly” on some of the destinations and time periods on the island. Only the taxis (along with private and rental vehicles) can drive to the airport and the resort areas of the island. Since the buses end at 6 pm, the taxi drivers become the only option for those who want to take late night excursions. They can be reached via flag down or phone call.



**Notice the prefix TX in front of the yellow license plate (Courtesy of Jackson Taxi).**

Taxi drivers can be found driving about the island looking for customers. There are also taxi “coaxers”. The only area I saw this taking place was at the cruise ship port in St. John’s, where my group and I were propositioned to “see the island with style” by a man standing by a taxi. In some instances the taxi drivers act as tour guides to tourists who want to visit the destinations of the island. While surveying the Blockhouse, Betty’s Hope, and Nelson’s Dockyard I witnessed this first hand.

One of the funny things I noticed was that some of the taxi drivers’ explanations were a bit misinformed. At the Blockhouse the National Parks Authority installed multiple concrete columns about the cliff to keep people from driving off the side. The taxi driver however said that the posts were clearly British angling tools for the positioning of the canons. Being tourists they don’t know the difference but were facts like these are strewn about to insight the pockets of the tourist? However this isn’t the case always, another driver/guide frequented Betty’s Hope often. When we showed him our finding of feature 17 (well feature) he had an explanation for its use. He told us that one just like it was located inside the Nelson’s Dockyard gift shop. A trip there with Reg proved that this feature was indeed similar to the unknown feature 17 at Betty’s Hope; the man indeed helped us with feature definition. I was warned ahead of time if I want a

cheaper trip I should take a bus and that's exactly what I did. Yet it would probably be different if I wasn't on a budget, and I wanted a nice holiday experience. The taxi system looks to serve its purpose in serving the needs of tourists and residents on the island.



**Feature 17 of the taxi driver's explanation. Courtesy of Carly Marie, 2008.**

### **By Air**

The major Airport of Antigua is the V. C. Bird International Airport. The airport caters to both local and international planes. V. C. Bird Intl. is 8 km northeast of the capital, St. John's. It is required that all commercial flights must enter the country through this airport. Many different airline companies use V. C. Bird Intl. Some of the airlines I noticed were; Virgin, US Airways, Qantas, Carib, Liat, and numerous others. Options of chartered flights and helicopter travel are offered within the airport. There are two other airports located on the island one of them being the US airbase. The airbase uses a "dry" solid waste approach, used since the 1940's, in treating its effluent needs. There is over 6000 meters of paved runway between the 3 airports (CIA World Fact book, 2008).



**V. C. Bird Intl. Airport.**

**Courtesy of Flickr.com**



**Liat Plane destined for trip**

**Courtesy of Carly Marie.**

The airport was originally built as Coolidge Air force Base by the US during WWII. After the Japanese surrender the base was handed down to the Antiguans as a civil airport. Its large terminal building was constructed in 1981. Inside there are facilities that cater to domestic and international passengers. Some of them are; customs, a post office, restaurants, shops, and waiting areas. Upon my departure I noticed the waiting areas would crowd considerably.

There are currently plans of airport expansion for V. C. Bird Intl. The growing tourism industry (Antigua) is now seeing a greater S. American presence. Construction plans have been put to action as of February 2008 to expand the terminal. Antigua's government supports the endeavor. Quoting Harold Lovell, Antigua's Minister of Tourism and Civil Aviation,

"The existing facility is too small to meet the demand. We will aim at the Spanish and Portuguese language countries like Brazil. There is tremendous potential there. This will all add to the pressure on the airport and thus the need for refurbishment and expansion."

The construction of the new terminal will start next year, 2009. The Antigua and Barbuda Millennium Airport Corporation will undertake the construction. Some of the contractors are;

Turner Construction (Gov't Advisor), Constructora Andrade Gutierrez de Brasilia, and ABI Ltd. The construction will be completed in phases. The first phase will renovate and expand the terminal (1981). The cost will be around 100 million US dollars and the total spacing of the new terminal will be over 78,000 m<sup>2</sup>. Phase two will mainly upgrade the airfield; extend the main runway, upgrade the lighting, expand the apron and the outside finish of the terminal (Antigua architecture style) and add the addition of a plaza. The project will be complete in 2011. The project information is from airport-technology.com, SPG Media Limited Copyright, 2008.



**Rendition of Heilman Architect's Plaza construction at the new V. C. Bird Intl. Airport. (Courtesy of Heilman Architects).**

## **Roads and Infrastructure**

The road systems of Antigua were greatly important during the duration of our stay. We took many field trips all across the island, even one to a different island. According to Wikipedia there is over 250 km of paved road on both islands combined (wiki, 1996), see below.

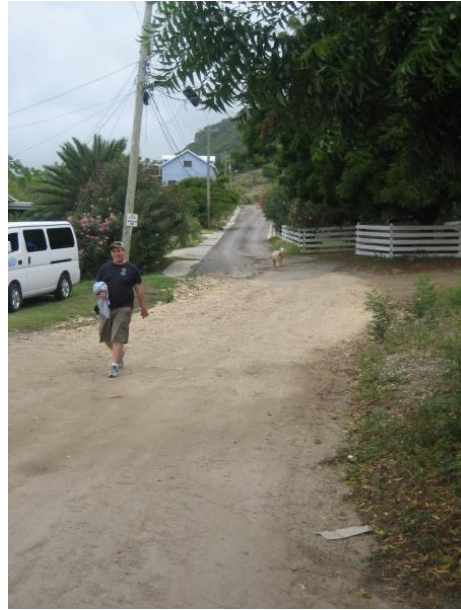


Maps provided by All about Antigua.com

Along with paved road there are applications of concrete roads/paths. Reg generally pours his driveways with concrete because it is the most practical material. It withstands water, is durable, and it saves material. The photograph on the bottom left demonstrates his application:



**Concrete road within  
the hills of Cobb's Cross.  
Courtesy of Carly Marie.**



**Dirt road with asphalt transition  
within the hills of Cobb's Cross.  
Courtesy of Carly Marie.**

There are also numerous dirt roads throughout the island. We would encounter them often and they generally hooked up to paved roads in the manner shown on the above right side. On a typical day we would walk all three types of road down from and up to Nicky and Reg's house for our main meals breakfast and dinner. From our experience, every day the archeology students would drive on paved roads across the island from Cobb's Cross to Betty's Hope. We (engineers) also used the roads to drive to our destinations, such as; the blockhouse, St. John's, All Saints, or Nelson's Dockyard. The roads were simple enough, municipal asphalt for general use. There were two lane roads throughout the island, which wer open to all sorts of vehicles

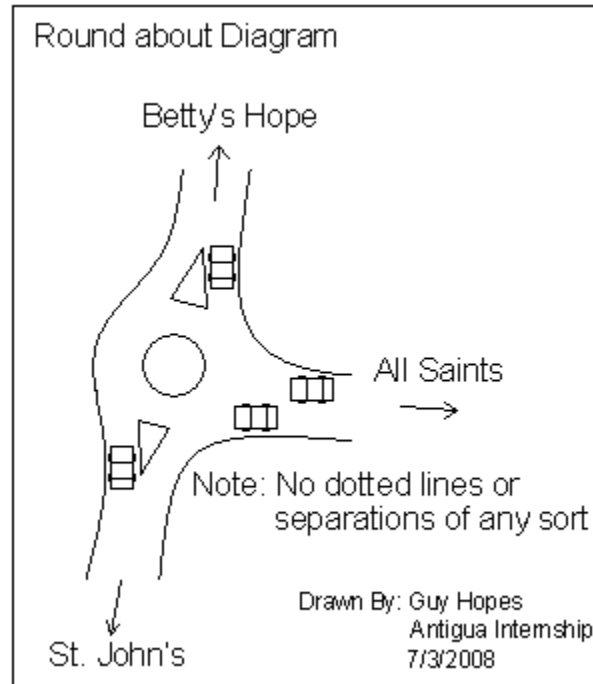
(like concrete trucks, tractors, dirt bikes, and smaller diesel hauling trucks). The approximate lane width was around 18 feet, the roads felt somewhat safe to drive in regions of good condition. However some sections were plagued with alligator cracking.



**An Antigua Road example.**

**Courtesy of dkimages, 2008.**

As of now it looked as if there were no forms of pavement preservation on the island. There were many potholes present on the rougher roads we drove on. However some places it showed that when a road became highly wore patching with asphalt or in some instances street tar was implemented. The roads have small shoulders and occasional turnouts. Generally the faster traffic passed up the slower vehicle whenever it was safe to do so. If something is unsafe the traffic naturally slows, the fastest we traveled was around 80 km/h, and the fastest posted was 40. Some drivers are safer than others; I remember being tensed occasionally on the road. Driving at night was especially unsettling to those not used to the dim countryside and the sudden approach of vehicles. Public lighting was not prevalent in Antigua. The rule of the road on Antigua is the commonwealth “left side” driving style. There are roundabouts present in many places on the island like the one featured on the next page.



Not to scale

On the way to Potwork's, which by the diagram is on the road to Betty's Hope, there was a presence of dotted lines for lane differentiations a ½ of a mile past the roundabout. There were also speed limit signs present 40-km/ hr on the way to the Potwork's Reservoir. Other signs that were on the island were; no parking anytime signs around bus stops, school signs, street signs (sparingly), and no parking bus stop, veer signs, and bump warning signs.

Pedestrian traffic ranged from town to town on the island. In St. John's there were designated crosswalks and stop lights that pedestrians used. Anywhere else on the island people crossed at their own risk. Mostly in St. John's I saw a strong stop light presence. Indeed they were similar to America's red stop, green go system. Since we lived by a school we noticed a slight implementation of speed bumps around the school area. There were also school children signs to make the oncoming traffic aware. Generally people made exceptions for pedestrians.

Bicycle, horse, donkey, and dirt bike traffic that would slow the oncoming vehicles made their presence on the island. In residential areas people generally drive slow mostly because of the windy turns most of the roads make. There are many alleyways in Antigua. All Saints and St. John's have good examples of this statement with intertwining alleyways in between houses.



**Alleyway and storm  
water system example in St. Johns.**

**Courtesy of dkimages, 2008**

The drainage system throughout the island is underdeveloped. For the most part Antigua is a dryer island, seeing only around 42 inches a year (Caribbean Agricultural Research and Development Institute, 2008). However the rain comes in from July until November during hurricane season, where in a short period of time rain can inundate a given area. For most of the island the storm water system relies on the local creeks and gulleys to drive out the water. People whose farms are near the Potworks reservoir use this associated watershed area. Near English Harbor small channels were dug on either side of the road for water pooling and flow. In St. John's the storm water system is poor. At nightfall many of the cockroaches that dwell under St. John's storm water system come up and crawl about on the sidewalks. There are also stray dogs,

mostly near the St. John's church (which Jasper and Jim greeted kindly). The blame for the jumbled/poor drainage construction (i.e. wood forms still concrete and pools of waste and trash, see above) stems from the Cricket World Cup. There was a need for Antigua to look somewhat nice for the high end tourists who visited the games. It was a major contribution factor to the poor gutter system. Poor planning made the curbs and neighboring roads to close and sometimes steep enough that in some places a car would have a hard time avoiding the sidewalk should it slip into the pitch.



**Example of curb pitch problem.**

**Courtesy of Flickr.com**

The botched storm system however may have caused more harm than good giving the opportunity of animals and insects to breed uncontrollably and spread pathogens. In English Harbor I also noticed the presence of a dead rat in the runoff stream on the side of the road. Although these problems are present, Antigua has still made the most of the apparent systems.

On the lighter side, one of the funny yet true facts we encountered driving around on an island is that even if we had little knowledge of a given road that we were travelling we knew that being lost was never a possibility, we're on an island. There would always be a main town or beach in 15-30 minutes in any direction.

There were literally thousands of goats on the island. Sometimes we would hit a pack and ease up slowly so they would scatter. Other times one would have to shoe them away. One point in the trip we, Betty's Hope Field School, enacted the first "running with the goats competition" at Betty's Hope. The Shepard didn't find it amusing however and threatened me personally with many large stones in his hand. For a video clip of the event visit [youtube.com](http://youtube.com), the clip is titled Betty's Hope Field School 2008 sheep chasing (Bob, 2008). The moral of my story is, "when in Antigua watch out for the goats on the road".



**Photo courtesy of dkimages, 2008**

Being an island Antigua relies heavily on the use of sea travel. The island has many ports for the ships' docking purposes. Some of them include; Nelson's Dockyard, St. John's (main port), Jolly Harbour, Deepwater Harbour, High Point Crabbs Peninsula, and Codrington (Barbuda). High Point Crabbs is a personal port for Mr. Stanford. He personally helped fund the dredging and implementation of sea breakwaters to ensure the safety of his assets along the port. They include a power generation plant, a desalination plant, giant warehouses for restocking mega yachts, and other property. High Point Crabbs has recently added a docking station, much like the one at Nelson's Dockyard. There are fees that apply to sailors when they enter and leave Antigua. By law, any boat that sails to Barbuda must enter Antigua and obtain a permit to do so via the Port Authority. There is also a presence of the US coastguard in Antigua. They are implemented to stop drug smuggling, rescue lost seamen, insure no piracy takes place, and inconvenience the local yachters with their dirty boots on the nice hardwood flooring.

Antigua hosts and calls claim too many kinds of vessels. They come in all forms; tankers, catamarans, yachts, restored frigates, sail boats, cruise ships, and many more. On the island of Antigua a person could schedule charter boat trips around the island. The Wadadli Cats is a good example of a charter vessel, see below.



**Courtesy of Wadadli Cats.com**

The presence of the Barbuda Express catamaran makes a big difference to the “Barbuda Commuters”. The rig runs 5 days a week costs 80 EC (one way) or 140 EC round trip. Barbuda lies 28 miles from Antigua and the trip is 90 minutes. I had the fortune to ride on the Barbuda Express and the experience was amazing. One could hang off the side and get splashed by the immense waves that the catamaran cut through, Lauren and I were soaked by the end, see below.



**The Barbuda Express.**  
**Courtesy of Carly Marie.**

If one wanted to travel across Barbuda generally one would take a boat as a faster means of travel. We used speed boats for our trip across Codrington Lagoon. The boats were helpful when viewing the frigate bird colony that lied within the mangrove portion of the lagoon.



**Jasper and I with group**  
**(Lauren, Alli, Sarah, Esther)**  
**on Barbudan speed boat.**  
**Courtesy of Carly Marie.**

Immense cruise ships are also present on the island. So monstrous these vessels are St. John's seems to have its own section for them, a very touristy one. The section caters to the needs of the tourists offering restaurants, jewelers, gift shops, and other attractions. The docks are reinforced concrete peninsulas. Cruise ships can also dock at Heritage Quay.



Photo of Cruise ship.  
Courtesy of [antiguanice.com](http://antiguanice.com)

Thanks to the long history of Antigua's sailing traditions, Nelson's Dockyard has become a major point of interest for yachters abroad. Antigua yachting week sees a huge influx of tourists and sailors from all over the world. The event takes place in May every year. Nelson's Dockyard is one of the 10 major yachting regattas of the world, see next page.



**Typical boat presence in English Harbor  
(Dockyard at inlet) during sailing week.  
Courtesy of Swainsailing.com.**

The industry of the island would be nothing without the presence of merchant marine vessels. Although not as immense as port like Puerto Rico, Antigua has a major industrial point located in St. John's and High Point Crabbs. Literally all of the refined goods Antigua uses are imported. Below I have included a small spreadsheet including up to date merchant marine information from the CIA World Fact book:

<b>Marine Merchant Vessel History (Cia World Factbook, 2008)</b>	
<u>Cargo ships</u>	
<u>Bulk ships</u>	40
<u>Cargo ship</u>	596
<u>Container ships</u>	321
<u>Roll-on/Roll-off ships</u>	21
<u>Refrigerated cargo ships</u>	12
<u>Tanker ships</u>	
<u>Liquefied gas tanker ships</u>	11
<u>Chemical tanker ships</u>	7
<u>Petroleum tanker ships</u>	1
<b><u>Total Ships:</u></b>	<b>1009</b>

Concluding this report I have included a government document that shows how transportation amendments are ratified within the government.

## **Conclusion**

Antigua's transportation system is unique. Going full circle the transportation systems of the island truly complement one another to make a working symbiotic relationship. Without each small component the tourism industry would steadily decline. Making a vacation easy and care free goes hand and hand with no hassle transportation systems. During the following report I have presented numerous insights on the island of Antigua's transportation infrastructure. I overviewed the specific descriptions of each system and the role they undertake daily. New developments have been overviewed, such as the progress on the new airport terminal. I have also presented some of the transportation downfalls of the island. The history of Antigua travel and how people moved about the island have been presented. The developing nation has made a mark on how I see American roadways and may it be that Antigua holds on to its "travel culture". Hope the ride has been enlightening, happy future travels.



**Jasper, Jim, and I awaiting our departure from Charlotte to Antigua, June 2008.**

Cheers,

Guy Hopes, EIT

Antigua Engineering Intern

CSU, Chico

## **Bibliography**

### **Pictures Provided By:**

Jasper Rice-Herdt, 2008

Carly Marie, 2008

Trimaran-naga.com, 2001

Flickr.com, 2008

All about Antigua.com, 2008

Antiguanice.com, 2008

Jackson Taxi.com, 2008

Antigua-travel.com, 2008

Swainsailing.com, 2006

Dkimages, 2008

Heilman Architects, 2007

### **Articles, Websites, Books, Lectures, and other**

CIA World Fact book, 2008

Dr. Murphy, Reginald. "History of Antigua." Betty's Hope Field School. 1 July. 2008.

Dr. Fox, Georgia. "Archeology." Betty's Hope Field School. 26 June. 2008.

Bob. "Betty's Hope Goat Chase". 17 July 2008.

<[www.youtube.com](http://www.youtube.com)>

Caribbean Agricultural Research and Development Institute, 2008

Special Thanks to Dr. DingXin Cheng

## **Bibliography Continued**

Harold Lovell. "S. American Tourism." Spring 2008.

SPG Media Limited Copyright, 2008.

<Airport-technology.com>

Coram, R. Caribbean Time Bomb.

William Morrow & Co, August 1993.

Antigua, 2008.

< www.wikipedia.com >

Coram, R. Caribbean Time Bomb.

William Morrow & Co, August 1993.

Unknown. Background Note: Antigua and Barbuda.

August 2006.

## **Appendix A**

Included:

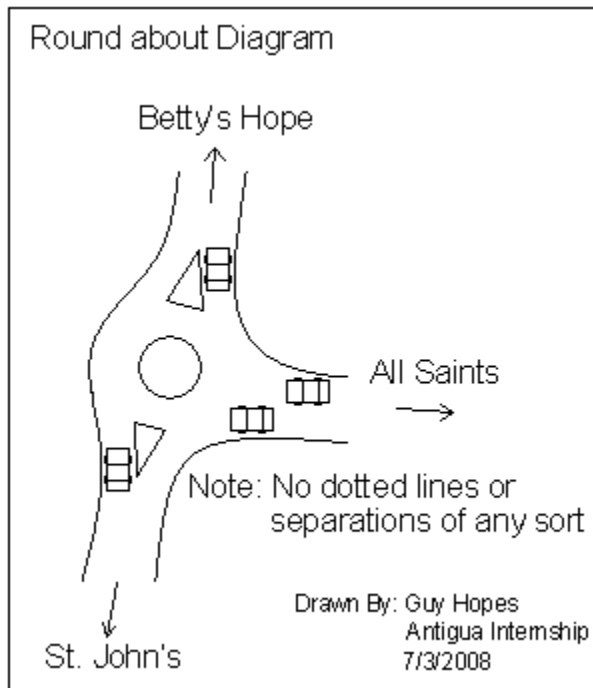
Journal Entries of island transportation

Taxi Fare Pricing for the Country of Antigua and Barbuda

Government Transportation Document

July 3, 2008

I noticed the transportation system of Antigua is filled with wonderful comparisons and contrasts of America. I am taking it upon myself to write a small report about how the people of Antigua, travel in Antigua from an engineering students perspective. I have also included a little bit about our visit to the largest reservoir in Antigua “Potworks”.



Not to scale

- On the way to Potwork's which by the diagram is on the road to Betty's Hope we finally see a presence of dotted line for lane delineations.
- Since this is a commonwealth the traffic travels on the opposite side of the road as America.
- There are speed limit signs present 40-km/ hr on the way to the Potworks Reservoir.
- There are also signs that have the veer (bent arrow) signal on them.

July 7, 2008

## Transportation

- There is a slight implementation of speed bumps around school area.
  - There is a labeling of traffic components by the license plates; If it's a car it's A, if it's a rental it's R, if it's a commercial vehicle it's C, if it's a taxi it says TAXI, if it's a bus it's BUS, if it's a government vehicle it's G, there is also SC on APUA vehicles.
  - There is no parking anytime signs around bus stops, school signs, street signs (sparingly), and no parking bus stop.
  - If something is unsafe the traffic naturally slows, the fastest we went was around 80 kmph, fastest posted was 40. People can sit in the back of pickup beds and without seat belts.
  - At one time the buses could be open-air trucks where everyone is in the back seat.
  - Many potholes in Antigua
  - Dependence on public transit for most people, large bus station in St. Johns.
  - There are a lot of people hustling in the stations (don't listen to him, Cobb's Cross this way!)
  - Small shoulder presence, small curb presence unless one is in St. Johns. The drainage system in St. John's is shoddy. Reg blames the jumbled construction (wood still in forms for sidewalk) from the world cricket cup and the fact everyone was coming to Antigua.
  - There are many alleyways in Antigua.
- 14<sup>th</sup> observations
- There are bump-warning signs.
  - There are bus stop lanes for the buses to pull off
  - The buses and taxis are privately owned and they charge 3.50 EC per person to ride from St. Johns to Cobb's Cross.
  - People use bikes, donkeys, and horse for transportation on the road systems.
  - The bigger truck has the right of way