

PN-ARI-736

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AIRFREIGHT TRANSPORT  
IN THE  
EASTERN CARIBBEAN

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August 18, 1989

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I. INTRODUCTION

One of the objectives of the Tropo project is to alleviate the current problems concerning airlift of non-traditional produce in the Eastern Caribbean States. This includes intra and international movement.

Providing reliable and sufficient airlift for the six target OECS Countries is tied directly to the production of exports both intra and inter-island. The need for mutual trust between, and awareness of, each component's responsibilities is paramount to increasing the production of the produce and enhancing the airlift capabilities to move the produce. On-time and reliable airlift is essential and the first element to improve if growth and marketing of non-traditional agriculture products are to be realized. The assumption that there is not sufficient reliable airlift is valid for the most part, but there are some exceptions, particularly in the international sector.

## II. THE STRUCTURE OF THE CURRENT AIRLIFT SYSTEM

The airlift system is divided into two types of airlift--intra- island and international--with distinct differences in scheduling, lift capability, and organic control of operations.

Intra-Island airlift is associated with small numbers of aircraft, limited sorties and aircraft cabin loading (ACL), short haul (distance), old aircraft and no commonality in maintenance and associated equipment and spares (parts) LIAT is the only intra-island airline that operates on a dedicated daily schedule. However, it only has low ACL capability for produce lift, i.e. 500-1800 kilos. The lift capability is difficult to determine ahead of time for planning purposes.

International airlift is associated with well established airlines. They have modern equipment, high ACL and speed capability, organic support geared to maintain and control point-to-point high density traffic. Their schedules fluctuate by seasonal demands, but this is known well in advance.

### A. Organic Aircraft Associated with the System

The needs of the customer dictate the type of aircraft needed for the system. Intra-island airlift needs dictate a small ACL, moderate speed, very low operating costs and, in some cases, the capability to operate into small austere landing areas. From all indications, a small profit margin is the norm. At present there is a small number of aircraft in operation and of varied types with no commonality for maintenance and equipment. Ground handling equipment is practically non-existent. Table 1 summarizes the Intra-island aircraft currently operating.

International aircraft are operated by companies with a large fleet of the same type with a vast logistics and maintenance system that provides standardized maintenance, spare parts, ground handling equipment and an excellent long range, high density communications system for command and control. The one exception is CARICARGO with one 707 that is used for international flights. Table 2 summarizes the international aircraft currently in operation.

### B. Primary Cargo Handlers

There are two points to consider regarding seasonal impact--one is peak harvest time and the other is the peak tourist season. In all the islands except St. Lucia, there is enough lift during the peak harvest season and more than enough during the peak tourist season. There is a shortage of lift at times in or out of the particular season.

Current air cargo (intra) schedules do not interface with international carriers relative to time nor location. It is a hit and miss situation, but somehow they get the most productive use possible under the circumstances. The number one priority for carriers is passengers.

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Table 1: Intra -Island Aircraft

<u>Company</u>	<u>Type</u>	<u>ACL (May)</u>
1. Caricargo "	Convair 240 DC-4 <sup>a</sup>	5,500 lbs. 25-35,000 lbs.
2. LIAT	DC-6 <sup>b</sup> AVRO-948 <sup>c</sup>	2-3,000 kilos 1,500-2,000 kilos
3. MUSTIQUE	Islander <sup>d</sup>	1,800 lbs.
4. REGAL Airfreight Services	DC-6,7; DC-3 Convair 240	5,000-30,000 lbs.

- a A plan is underway to lease a DC-4 with 10,000 capability  
b A St. Kitts registered company Regal Air Limited is expected to begin operations in August/September 1989.  
c Average load for product runs from 500 to 1,800 kilos, depends on pax load.  
d Strictly charter from St. Vincent, has limited capability.

NOTE: There are several other airline companies attempting to get into the market in the Eastern Caribbean. Not all have "real" aircraft at this time. Regal Air has modified DC-6 and 7's to operate into short runways, i.e. 5,000 ft, St. Vincent.

Table 2: International Aircraft Type

<u>Company</u>	<u>Type</u>	<u>ACL<sup>a</sup></u>
1. British Airways <sup>a</sup>	747	45,000 lbs.
2. BWIA	DC-9 L-1011	5,000 lbs. 10,000 lbs.
3. Air Canada	L-1011	10,000 lbs.
4. Pan Am H-300	B-727 30,000 lbs.	5,000 lbs.
5. American Airlines H-300	B-727 15,000 lbs.	5,000 lbs.
6. CAFICARGO	707	80,000 lbs.
7. WARDAIR <sup>b</sup>	Airbus	18,000 lbs.

a This is usually the maximum cargo for produce. BA normally provides about 20,000/flt. There are exceptions with as high as 30,000 lbs. on a single lift.

b One flight/week from Barbados with 18,000 lbs. for Toronto.

c BA can lift 60,000 lbs. even with full pax load on certain 747 flights.

The companies listed here are those that have been directly associated with the majority of produce lift as concerns this project.

1. Intra-island airliners

a. CARICARGO

Caricargo is a non-schedule operator with a hub at Barbados. The airline has a limited number of aircraft and at the present time only uses the Convair 240 and 707 for produce lift. CARICARGO does not enjoy the confidence of the many agencies involved. CARICARGO does not operate as a scheduled airline and is considered unreliable as far as arrivals and departures are concerned. On the other hand, CARICARGO has had bad experiences when they have tried to schedule a dedicated aircraft for produce lift only. Their 707 was scheduled to lift produce from St. Lucia to Hamilton, Canada. The last lift, 22,000 lbs. was available followed by decreasing loads of 18,000, 15,000 and 10,000. St. Lucia was just not geared for the increased lift capability, according to CARICARGO.

CARICARGO tries to schedule 5 flights/week to St. Vincent. Two of these are full both ways with other cargo. The others are for produce, but the aircraft deadheads (empty) on the leg from Barbados to St. Vincent, which is very unprofitable for CARICARGO. A loss of \$500-600 per flight is estimated. Their rates are favorable for the shippers at BDS\$0.30/lb (US\$0.15).

Currently CARICARGO is negotiating for a DC-4 that they will use for produce lift of 10,000 lbs per flight. Again, they would be in a financial loss situation if they are unable to lift revenue cargo in and out of destinations. This is an option to consider in the final analysis.

b. LIAT

Liat is a very reliable scheduled airline dedicated primarily to passenger service. Airlift of produce is a second priority, but is available on a regular basis, though limited in lift capacity (500-2,000 lbs). LIAT flies four flights daily to the E.C. Islands concerned. An average of 5,000 kilos of produce is lifted into Barbados weekly from Grenada and St. Vincent. They initiate very little from St. Lucia to Barbados and an average of 800 kilos/week from Dominica. At the present time LIAT does not have the resources to increase airlift capacity for cargo (produce). They do not have the necessary resources to expand in the event aircraft were available.

2. International Airlines

There is fluctuating space available to airlift produce on international carriers. These carriers do increase or decrease lift with the tourist season. Produce airlift is strictly ancillary to the passenger trade. Space fluctuates with the passenger season when there are more aircraft available.

a. BWIA

BWIA operates twice weekly with produce from Barbados with 6-7 tons/flight to U.K. Cost is BDS\$1.00 per kilo. They operate three flights per week to Toronto, with space available at BDS\$0.70 per kilo. They also operate through the other islands, but there is usually little or no space. However, their rates are low.

b. British Airways

British Airways is the primary lift for the U.K. and European markets. Cost per kilo varies from BDS\$1.04 - 1.46. Price decreases with increased weight. BA has six weekly flights from Barbados. Lift availability varies from 60,000 lbs. with a full PAX load to 80,000. BA operates two flights per week from St. Lucia during the off (PAX) season and three during December to March. The two flights provide an average of 30,000 kilos per week to increase to as much as 50,000 kilos per week during the peak season. Four flights per week from Antigua it is 55 tons/per week. BA is very cooperative and, in fact, has taken sellers to the U.K. to meet with buyers. They plan to continue this practice, BA is the only airline in the Eastern Caribbean that has a dedicated cargo manager.

c. Air Canada

The cost of shipping by Air Canada is \$18 US/lb. and shippers do utilize the lift when space is available. The airline operates two flights weekly from Barbados direct to Toronto and Montreal with an average lift of 10,000 lbs. of produce. They have one flight/week from St. Lucia and one from Antigua. This is the same flight and averages 3-5 tons maximum per week. During the busy PAX season at St. Lucia they utilize wide bodied jets and this creates additional space for produce.

d. Pan Am

Pan Am's rates were too high but negotiations have just been concluded to lower the rates to acceptable levels. There is considerable space on Pan Am flights, particularly out of Barbados. Fifteen tons on the Airbus to 20 tons on the 747 are the maximum with a low of 3 tons.

e. American Airlines

American Airlines has limited capability at this time. Barbados Marketing Corporation does ship occasionally with AA. Beginning in late November 1989 daily flights from Grenada to the U.S. are scheduled. Availability of cargo space is unavailable at this time.

f. Seawell Air Services (SAS)

SAS is a complete airline service company and handles produce cargo as one of its responsibilities. They are extremely interested in alleviating the produce shipping problem. For example, they were instrumental in negotiating with Pan Am to lower their rates to a figure that is now acceptable to exporters. BA provides satisfactory lift year round. BWIA space has dropped considerably because the flights originate in

Port-of-Spain and there is little or no space available at Barbados. SAS is also negotiating to break this bottleneck but with no success to date. They also mentioned that Air Canada has the space but rates are too high. Their representative stated that they were constantly looking for alternative space and that international lift was available for the most part, but intra was woefully short. The produce they handle usually is on the ground for an average of four hours, but can go as high as fourteen, and there is no cooling capacity at Barbados.

### 3. Airline Freight Services

Airline Freight Services is a general airline services group with freight forwarding tasking. This is another company that seems to be sincerely interested in improving intra-island and international produce lift. The General Manager of Cargo Operations indicated the following:

- o There is not enough overall lift at certain times to handle the produce volume. He believes more produce can be produced. Recognizes a need for an organization to monitor, coordinate, plan schedules and, in general, orchestrate the entire program for all the islands.
- o Intra-island airlift schedules are difficult to forecast in advance and the availability of cargo is a similar problem. For example, he blocked space on WARDAIR for 5,000 lbs (2nd week in July) and only 2,000 arrived for shipment. Conversely, an exporter in St. Vincent ships by boat to Barbados 6,000 kilos/week for international flight by Air Canada and WARDAIR to Toronto.
- o From December - April he has no problems obtaining space.
- o He cannot rely on CARICARGO which has a 707 schedule to Miami-New York, but the market is primarily Canada.

### C. Special Characteristics of Airfreight Cost Schedules.

Aircraft cost schedules are too numerous to fully cover in this paper, but the primary ones are discussed. To operate in a profit mode, aircraft must operate at peak ACL capacity as much as possible. Constraints to changing the cost schedules include the following:

- o There is no opportunity to reduce overhead and operating costs if ACL revenues fall short of the profit plan.
- o The carriers' own ability to operate a reliable and on time schedule has a direct impact on costs.
- o It is difficult to stay with fixed rate charges due to cargo variables.
- o Liability costs for loss of produce must be considered.
- o The loyalty of customers impacts on the availability of cargo.

- o A cargo aircraft must be utilized to its planned/programmed flying hours to meet direct/indirect and fixed cost budgets viz-a-viz the profit.

There are other constraints as well. For example, carriers must have blanket landing/pick-up rights at all airfields in the system. At the present time only LIAT and CARICARGO have unlimited rights in the islands. Barbados does not allow any airline (cargo) to operate in and out except CARICARGO. REGAL Airfreight has asked for permission through legal means. Also, there is no intra-island aircraft that can handle any pallet/container equipment. All cargo is hand carried or moved by forklift. Most shippers desire produce to be moved on pallets because of the lack of proper storing facilities at HUB airports. Proper post-harvest-to-aircraft handling is unsatisfactory. There appears to be no problem with freight forwarding/cargo handling services.

#### D. Current Constraints to Expanding Air Cargo Volume.

There are a number of constraints to expanding air cargo volume. First, there is a lack of funds for a carrier to expand without some guarantee of a return on investment. The carriers operating in the E.C. are marked out as regards airframes. They operate currently at a full daily utilization rate. Any aircraft devoted to strictly "produce lift" would have to be taken from other missions. These are a higher priority and certainly revenue making missions. Aircraft are not going to be committed to non-profitable schedules. Remember, if hauling produce was a decent profit making venture, someone would have jumped on the bandwagon a long time ago.

Second, there is no focal point, or fountain head, to orchestrate the overall operation. Each component acts or reacts to the present situation and does what is best at that moment for themselves. There is little planning ahead as far as air carriers are concerned due to a lack of viable, real time, information. Expansion requires some type of a controlling agency, a center for information and planning.

Third, present airfield facilities are not geared to accommodate fresh produce and protect shelf life. This issue must be resolved. Fourth, expansion of our cargo volume is useless without a guarantee that the produce will be available to lift. Fifth, farmers have little investment in fixed assets and will not improve their facilities unless the markets are there and there is sufficient lift to move produce to same. This over the long haul will limit further expansion in production and lift capability. Sixth, landing rights are restricted on some islands.

#### E. Latent Demand for Carrier Space

There is a clearly latent demand for carrier space. Exporters in St. Vincent, St. Lucia and Grenada estimate there is double the produce available if lift was available. The actual tonnage airlifted is minuscule when compared to overall production figures. Exporters are another means to move produce to an international hub. East Caribbean Agency ships by boat an average of 12,000 lbs/week to Barbados for forwarding to Canada by air. Statistics from St. Vincent and the Grenadines indicate between 1984-1987 70 million pounds of produce could have been exported had there been reliable airlift.

It is difficult, if not impossible, however, to obtain estimates of the volumes of produce shipped by air in the intra and international system and to forecast accurately the future volumes. A review of several studies on this topic as well as discussions with exporters, freight handlers and Departments of Agriculture and marketing officials verify this conclusion. Studies such as the Market Development Programs for Non-traditional Agriculture Products from the countries of the CARICOM dated 03/88; Design of an Integrated Agricultural Production and Harvesting system dated 09/88, Caribbean Fresh Fruit and Vegetables Export Supply/Demand Study dated 04/20/88 and others were unable to determine accurately the past and forecast projections. Tables 3 and 4 are composites of information from these studies.

Table 3: Estimated International Fresh Fruit  
and Vegetable Export  
(tonnes)

	<u>1985/86</u>	<u>1986/87</u>	<u>1987/88</u>	<u>1989/90</u>
PRIVATE SECTOR	4,300	5,100	6,300	7,560
GOVERNMENT SECTOR	100	150	200	250
CATCO	500	620	800	1,040

The thousands of "hucksters" in the system is one reason total past and future numbers are difficult to determine.

Table 4: Estimated production and production  
projections of fruits and vegetables in the windward islands  
 (tonnes)

	<u>1985/89</u>	<u>1985/95</u>
ST. VINCENT	3,320-3,915	-0-
DOMINICA	-0-	7,710-17,430
GRENADA	-0-	6,580-6,890
ST. LUCIA	-0-	1,370-6,290
TOTAL	3,320-,3,915	15,660-30,610

The above reflects an increase across the board. Marketing group managers, exporters and agriculture officials claim it could go as high as 75% increase in five years.

III. ENHANCEMENT ALTERNATIVES FOR THE E.C.  
INTRA-INTERNATIONAL AIRLIFT OF PRODUCE EXPORTS

A. Overview

Imperial data indicates all Caribbean countries rely more on airlift for exports than do other countries. OECS countries ship by air more (in percentage terms) than any Caribbean country. They also enjoy a decided freight rate advantage over all other developing countries; i.e. 6.3 percent viz-a-viz 10.2 percent for competitors. This reflects the importance that is placed on airlift in the E.C. and why it is a worthwhile effort to improve same. There are three alternatives to consider to improve the airlift system:

- o Charter aircraft in advance for so-called forward contracting sufficient cargo space.
- o Assist in financing the purchasing or leasing of an aircraft suitable for the intra-airlift system only.
- o Assist by guaranteeing a certain percentage of cargo utilization space over a specific period of time to an airline currently operating in the E.C., or one that has a fixed base, but no aircraft, or one that has aircraft, but does not currently operate in the area, but has past experience.

B. Factors Affecting Airlifts in the E.C.

Before discussing the alternatives, the factors affecting airlift in the E.C. should be reviewed. As stated in previous papers and studies, this is a chicken/egg situation. Airlift companies are not going to increase sorties (flights) unless there is a guarantee of a profitable payload (this primarily alludes to the intra island airlines) and the farmer is not going to increase production unless he is assured airlift is available, when and where they want it. It is our recommendation that the airlift question be resolved first to instill confidence in the farmers/exporters.

Loyalty to the carrier is also a must if the system is to work. Realizing it is a free market system and economically it makes sense to take the cheapest transportation, it is imperative shippers stay with the long haul (periods of time) carries and not go with the one shot deal. The exporters must realize a guaranteed schedule service can cost more, but will save more in the long run by increasing service to the import customer with a better quality and dependable supply of produce. The synergistic aspect of this confidence factor with all parties is well worth any effort and may well be the most important ingredient of the entire operation.

Other factors affecting airlift in the E.C. include the following:

- o Four of the six islands have full or at least limited airlift to international markets, only two - St. Vincent and Dominica - have to depend solely on intra airlift for rapid transportation.

- o Aircraft used for intra-island operations at the present time have no cargo space large enough to utilize standard airload pallets. Cargo on and offload is labor intensive and time consuming.
- o There are little or no cooling systems or even covered areas for perishables to be stored awaiting onward movement. Post harvest care, lackaging, pre-cooling, pre-aircraft loading procedures are poor.
- o International cargo rates are within acceptable standards. Yet there are still flights that have space, but do not carry produce because the produce did not arrive in time to meet the flight before departure.
- o Production of produce is currently at a steady rate (peaks/valleys). This makes it difficult for the exporter and the carrier to forecast long range airlift needs.
- o Costs for carriers include direct and indirect operating costs and fixed costs. Any flight without a profitable cargo load impacts on the whole cost structure affecting the provider and the user. For example, a 707 cost \$1,800.0/hr, a Convair 240 \$5-600.00, and DC 6/7 around \$1,500.00/hr. to operate. These are direct/indirect costs and drive the cost/flying hour.

The factors above are selective and there are many others that have been stated previously and will be discussed below.

C. Enhancement Alternatives to Improving the Airlift System

Each alternative below has merit but also has diminishing value when compared with the competition. A qualification for each alternative must be "experience in the Eastern Caribbean".

1. Alternative I--Establish a charter system

The establishment of a charter system for forward contracting cargo space would not be adaptable for the intra-island airlift as there is no airline with the capability. It would be difficult to schedule and the cost would be prohibitive. Charter of an international carrier over certain routes to specified times is feasible, but is even more costly. This study has determined international is not the real problem. However, it would be operationally sound to set aside 10-15% of transportation funds for this purpose.

2. Alternative II--Assist in financing the leasing or buying of aircraft for existing companies

There are three companies that have plans to lease or buy an aircraft with some type of bridging finance plan and/or subsidizing a lease package. These are all located in the E.C. area of operation. One other company has the aircraft already available.

a. Hellenair

Hellenair is a charter operation out of St. Lucia. It carries PAX and is booked by travel agents and hotels for the tourist trade. Hellenair has a plan to lease or purchase a skyvan. It has a charter to operate in the islands.

b. Eagle Air Wings Service Ltd

Eagle Air out of St. Lucia has been in the produce airlift business in the past. It has a charter to operate in St. Lucia, St. Vincent and Dominica. It has some facilities (hanger/buildings) at St. Lucia.

c. CARICARGO

Caricargo is the only full-time intra-island cargo carrier and the only airline with a charter to operate on all E.C. islands. It has had experience with various types of aircraft in the past. It presently uses the CONVAIR 20 and DC-707. CARICARGO is unable to keep up with demand for airlift. It has good fixed base facilities and vast experience in the area. Their primary problem in the past has been trying to do too much with too little.

d. Regal Airfreight Services, Inc.

Regal Airfreight Services, Inc. in Miami, Florida has a fleet of prop/jet aircraft. It has operated flying services in the E.C. since 1954. It owns several companies including Airline Freight Services Ltd. in Barbados and operates airfreight from Grenada to Miami and has more capability and resources than other airlines (airfreight) for intra-island system. It currently operates DC 6 and 7 plus CONVAIR 240's in islands.

Alternative II has possibilities. Any airline would prefer to have a source of guaranteed assisting financing for the purchase of an aircraft. An aircraft could be purchased that meets the exact needs of airlifting produce, such as a C-130 on the shorts 330 or 23A. This is not recommended, however, because the system would be locked into one aircraft that could prove to be too small or too big. Leasing is frequently used to obtain aircraft capability. It is flexible and eliminates many overhead/fixed base costs for the carrier. Of course, outright ownership is less costly over a protracted period.

3. Alternative III--Combine the best elements of Alternatives I and II

This alternative is a combination of the other two. Guaranteeing a percentage of utilization of the maximum ACL is attractive to airlines. This method allows the carrier to select the method of obtaining a suitable aircraft, i.e. lease, buy or use of existing inventory of aircraft. A carrier with several types of aircraft has the advantage in this scenario. Experience operating in the E.C. should be a qualification.

Before selecting an alternative be sure it is not one that has no escape mode. It should be flexible to allow changes - in this case, with type of aircraft and time. With this in mind, the undersigned recommends Alternative No. III with a percentage of the funding reserved, as stated previously, for international charter. The methodology for determining estimated costs is outlined in the TROPRO Programming Plan (PROP) Annex A. Aircraft equivalents were used to determine flying hour cost for budget estimates.

#### D. Conclusions

The problem of limited airlift for intra and international designations is a most serious limiting factor for the present and future exports of non-traditional produce from the E.C. Further studies would be non-productive, as action is needed now. Procrastinating will only exacerbate the problems. The people of the islands involved in this sector are disenchanted with and have no faith in the system. They voice strong doubts as to the validity of any project to assist them as they have seen these projects come and go with no results, or aborted.

Every island visited has key people who are willing, able and ready to cooperate and work toward a common goal. If an airlift system is to work, it will have to enjoy support from these people. Mutual trust and confidence are essential. All concerned will have to exercise patience and be flexible as there will be problems initially.

A high priority on each island is to form a group of farmers, exporters, carriers, and necessary government agencies that meet periodically to ensure all are "reading from the same sheet of music". It is recommended that the Department of Agriculture representative chair the initial meetings.

The meetings are necessary to determine the volume of produce for shipment, on-load and off-load destinations and an intra airlift schedule to link with sea and air hubs as required for transshipment to import markets. A successful airlift system is not possible without a schedule that is know as far in advance as possible.

Once schedules are published, all must adhere. Aircraft cannot be treated as a tax service: you call, we haul vehicle. Cargo has to be where scheduled and in the amount requested for lift. Conversely, the aircraft must be on schedule. A penalty system has to be developed and enforced on those failing to meet requirements.

Last but not least, all agencies concerned must assist in providing cargo on those legs of the route structure where produce is not lifted. Otherwise the revenue will not be sufficient to insure an acceptable return on investment.

#### E. Recommendation

Alternative No. III provides the greatest degree of flexibility to be able to respond to changes as the execution of the plan is underway. It also will eliminate prospective bidders that do not have the assets or the

experience of operations in the E.C. Obtaining a carrier with assets and experience in the area will be less costly over the long haul. Other advantages of this plan are as follows:

- o A carrier with experience in the area of operation will have key contacts in the government and private sectors.
- o Guaranteeing a certain productivity factor percentage will enable a carrier to operate in the initial and growing stages.
- o Elimination of bidders that do not measure up to the standards of the RFP will be easy. Will be obvious as far as determining which ones do not have the capabilities or management know-how to successfully implement the flying sector of the overall plan.

ANNEX 1

Strategy to Facilitate the  
Development of Exports from the Windward Islands

Annex 1

Strategy to Facilitate the  
Development of Exports from the Windward Islands

A. Overview

There are four common elements or steps in a strategy to facilitate the development of exports from the Windward Islands. These include identification of export markets, support of CATCO, development of steamship line relationships and carrying out of market analysis. These four "steps" are each briefly discussed below.

1. Market Development

- o Emphasize the North American market in quantities for pea shipments.
- o Continue selling to the U.K. market by air, not sea.
- o Do not attempt to sell into Europe.

2. Support of CATCO

- o Keep CATCO viable as a sales organization.
- o Develop and carry out a marketing plan for CATCO which involves a public relations and advertising component, establishing a sales plan, its monthly goals and audits, a flexible FOB pricing scheme based on destination market conditions, commodity selection based on highest return per unit using a strategy which includes seasonal volume shipping agreements by commodity (allowing farmers to produce with less speculation).
- o Expand CATCO's post-harvest handling expertise to include the systems needed between the packing houses and the ships.
  - Each island should have a trained local hire to manage this.
  - One week per month should be spent by an expatriat expert in each island for one year.
  - Establish an annual training reinforcement plan for post harvest handling.
- o Develop a computer network to advise CATCO daily of availability of product one week in advance - commodity, volume, and harvesting/packing data.

- o Set up daily consolidation procedures on each island.
- o Establish written procedure steps for each responsible party in the chain to know their part in good-handling practices.

### 3. Steamship Line Relations

- o Make contact with the headquarters of the two existing ocean reefer container carriers to indicate a commitment to developing reefer business by sea.
- o Contact headquarters (Miami) and overseas (Dominican Republic of Bermuth Line) to determine their interest in developing reefer service.
- o Gain commitments from carriers to use only containers which meet the standards set forth in the body of this report.
- o Establish commodity rates for each country with all carriers in accordance with CATCO's sales plan.
- o Monitor steamship line performance; inland (consolidation/loading); at origin container yard; on board ship; at destination container yard.
- o Shipment size must be increased to \$8-10,000 to minimize efficiency and profits.
- o No forward contracting, steamship guarantees, container investment or fixed port facilities need be part of the project.
- o Root crops can be processed without refrigeration in heated containers.

### 4. Carry out Market Analysis

- o Spend time in destination markets to measure adherence to standards of quality.
  - Depending on whether CATCO's marketing strategy includes sales to wholesale markets, supermarkets, food services industry or institutions, visits to the market by CATCO management are essential at least once a quarter for the first year, at least.
- o Set up a CATCO marketing task force (not board members) to fulfill oversight functions during the first year. The managing director should focus his efforts on grower/packer relation and on auditing functions, not marketing.

B. Country Specific Next Steps

1. Dominica

In Dominica, there is a strong bond between the CATCO office and the citrus and melon industries. CATCO seems to be the only entity likely to take title to goods since DEXIA is only involved with market support activities. With this in mind, the next steps should be:

- o Focus sales through CATCO.
- o Develop a plan for producing vegetables (6-8 week maturity) that will maximize cash flow to growers, rather than seasonal fruit or root crops (up to 12 months maturity). Winter vegetables are in especially strong demand in North America.
- o Make arrangements to move ocean shipments to Canada in bond via New York due to USDA restrictions on some Dominican crops entering the U.S. This requires USDA permits which are obtainable for these movements.

2. Grenada

Grenada has been declared a "fly-free area" which needs to be exploited. Anything grown can be shipped into U.S. markets (and Canada, of course) - some freely, some needing an obtainable permit.

- o Utilize Granada's marketing house with a new, aggressive Sales Manager who can make sales into the international markets in lieu of (or in behalf of) CATCO, if CATCO chooses not to place a sales presence there.
- o Exploit Possibility of shipping fresh and frozen seafood - up to \$30,000/day - through direct sales for the fishing fleet owner into the U.S. market by sea, when ocean transportation to Miami and New York is established.

3. St. Lucia

- o Either CATCO must open a sales office here or independent traders must be encouraged to participate in a computerized network which can establish the availability projections of each commodity. Daily offerings to the North American market must be made and product should never be shipped on speculation.
- o The St. Lucia Marketing Board is too weak to do the required job. It should either be rejuvenated or it should be restructured and be limited to market support activities only. Several private traders seem to be competent to work

effectively, so long as reputable North American receivers are found.

4. St. Vincent

St. Vincent is a USDA "fly-free area" which allows any commodities to move into the U.S., either freely or with permit. This island presently has more volume of fresh produce moving into North America than the other OECS countries due to one shipper having a well-established receiver (relative) in Canada. Condition on arrival will improve when pea shipments are established, with more revenue passed to the farmer. This will expand the total volume shipped.

- o Encourage the several traders to establish close relations with reputable U.S. receivers in volumes which justify ocean container shipping.
- o Have CACTO designate one or more affiliates with existing traders.

ANNEX 2

**BASIC PLAN  
to  
TROPRO PROGRAMMING PLAN (PROP)**

1. OBJECTIVE. To develop an intra-island and international airlift operation to support the exporting of produce from the E.C. designated countries. This PROP concerns intra-island airlift only. International airlift support is not a problem at this time to warrant dedicating funds for blocked space.
2. General Situation. There is insufficient airlift capability within the E.C. Area of Operations (ECAO) to support the current produce available for export and of utmost importance the expansion of productivity of produce throughout the area. Airlift will be to produce assumed airlift to sustain a reliable service from ..... produce areas to ports of ..... to include air to air and air to sea hubs. Initial operational capability (IOC) is defined as the date the first airlift mode is scheduled to operate.
3. Planned Course of Action. Concept of operations is in Annex Alpha.
4. Operations/Program Management. The office of primary responsibility for this document is the USAID PMT.
5. Execution. This PROP is effective upon receipt. Direct communication between the PMT manager, designated agencies and USAID is authorized.
6. Environmental Consideration. USAID environmental staff has determined this action is not expected to have significant environmental impact.
7. Public Affairs. Initial announcement concerning this program will be made by USAID as necessary to meet current directives.
8. Request for Proposal. A RFP will be developed within AID and forwarded to interested and designated bidders by ..... This action has top priority for development completion.
9. Request that users of this document advise the office of origin of any factor which may seriously limit its execution.

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TROPRO PROGRAMMING PLAN

Report Format

Subject: TROPRO PLAN xxxx report as of .....

Part I - Update Data

This report includes the actual or rescheduled (if applicable) start and completion dates of milestones/activities since the last reporting period. Indicate causes for late and/or rescheduled starts and completions and anticipated impact.

<u>Milestone</u> <u>/Activity</u>	<u>Start Dates</u>		<u>Completion Dates</u>	
	<u>Actual</u>	<u>Rescheduled</u>	<u>Actual</u>	<u>Rescheduled</u>

Part II - Problem Areas

1. Statement of problem/potential problem
2. Reason problem exists or is anticipated
3. Corrective action taken or anticipated
4. Get well date
5. Impact on objective
6. Request for assistance if required

This section will include a narrative summary for actions not covered by time/phased milestones, and other general comments.

ANNEX ALPHA  
to  
TROPRO PROGRAMMING PLAN

Concept of Operations

1. General Situation. The ..... will be responsible for the deployment of sufficient aircraft to meet the airlift requirements in support of Eastern Caribbean intra-island movement of specified cargo. The principal area of operations (AO) is that which includes Antigua and Barbuda, St. Kitts and Nevis, Dominica, St. Lucia, St. Vincent and the Grenadines, Grenada and Barbados.

2. Mission.

(a) Aircraft, aircrew and maintenance personnel will be located at ..... to establish regional airlift to support the airlift of agricultural produce in the AO. Other cargo will be accommodated as required to insure high utilization of aircraft cabin loads (ACL) for purpose of economy.

(b) Airlift schedules will be developed between the ..... and the Project Management Team (PMT). These schedules will be developed to provide the best possible real time airlift to meet the needs of each island's requirements. This schedule will be coordinated with the designated agency of each user.

(c) The PMT will be established at ..... to monitor and evaluate the overall operation.

3. Aircrew Manning.

(a) ..... will provide sufficient aircrew personnel to meet the needs of an initial schedule of four days/week with enough crew day time to meet a schedule of 6-8 hours per day. (See .....).

West Indian and/or Caribbean flying experience is desired, but not mandatory.

(b) After initial operational capability (IOC) is achieved ..... will adjust manning as needed to sustain the required schedule.

4. Logistics Support. ..... will provide their own maintenance support as needed. This includes maintenance away from the main operating base (MOB). Spare aircraft will be provided to ensure mission accomplishment where an aircraft is down for maintenance or undergoing phase/time inspections or any

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other maintenance that takes the aircraft out of the system.

5. Transportation Support.

(a) ..... will provide own vehicle support.

(b) Cargo will be processed and handled by the users designated agent at each terminal. .... will insure proper loading for air shipment and appropriate documentation is completed.

(i) The PMT and ..... will jointly monitor this action and make required changes to standardized procedures.

6. Personnel. The PMT will consist of adequate personnel to meet the requirements for the overall monitoring and control of this plan until IOC is achieved.

(a) AID will insure personnel actions are completed in a timely and orderly manner.

7. Management. AID will designate a program manager and ..... will provide the name of their overall person in charge to represent them on a daily basis. this person must have the authority to speak for ..... and be able to make real timely decisions on day-to-day operations and forecasted schedules and plans of operation.

(a) Reporting Procedures. The designated managers will report and update data/problem areas/comments on this program as of end of month-end to arrive at AID, information copies to other agencies as designated and appropriate.

(i) Reporting will commence upon receipt of this plan in accordance with (IAW) the scheduled starting date as established by AID. Report format is at Attachment 1.

(b) Responsibilities. AID will identify and assign a program manager with the responsibility for the overall management of the program.

8. Operations. See Annex Bravo.

9. Comptroller. See Annex Charlie

10. Communications. See Annex Delta.

ANNEX BRAVO  
to  
TROPRO PLAN

Operations

1. General. This Annex provides guidelines for accomplishing the actual airlift of agricultural products from designated points to transshipment hubs. It should be remembered that cargo other than produce must be developed for airlift on those sorties where produce is not available and/or there is space remaining.

2. Actions Required.

(a) The PMT in coordination with the carrier will:

(1) develop a route structure and monthly aircraft schedule to meet requirements of maintaining a sustained airlift (cargo) operation. (See Attachment 2 and 2A)

(2) develop a daily flying hour program with the designated carrier to meet requirements. (See Attachment 3 and 3A)

(3) monitor actual flying hour, cargo lift totals viz-a-viz scheduled requirements. (See Attachment 4)

(4) ensure a flexible response if required to meet airlift needs.

(5) determine location of and operational facilities requirements. (See Attachment 2 for recommended location)

(6) develop a designated operational capability (DOC) statement.

(b) USAID will:

(1) ensure proper control and monitoring procedures are developed to exercise real time monitoring of the entire operation. This will ensure centralized control and all decentralized execution.

(2) establish a reporting system to ensure the above item (1).

(3) provide assistance and guidance only when necessary to include (but not limited to) responsibilities, administrative requirements, and any actions needed to make changes to this plan in order to expedite and/or enhance the program.

(4) coordinate through a designated representative

(PMT/CATCO) with host countries and commercial agents to promote cooperation and support of this plan. This is key and essential for the good order and success of goals set by the original intent.

3. Responsibilities. All parties involved in accomplishing the objectives of this Annex will assume the responsibilities as outlined herein or in the attached. AID will be advised immediately by the PMT of any impending areas and/or difficulties encountered that might delay or prevent these actions.

pages

**ANNEX BRAVO  
Time Phased Actions**

<u>Milestone</u>	<u>Description</u>	<u>OPR</u>	<u>Start</u>	<u>Complete</u>
T-001	Develop MOB (Main Operating base	PMT/ carrier		
T-002	Schedule/set Date for briefing of Island agencies involved and carrier	PMT		
T-003	Develop flying Hour program to meet schedule and maximum crew day	PMT- carrier		
T-004	Establish procedures to insure positive monitoring of airlift schedule/flying hours	PMT- carrier		
T-005	Establish procedures for monitoring cargo lifted viz-a-viz scheduled	PMT- carrier		
T-006	Establish procedures to provide flight departure and arrival information	Carrier		

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pages

ANNEX BRAVO

T-007	Design a DOC	PMT- carrier
T-008	Develop procedures to ensure proper control and monitoring procedures are developed	AID
T-009	Develop reporting procedures for T-008	AID
T-010	Develop a plan to coordinate intra- island schedules with international carriers	PMT- carrier

These milestones can be deleted or added to in order to meet overall requirements to ensure program start and continue execution.

ANNEX CHARLIE  
to  
TROPRO PLAN  
Comptroller

1. General. This Annex outlines Comptroller actions and responsibilities required to execute this plan and monitor ALL phases of implementation. This includes start up and follow on execution.
2. Actions Required. Funding responsibilities will be as stated in AID ..... Funding documents will be issued by AID according to accounting and finance rules and regulations.
3. Responsibilities. AID will provide assistance if required in resolving problems encountered by action agencies. All agencies will ensure proper accounting procedures are followed without exception.

ANNEX CHARLIE  
Time Phased Action

Milestone	Description	Agency Action	Date Start	Complete
T-001	Develop cost analysis of entire plan	AID		
T-002	Develop bed-down cost of PMT	AID		
T-003	Develop cost resulting from bed-down and start- up of airlift program	AID/PMT carrier		
T-004	Develop fixed base and cost/flying hour	Carrier		
T-005	Review for approval or disapproval of T-004	AID		
T-006	provide funding for administrative support costs for initial cadre of PMT	AID		

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ANNEX DELTA  
to  
TROPRO PLAN

Communications

1. General. This Annex provides communications and air traffic control guidance to assist in implementation of basic plan.

2. Actions Required.

(a) All common user/dedicated voice and data communication requirements shall be identified and forwarded through appropriate channels for validation and funding.

(b) Air/ground communication (VHF, HF) will be according to local regulations and will be the responsibility of the designated carrier (airline).

(c) Voice/data link from PMT to AID, carrier (airline) and each island agency involved will be determined by AID and PMT. This communication must be real time, reliable, point-to-point, and high density quality.\* The PMT will identify long haul communications capability if funding is available.

(d) PMT will identify communications requirements to AID and budget for any locally leased costs for special commercial requirements which are approved by AID. Contact airlines in area to determine best and source of reliable communications.

3. Responsibilities. Responsibilities for the action items are outlined in the attached time/phased actions.

\* This writer has been informed that telephone is currently the most economical and rapid means for ground to ground service.

**ANNEX DELTA  
COMMUNICATIONS  
Time Phased Actions**

Milestone	Description	Agency Action	Date Start	Complete
C-001	Validate and program funds for dedicated communications needs	AID		
C-002	Identify all voice/data and radio communication required for this Plan	PMT- carrier		
C-003	Program funds for validated communication capability in C-002	AID		
C0004	Forward frequency requirements to AID, PMT, local agencies	Carrier		
C-005	Submit telephone requirements to local sources	PMT- carrier		
C-006	Develop a need and cost plan and submit to AID for fixed ground air communications	PMT- carrier		

ANNEX ECHO  
to  
TROPRO PLAN

Organization

A. General. The infrastructure for centralized control and decentralized execution can be organized in several configurations. The budget constraints dictate the system selected be lean but active. Whatever the system selected it must have good communications.

B. Recommended Organization. Annex K Figure K-2 Page 12 of the TROPRO Study is the model recommended. It explains all the necessary actions required to operate the system. (Attachment 1). The control, monitoring and daily execution is as outlined in Attachment 2.

(1) Execution. Annex K Page 14 of the above study covers all bases quote: "The operation will require constant communications among the participants in the transport system and intense involvement of a highly qualified core management team if the company is to be successful and shippers are to receive the type and quality of service they require to develop the tropical produce export industry".

C. Planning. Initial planning of airlift schedules begins with the customer's needs. To determine these needs a quarterly meeting should be held on each island with the Ministry of Agriculture's representative, the farmers, exporters and freight handlers' representative, and a representative from the carrier and PMT. Coordination with each island's Minister of Agriculture to chair each meeting is necessary in the initial stages.

APPENDIX A  
to  
TROPRO PLAN NUMBER .....

ASSUMPTIONS AND METHODOLOGY USED IN AIRLIFT CALCULATIONS

1. GENERAL. This Appendix examines the capabilities of various airlines and associated aircraft available. The real capability of any airlift system is a function of several complex factors beyond the numbers of planes available and their lift potential. The distance flown is a major determinant of the time, frequently known as closure time required to complete a scheduled flight or flights.

A. The methodology used in this paper provides a framework for evaluating airlift operations on the basis of general performance characteristics. Basic assumptions have been held constant so as not to prejudice performance of any particular source of airline capability.

B. Planning variables fall into three categories:

(i) those specific to the means of transportation (aircraft variables);

(ii) cargo transported (cargo variables); and

(iii) the routing used in an operation (route variables) which include landing and freight carrier rights.

C. Planning factors can only approximate the many variables that affect delivery schedules in actual operations. In table form the airlift variables can be shown as:

<u>AIRLINE</u>	<u>AIRCRAFT TYPE</u>	<u>a/ UTE/RATE HRS/DAY</u>	<u>b/ PRODUCTIVITY FACTOR</u>	<u>c/ PAYLOAD LBS</u>	<u>AVAILABLE</u>
CARICARGO	C-123	8	85%	30,000	Possible
	DC-4	8	85%	10,000	Possible
LIAT	AVRO	8	85%	2,000	Now
EAGLE WING	PROJECTED TO HAVE BEECH 18 UNSUITABLE FOR THIS PLAN				
AIR SERVICE	NOMAD 24a	UNK	100%	3,500	Projected
	DC-3	10	85%	10,000	Projected

HELLENAIR	SKYVAN	10	100%	4,600	Projected
REGAL AIR-	DC 6-7	8	85%	30,000	Now
FREIGHT	DC 3	8	100%	5-10,000	Now
SERVICE					

A C-130 would be excellent for this operation, but it is doubtful if there is one available. It is also costly, at \$1,800 per hour, to operate.

- a/ These are the rates normally associated with commercial aircraft with a four day schedule of forty hours per week. This is well within reasonable programming. Higher rates can be attained with greater inventories of spare parts and more crew members and maintenance personnel.
- b/ Productivity factors will be the prime element in determining the guaranteed payback to the carrier. The more productive the flight the lower the cost to the project. An estimated 75% of Aircraft Cabin Loan (ACL) payback ON TOTAL ACL is a reasonable planning factor. Initially the UTE rate will probably be low until customers are familiar with and have confidence in the system.
- c/ Payloads are the maximum for this matrix. Any airplane can lift a given amount of weight, consisting of the plane itself, the cargo, and the fuel on board. A direct trade-off exists between the quantity of fuel and the quantity of cargo. The distance associated with the routes of this plan do not require a full fuel load.

2. CARGO VARIABLES: Cargo variables are limited to weight and cube. Some cargo will have cube and high weight and others just the opposite. This can cause an aircraft to weight out before it bulks out or vice versa. These factors can very well impact on the productivity factor.

3. ROUTING VARIABLES: There are two primary routing variables, distance to the destination and the "critical leg", which is the longest distance the plane must travel without refuelling. Due to the short distances involved in this route structure, it will not be a factor.

Using the factors as a general base the aircraft in Table 1 are the type suitable for this plan.

TABLE 1

<u>AIRCRAFT</u>	<u>REASONS FOR SUITABILITY</u>
C-123	Payload/range/landing/take-off capability
DC 6	Payload/range/landing/take-off capability
DC 3*	Payload/range/landing/take-off capability
*	Cargo capacity is low, but it is a good shortfield take-off/landing aircraft. Also cheap to operate when compared with other aircraft.
C-130**	Payload/range/landing/take-off capability
**	The C-130 would be excellent for this plan, but it is expensive to operate and availability is not certain.

4. OPERATIONAL COSTS: The factors listed are basic to aircraft operations. Fixed base cost were not included, as this cannot be determined and the successful bidder should be one with suitable facilities already in place.

(a) Operating costs normally considered: fuel, oil, crew expenses and salary, maintenance personnel and parts, ramp fees, insurance, engine reserves, airframe/avionics maintenance and unscheduled maintenance.

(b) These costs determine cost/hour to operate the aircraft and are normally defined as either direct or indirect fixed costs.

TABLE II

FIXED COSTS (OPERATIONAL COSTS)

<u>DIRECT</u>	<u>INDIRECT</u>
Fuel	Crew salary
Oil	Mechanic salary
Engine Reserve	Insurance
Airframe/Avionics Reserve	
Unschedule maintenance	

Engine reserves normally average 10% of hourly cost with 05% for airframes/avionics and 06% for unscheduled maintenance.

FIXED BASE COSTS

Cost are for company quarters, management overhead, utilities, charter service and minor flight equipment and other miscellaneous expenses. These costs can vary drastically and for this plan were not considered for reasons given previously.

TABLE III  
ROUTE STRUCTURE FLYING HOURS

<u>ROUTE</u>	<u>DESTINATION</u>	<u>TOTAL TIME</u>
No.1	St. Lucia, St. Vincent, Grenada, Barbados, St. Lucia	2:52
No.2	St. Lucia, Dominica, St. Kitts Antigua, St. Lucia.	3:38

The times indicated are for a C-123, the times for a DC 6 are lower at 2:09 and 2:35.

TABLE IV

<u>AIRCRAFT</u>	<u>COST/\$HR</u>	<u>HRS FLOWN</u>	<u>YEARLY COST</u>	<u>REVENUE \$</u>	
				<u>ACL 100%</u>	<u>ACL 75%</u>
C-123	510	676	344,760	624,000	468,000
DC 6	1,500	494	741,000	998,000	748,800
DC 3	400	734.4	295,360	312,000	234,000

A. The aircraft shown are considered those that are possibly available for intra-island airlift. The DC 6 is also capable of international flights. The C-123 has very excellent landing and take-off capabilities from short fields and is built for easy on-off loading. It is certified at 30,000 lbs. but a more realistic load factor is 20,000 lbs. The DC 3 is shown to reflect a slower aircraft with a smaller ACL capacity.

B. The DC 6 owned by Regal AirFreight has been modified with 727 landing gears and an improved power plant to provide capability to operate from 5,000 ft. airfields, such as St. Vincent and Dominica have.

C. Revenue was calculated at \$0.15 U.S and the ACL at 100% and 75%. Recommend this plan to guarantee a utilization productivity factor of 75%.

D. Cost per hour is subject to fluctuate up or down, depending on fuel/oil pricing.

Other direct and indirect costs are also subject to very sudden changes. Regardless do not, repeat do not allow fixed base costs to be charged to this plan.

ANNEX 3

Island Characteristics that Impact on Plan

## ANTIGUA

1. General: Antigua airfield can accommodate international as well as intra aircraft. Antigua exports are at a standstill according to the two largest exporters CATCO and the Antigua Marketing Corporation. The two directors are quite vocal in their thoughts concerning the production and marketing of produce.

(a) They are convinced the government needs to play a more active role. The government needs to encourage the farmers to grow what the export market wants. To date the farmers go their own way. CATCO tried to organize a group, but only two showed for the first meeting one left after a few minutes.

(b) Both stated that Antigua and St. Kitts place a high priority on tourist business. Both islands will have to irrigate to improve crop production year round. CATCO is actively involved in assisting one to irrigate a 200 plus acre farm. All the equipment is in place except for 6000 ft. of 5 inch pipe. Many farmers request airlift and then at the last minute cancel out when they are able to get higher prices on the local economy. This is just a capsule of the produce production story.

2. Transportation: There is more than adequate sea and air capability for international shipments BA has 3 flights/week to UK, BWIA one each day to Miami and Canada and two per week to the UK, and Air Canada one per week to Toronto. American Airlines has space on 2 flights per day to N.Y. and N.J. but there is no product to ship. LIAT and CARICARGO provide intra-island but are unreliable CATCO/AMC receive little or no produce from St. Kitts for transshipment.

3. Ministry of Agriculture: The Director of Agriculture realizes that the government has to play a more meaningful role. His goal is to provide incentives to farmers to grow non-traditional crops as the markets are there. Irrigation projects are needed as the quality of produce now provided is poor. He believes air transportation is currently too high from Antigua, but also realizes that a sustained volume of produce to ship is needed to demonstrate to the carrier that the cargo will be available. He and the exporters believe getting the farmers together and work as a team is a difficult task.

4. Conclusion: Intra airlift is no problem and Intra in Antigua has their own internal problems for improving production of non-traditional produce.

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BARBADOS

1. General: This is a center of airlift capability for both intra and inter flights. All the major airlines servicing the W.I. transit Barbados on a regular schedule. For the purpose of this paper only BA, BWI, Pan Am, Air Canada, American Airlines were considered a scheduled airlines. World Air and CARICARGO are non-scheduled. LIAT and CARICARGO were the primary intra-island carriers. (see Table I)

(a) The two prime exporters in Barbados are CATCO and the Barbados Marketing Corporations (BMC). Both are active in marketing and consider their primary problems as produce availability and airlift.

(b) The two cargo/freight handlers, well experienced in produce lift, are Seawell Air Services Ltd. and Airline Freight Services Ltd. (see 7 (a)). Seawell has been extremely active in obtaining lower rates for airlift and increasing space. They just concluded arrangement with Pan Am for a cost of \$40 US/kilo (.80.00). This is an acceptable rate.

2. Barbados Marketing Corporation (BMC) This seems to be a very active organization with strong dedicated leadership at the airport offices. The leadership was certainly knowledgeable and eager to cooperate.

Their exports of non-traditional produce in the fiscal year just concluded was up by 50% over the previous year.

<u>Carrier</u>	<u>Cargo wt (lbs)</u>	<u>Cost/lb</u>
BWIA	330,600	\$.17 US
World Air	305,424	\$.16 US
CARICARGO	9,954	\$.11 US
American Airlines	3,084	\$. ? US
British Airways	Did not use	

Manager believes the market is open for even greater increases (50-75%). The market is open. Miami importers ask for more produce but lift is not available. BMC could ship an additional 40,000/week to Canada if lift were available. They are using none water transportation to UK.

3. CATCO Has the potential to be the leading exporter in the Eastern Caribbean Not only buys and sells but provides technical assistance to farmers, other exporters and farmer groups.

(a) CATCO officers believe increased production is real providing the farmers can be convinced there is sufficient transport available.

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(b) CATCO has little problems with international lift. They enjoy increased cargo space during the peak tourist season.

(Note: CATCO should be considered as overall monitor of the project)

4. Barbados should be an excellent HUB but would have to change its attitude towards allowing air carriers (inter-island) to operate.

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## GRENADA

1. General: Grenada has the best airport facility capability in the Eastern Caribbean, but has the least international flights. The lack of airlift seriously impacts production for exports.
  
2. Transport: BA provides one flight per week with space for 10-15,000 lbs. Cost is \$0.29 U.S./lb. BWIA has a weekly flight to New York, but has limited space, usually 1,000 lbs. Cost for this low space is prohibitive.
  - a. LIAT Airlines provides the only intra-island lift. This capability is used to ship to Barbados for transshipment to the U.K. Average lift is 5 tons/week total on four flights.
  
  - b. LIAT Airfreight has a very aggressive cargo manager. He works closely with all means of airlift and exporters to increase produce exports. He was very instrumental in negotiating REGAL Airfreight Services props airlift services from Grenada to Miami with a 30,000 lb. space capability each week. The Progressive Farmers Group ships an average of 5 tons per week through LIAT's freight handling system. The Grenada Marketing Board (GMB) is the largest shipper with 300 tons/year.
  
3. Exporters: Grenada Marketing Board, managed by very aggressive and dedicated people. They state exports are limited by lift capability. Due to the lack of international lift from Grenada they have to tranship to Barbados. Lack of proper storage capability while awaiting airlift at Barbados causes unacceptable losses. (See Attachment 1).
  
4. Ministry of Agriculture: This agency received high marks from the exporters. The Director of Agriculture has many aggressive programs to stimulate farmers to diversify produce production to meet market needs. They do need to resolve a landing rights problem concerning cargo arriving from St. Vincent. LIAT and CARICARGO are the only intra-island airlines that have blanket landing rights approval. If Grenada is to play an active role in the overall plan of enhancing produce export they will have to have reciprocal agreements with all islands.
  
5. CONCLUSION: The primary problem here is intra and to some degree, international airlift. The international will be improved greatly when American Airlines begin their new schedule of a flight per day in November. Grenada is a prime hub for the airlift system.

## ST. LUCIA

1. General: St. Lucia has airfield facilities for international and intra aircraft, though airfields are located at least one hour by road from each other. St. Lucia's potential production for export is limited by intra airlift and market availability. The exporters are active and play an important role in the farmers non-traditional produce productivity.

2. Transportation: St. Lucia does not have to depend on intra-island airlift capability as do others, they do require regular lift to Barbados and Grenada however to tranship produce to carriers that go to markets not connected to certain import locations. There is also a lack of space on inter carriers during the peak harvesting season.

### International schedules:

- a. BWIA - 2 per week 3/5 tons flt UK and NA
- b. BA - 2 per week, 3 peak tourist season, to UK  
30-50 tons weekly.
- c. Air Canada - one to two per week depending on season.  
Wide bodied are used during season and can  
provide 20,000 lbs per lift.
- d. Air Antilles - one 707 per week to Atlanta, Georgia.

Note: BWIA often has no space due to load out at Port-of-Spain. Exporters could use 5,000 kilo increase weekly to Canada. Also, exporters have no reliability in CARICARGO.

3. Exporters: The largest independent exporter in St. Lucia is TNT Produce (Import/Export) Ltd. He does not have enough international space during peak harvest season so has to ship to Barbados for transshipment to UK/NA. During peak tourist season he can obtain enough lift. He would like some direct life to the U.S. He works closely with CATCO. Believes the produce can be available year round if transport was capable. Recommends the government promote a plan to have the farmers, exporters, carriers, and other interested agencies get together in order to cooperate and plan to achieve a common goal.

4. St. Lucia Marketing Board: The manager has been on watch since 1977. He knows the business inside and out. Has strong reservations about any plan to improve transport. He has heard them all and says the farmers feel the same way. Some of the comments are listed.

- a. Problems is not production, but markets and airlift. Especially markets in the U.S. little or no airlift direct to U.S.
  - b. The farmer must be convinced there is a market and transport if he spends money and effort for diversification and increase of produce.
  - c. Not concerned with intra lift as much as international.
  - d. Prefers airlift to sea even though more expensive.
5. Government: Pursues progressive programs to improve overall production and quality of scheme. They have a program to produce substitute and exportable produce. Sixty farmers have been identified for the program and will be assured a guaranteed income (subsidy).

## ST. VINCENT

1. General: There are no international flights due to the lack of runway length and support facilities. This is a key point to consider as St. Vincent is the largest producer of produce for export in the Eastern Caribbean region. Intra-island airlift becomes extremely important to St. Vincent exporters. The shortage of airlift is most critical at this location. With sufficient airlift the production potential of St. Vincent is unlimited.

2. Exporters: St. Vincent exporters are continuously trying to find means to move produce to international hub airports. They are disillusioned with the many projects over the years that were going to "improve transportation". There are no cargo traffic/handling companies. Each exporter handles transportation to the airport and loading of the aircraft.

(a) The prime airlift is CARICARGO, with limited capability from LIAT and Mustique Air. LIAT is a space available status and Mustique Airline is by special charter. Eastern Caribbean Agencies Ltd. (ECA) are currently using CARICARGO three to five times weekly and really need five flights (average 15,000 total/week). LIAT provides an average of 3,000/week and Mustique 5,400 lbs. with three flights/week. All flights are to Barbados for markets in the United Kingdom, Canada and the United States. ECA can double the produce immediately and triple it within a short period of time. ECA discontinued work with CATCO due to a lack of direction. ECA volumes are typical of the airlift needs of the many exporters in St. Vincent.

(b) The St. Vincent Marketing Group is by far the best organization of that discipline. The manager is aggressive and inventive. He is constantly working new programs with the farmers. He works the international markets and has had such success that importers call him for produce. The U.S. market is one his more lucrative areas.

3. CONCLUSION: St. Vincent produces more than all the rest of the islands together. The entire infrastructure of farmers, exporters and the government have got their act together. Their primary need is intra-island airlift as the potential productivity is triple the current totals. St. Vincent could well be the center of the intra-island operations, but the size and facilities at the airport is a negative of some concern. Of particular concern is the runway length and prevailing winds which limit take-off and landing minimums.