Proposal for a new Isles of Scilly shipping service

TRYTHALL SHIPPING

SHIPPING CONSULTANT`

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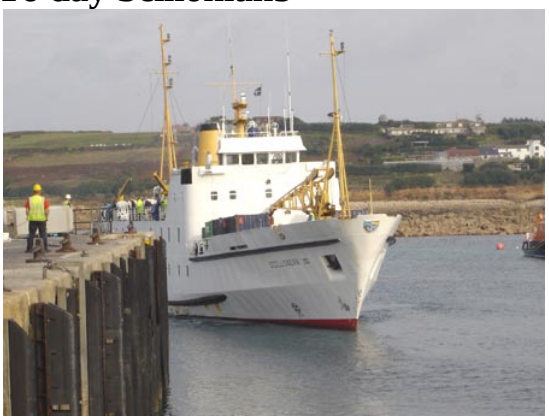
Date 01 June 2009

To day Scillonian3



Tomorrow fast passenger ferry?

And an
Efficient Roll on Roll off freight service?

ALTERNATIVE PROPOSAL FOR A NEW ISLES OF SCILLY SHIPPING SERVICES

Executive summary
The scheme about to be implemented by Cornwall Council is for the council to buy a new combined cargo and passenger ship bigger than the current Scillonian 3 and requiring substantial infrastructure work both at Penzance and St Mary's to accommodate it. The total costs of the scheme exceed £40million and up to £20million of this may well have to be to be funded by local mainland Council Tax Payers.

My proposal is for a much lower cost scheme, and reduces the financial contribution required from local and national government. It would be self financing, and provide an enhanced service for passengers and freight at Penzance and St. Mary's, and a substantial reduction in road traffic through both towns. My scheme takes account of future reductions in the mobility of potential customers arising from the increasing costs of road fuel and will enable flexible timing of passenger voyages to connect with the excellent train services available at Penzance. Operation from Albert Pier, adjacent to the existing transport hub will enable the passenger service to integrate with mainland train, bus and coach services and provide convenient car and coach set down and parking for customers and comply with government guidelines for new transport infrastructure

I propose an already designed very fast passenger ship, built to the specific design criteria for the Isles of Scilly route, available for purchase now with very low operating hours to date and already proven in service elsewhere. Like the helicopter and aeroplanes it would operate a varying number of trips per day depending on seasonal demand, with a one way voyage time, quay to quay of 95 minutes. At the height of the season there could be up to four departures from Penzance on busy days at four hourly intervals. The sea keeping ability of this vessel is phenomenal and already proved and she would have no difficulty in providing a fast comfortable voyage in the prevailing sea conditions, with a much reduced incidence of sea sickness compared with the conventional hull design that Cornwall Council intend to buy, which will be slow (2 hours 35 minutes journey time) and uncomfortable in the prevailing North Atlantic swells..

This enhanced speed and sea keeping of my proposed fast ferry will enable an imaginative sailing programme to call and pick up day trip passengers from most Cornish ports, including Newquay and Falmouth. The much reduced journey time and improved sea keeping will be a new tourist attraction for West Cornwall and rejuvenate the failing day trip by sea business and provide a much needed viable alternative to the ageing Helicopter service.

At Penzance much needed dredging would allow maximum use of existing facilities and require only minor civil engineering works, without the need to in fill and reclaim land to the East of the Jubilee Pool, as proposed by Cornwall Council in the recent planning application. My scheme makes maximum use of existing facilities and an out of town store and forward freight facility will reduce traffic at Wharf road and enhance health and safety both on the quays and around the various tourist oriented facilities in the Harbour area.

I propose a completely new and integrated freight forwarding, stowage, and distribution system, using modern Roll on Roll off handling and distribution methods that would remove the need for freight vehicles to use St. Mary's Quay, will eliminate the multiple handling of goods, and will enhance the peace and tranquillity of the quay and streets and the ambience of the Islands for visitors.

I propose a special ship known as a Stern Landing Vessel (SLV), to provide a daily (overnight) service to St Mary's, and off islands, with direct bulk deliveries to Tresco, as and when required.

The total capital cost of my scheme, including ships and infrastructure is **£16 Million,** compared with the Cornwall Council proposal which is expected to cost **£43 million** with much higher annual running costs.

Outline of proposal

Note the following pages of necessity give detailed explanations of the main points, however a great deal more information is available and could perhaps be better explained at a question and answer session

Contents

1) Background Summary

The statistics of passenger and freight traffic are well covered in numerous reports prepared by others over the years and the passenger traffic is analysed at section 7. There are conflicts between the needs of passengers and the needs of freight customers and there are economic disadvantages to operating a combined passenger and freight vessel. The Cornwall Council combined vessel would be restricted to the needs of the freight timetable and opportunities for more flexible schedules to develop new passenger traffic flows for day trips and integrating with rail services for long stay visitors would be lost.

A passenger ship is considerably more expensive to build and operate than a freight only ship. These higher costs include crewing, insurance, regulatory compliance, depreciation, fuel, and engineering. These latter two are because to be competitive in modern society a passenger ship needs speed which in turn means horsepower and fuel and these cost money. It makes absolutely no economic sense to use an expensive passenger ship to push freight to and from the islands throughout the year.

My proposal includes laying up the passenger ship in the winter months, (normally November to late March). This reduces wear and tear in the ship which mainly occurs in the winter bad weather, and enables in house maintenance to be done, permanent crews to take leave, and seasonal crew to be laid off.

A passenger ship earns its keep carrying passengers at sea. If the same ship has to spend large parts of the working day tied up at the quay loading and discharging freight, then its earning potential is reduced.

The needs of passengers vary. Those travelling West for a holiday need a departure from Penzance later in the day. Those departing the Islands to travel home on the mainland need a departure from the Islands earlier in the day. Day trippers on the other hand need a departure from the Mainland by mid morning, a reasonable, say four to five hours stay on the islands, maybe more if visiting off islands or Tresco and an arrival back in good time for an evening meal at their mainland accommodation.

The new era of high motoring costs will reduce the mobility of visitors to Cornwall and it is unrealistic to assume that day visitors to the Islands will all be able to come to Penzance. To maintain and increase day visitors the vessel will need to be able to call and pick up at other Cornish ports, at flexible times of day and to do this will need a service speed of at least 25 knots, and not be hampered with the need to stay tied up at the quay loading and discharging cargo.

Freight on the other hand travels to Penzance via normal mainland channels and arrives throughout the working day. Hence loading and departure before, say, 4.30 PM is not convenient for freight deliveries. A combined passenger/ freight ship would have to leave PZ by 10.30 AM at the latest to meet a minimum of passenger needs and much freight traffic would be left behind. My proposal enables all freight to be delivered to the Islands overnight in the summer tourist months without the disturbance of noise or traffic there, and with minimal traffic through Penzance and the busy wharf side.

Actual figures and costs are included at section **3** of this report. My proposed freight service is economically viable in its own right and the new handling and delivery methods of operation will enable substantial savings in manning and costs, and possibly a reduction in current freight charges

Optimising the use of existing infrastructure will reduce the start up costs and the need for building intrusive new structures at the sensitive waterfront areas at both Penzance and Hugh Town.

On the passenger side a fast “passenger only” vessel will enhance the service and will encourage new business, examples are:

A substantial reduction in voyage time to below 100 minutes. Several studies of human behaviour have demonstrated that journey times in excess of 2 hours discourage travellers

.
The option of a longer stay on the islands for day trippers, and arrival back on the mainland in time for an evening meal, coupled with a substantial reduction in traffic and congestion at Hugh Town will enhance the attraction of the day visit.

Departures from Penzance and from the Islands at times more suited to the needs of long stay visitors travelling on by car or public transport will be possible.

A much faster vessel, not tied to the needs of freight carrying, will be able to pick up day trippers to the Islands from other Cornish Holiday centres, eg Newquay on certain tides, Falmouth, Mevagissey and Padstow

Similarly the vessel proposed here will be able to undertake evening coastal cruises from and to these ports in the long summer evenings, and possibly on Sundays to Charlestown and Fowey and The River Fal to Truro. This will be a brand new visitor attraction for West of Cornwall. The operators of passenger vessels in other parts of the UK confirm that there is a substantial demand for such cruises, but at present non are available West of Plymouth / Bideford.

The comfort and ambience of the vessel with its fully upholstered accommodation, with air conditioning, low noise levels and minimal heave and pitch will replace the poor sea keeping and lack of comfort at present offered, or proposed by the Cornwall Council scheme.

This speed and comfort will provide the now much needed viable substitute for the Helicopter service which has a doubtful long term future due to the age of the few remaining S61 helicopters.

2) Disadvantages of a combined freight and passenger service.

The current proposal by Cornwall Council is to replace the existing two ship service with a combined passenger and freight vessel operating all the year, summer and winter. Although this was originally perceived by them to provide a reduction in operating costs and an improved level of service this is not so when all factors are taken into account, and a recent report to The Isles of Scilly Council Transport Strategy Select Committee (14 March 2008 para. 2.4) clearly states “the (*new)* vessel purchase does not appear to be commercially viable”. A similar statement was presented by the County Treasurer to the executive meeting on 5 March 2008, agenda item17. This should be no surprise and is precisely why The Company changed over to the two ship system in the late 1980's which continues to this day.

On the income side it is a fact that very few islanders choose to travel by sea, most preferring to fly, in spite of the higher cost. It is also a fact that when a sea passenger service was provided in the winter months, the numbers of fare paying passengers were often in single figures. Even potential customers with free passes chose to pay to travel by air. None of the recent studies have indicated that this situation is likely to change in the future.

There is absolutely no point in operating a passenger service by sea in the winter months. Passenger ships are expensive to run. The authorities require appropriate crew levels irrespective of the number of customers travelling. Pushing an almost empty passenger ship across North Atlantic waters in winter weather causes increased fuel costs and substantial increases in engineering and insurance costs and reduces the economic working life of the vessel. A big part of the economic savings arising from laying up the existing vessel in the winter time was the resultant substantial increase in its economic working life, reductions in engineering, insurance and crew costs, and only a very small reduction in passenger revenue.

These cost factors apply less to a freight only vessel which needs a much smaller crew, is more robust, can alter voyage times and routes in the winter to avoid the worst of the weather, and travelling at a much lower speed uses less fuel and takes less of a battering.

There are design difficulties for a combined passenger and freight vessel particularly on this route where most freight travels one way. On the return journey by necessity the freight holds will be almost empty. This poses problems in case of an accident, in that empty cargo space will potentially receive much greater quantities of water and adversely affect the damaged stability of the vessel. This is known as the "permeability problem" and can only be solved by incorporating large areas of non revenue earning void spaces in the ship design resulting in a bigger and more expensive ship overall.

The nature of the freight carried needs to be taken into account. Regular cargo includes hazardous materials like quantities of petrol, paraffin, jet fuel and gas cylinders, as well as pesticides and other noxious substances. Combining the handling of these substances with passengers, not only on the quays but also on the ship, poses health and safety risks which should be avoided and are not compatible with a sensible caring transport system. And the fact will deter potential passengers from travelling.

A combined vessel will have to travel at times to suit the passenger market. This means that all goods must be loaded by 9 AM at PZ. This means that, to catch the service, mainland carriers will be required to deliver outside their normal working hours. Most mainland goods arrive during the normal working day and would have to be stored and shipped the next day at the earliest. This is not a good freight service. Many businesses to-day rely on the "just in time" principle.

A combined freight and passenger vessel will cause a conflict between loading/unloading of freight and the handling of passengers, creating many health and safety issues, which are only partly solved by expensive infrastructure to separate the two flows.

A combined freight and passenger vessel will of necessity have to spend time tied up at the quay loading and unloading, this will substantially restrict its earning potential from carrying passengers on additional voyages or excursions to and from other Cornish Ports and remove any flexibility in time tabling additional voyages. The proposed Cornwall Council ship will have capacity for 600 passengers and hence be much more costly to build, operate and crew than a smaller faster ship. On 95% of voyages, the traffic data shows that the Cornwall Council ship will be less than half full.

Expensive new infrastructure work will be required at Penzance and St Mary's to accommodate the increased size of the new ship proposed by Cornwall Council.

The size of the proposed Corwall Council / Route Partnership ship means that it will not be able to achieve the necessary speed and flexibility of timings that will be required to meet the future changes in customer travel patterns that will occur over the life span of the vessel as increasing motoring costs cause potential customers to need to use mainland public transport services

As described in section 4 the size of even the current passenger ship detracts from its economic viability. The new one proposed by Cornwall Council being even bigger will be even less viable. In addition it will be too wide to fit into Penzance dry dock causing a substantial loss of business for this important local employer.

3) Annual operating costs of the proposals

Cost Estimates for new Isles of Scilly Shipping Service
These Figures are broad estimates (backed up by more detailed figures) which accord with the published accounts of the current operator for the 2007 year adjusted for known changes in for example fuel costs. The figures exclude depreciation on the present ships and include lease charges for the new.

Direct shipping costs	Existing Service	Proposed combined ship all year service	Trythall Shipping Proposal
Scillonian 3 / new passenger ship	1,045,000 (summer season sailings)	1,450,000 (new bigger ship all year)	1,100,000(speed= more fuel, summer season)
Gry Maritha or SLV	375,000	----	375,000 (all year)
Handling	533,000	600,000 (More overtime)	490,000 (Containerised)
Harbour dues, rent and demurrage	217,000	290,000(More rental)	220,000 (less use of quays)
Overheads, including Advertising.	1,090,000	1,090,000	1,090,000
TOTAL OPERATING COSTS	3,260,000	3,430,000	3,275,000
INCOME:			
Freight	1,500,000	1,500,000	1,500,000
Day Trips, current usage	1,050,000	1,050,000	1,050,000
Long Stay	1,400,000	1,400,000	1,400,000
Other Income	50,000	50,000	50,000
TOTAL INCOME	4,000,000	4,000,000	4,000,000
OPERATING PROFIT (Cash Flow)	740,000	570,000	725,000
Deduct Lease charge to Cornwall C. or Bank		1,700,000	600,000
NET CASH FLOW	Plus £740,000	Minus £1,130,000 see note 1	Plus £125,000 see note 2 and 3

1)Assuming the new ship costs £20,000,000 and Cornwall Council can borrow at 6% over 20 years, which would be the maximum life of the ship operating all year round in North Atlantic waters, the annual lease charge would be at least £1,700,000, **a cash shortfall of £1.13 Million.**
Hence to break even there would need to be an increase in freight charges and fares of at least 25% and for the operator to get a reasonable return on investment an increase **of at least 33 %** will be necessary.
2) The Trythall passenger ship would cost about £7,000,000 over 20 years at 6% which would be £600,000, per annum, giving a £100,000 positive cash flow. HYDER consultants in their submission to Dept of Transport (page 156) predict there would be a 50% increase in passenger income attributable to increased speed and comfort. Hence no increase in freight charges or fares would be needed and there could well be an annual cash surplus in the region of £1.3 million. Intelligent marketing will be needed
3) If the Trythall SLV freight service is introduced, there would be further efficiency savings in handling and crew costs etc .of £100,000 per annum.

ISLES OF SILLY SERVICE NOTES ON COSTING FOR ONE SHIP OPERATING

The following cost factors need to be taken into account: this information is based on experience of operating the one ship service in earlier years and the introduction of the two ship service and costing assessments which were confirmed by outside consultants at that time and subsequently proved in practice.

1) DOCK LABOUR AT PENZANCE In the summer months, cargo loading will need to start early in order to leave the quay clear for passenger working. If sailing at, say, 9.15 AM work with a full gang will have to start at 6.30 at the latest so as to be finished by 8.30. All lorries off the quay by 8.00 AM. (Direct loading from carrier's own vehicles, co-op, builders' merchants etc. will require their early arrival outside of their normal working hours). Similarly evening discharge and/or loading will have to take place after passengers have left the quay, say 7.30 PM at the earliest and often working on for another two hours. This will involve split shift overtime working for the whole dockwork gang plus dock labour during the day to staff the warehouse.
Also because the hold layout of the passenger ship is not conducive to efficient cargo handling, extra dock labour safe manning levels will be required

2) SHIPS CREW WORKING CARGO As above in the summer months because of the extended hours either extra crew or dockworkers will have to be employed to work cargo on the ship. With two ship working because of the small cargo element on the passenger ship we were able to agree normal ship's crew to work cargo in addition to their other duties.

3) PASSENGER SHIP FUEL COSTS IN WINTER MONTHS. The existing Scillonian3 with passive Flume stabilisers burns aprox. 2.2 tonnes of fuel per round trip. The proposed new Cornwall Council ship is bigger and has active stabilisers, may have more efficient engines but will likely burn at least 2.5 tonnes per round trip. A cargo ship will burn 0.75 tonnes per round trip. Hence the current two ship service burns 555 tonnes per annum and the proposed one ship service will burn 650 tonnes per annum.

4) OVERALL CREW COSTS. Passenger ship crew wage rates are at a higher level than cargo ship rates. On a one ship service these higher rates will apply all year round, and in addition more crew at passenger ship rates will have to be employed to cover leave agreements and the higher passenger ship safe crewing levels will apply all year round.

5) REFIT COSTS. The passenger ship annual refit will have to be done in a short time (instead of over the winter lay up). This equals extra costs as crew will not be able to work the refit and "dry dock" labour will be needed at premium rates. In addition relief vessel charter costs will be incurred.

6) EXCESS WINTER OPERATING COSTS. Running an expensive passenger ship in winter months will incur extra wear and tear costs. These can be considerable and include storm and berthing damage, normally incurred at a lower level with a less costly and smaller cargo ship.

7) MARINE INSURANCE COSTS. **P**assenger ship marine insurance costs will be incurred all year round, the rates are much higher than for a cargo ship and will be higher still for the proposed new combined ship at a value exceeding £20 million.

8) EXTRA WINTER MAINTENANCE COST OF PASSENGER SHIP. Keeping a passenger ship in service is expensive. By laying up in the winter wear and tear on the passenger side facilities and equipment is much reduced. Operating all year and in the winter months means all general costs will escalate.

9) SHORTENED ECONOMIC LIFE OF PASSENGER SHIP. Operating the expensive passenger ship

throughout the winter months will shorten its economic life **or** substantially increase its maintenance costs in later years. This is a major factor in long term economic planning. The existing ship continues in service, only because she has been kept in dock in the winter months for the past 20 years.

10) EXTRA OVERALL MAINTENANCE COSTS OF A PASSENGER SHIP. Experience shows that a cargo ship maintenance costs are much less than a passenger ship. For example a replacement engine for a ship like the Gry Maritha would cost less than £20,000 installed. An engine for the new ship would cost many times that amount installed, as will the annual maintenance.

11) PASSENGER LOAD FACTOR. Although not strictly speaking a cost item it is worth remembering that past experience is that income from passengers in the winter months will be virtually zero. The ship normally sailed with only two or three passengers and they were usually on a deep discount, students, etc. Similarly even in the summer average loadings now are below 50%. The proposed new ship (600 passengers) is far too big for the service envisaged and the cost / income ratio will be marginal.

To sum up, the direct profit margin (excluding lease or charter costs) on the proposed new Cornwall Council combined cargo and 600 capacity passenger ship will be less than the current two ship operation, and as such an operator tendering for the service in the long term could only afford to pay a notional annual amount for the charter of the vessel. If market charter rates are to be paid then the operator of the service is likely to fail, unless an annual subsidy is provided by the public sector. It is wishful thinking to imagine that an expensive new asset will cost less to operate than maintaining existing equipment in service, even in the medium term.

Capital projects that require grant aid are only economically sustainable in the first few years. Most eventually fail due to the high operating cost of the grant aided asset. It is rarely worth embarking on a project that is not financially viable through normal commercial channels.

4) Outline of the passenger vessel and service proposed in this report.

The design criteria for this vessel were taken from a detailed study undertaken by the writer of the requirements and sea conditions of the Penzance / Isles of Scilly route. These criteria were then used by the marine architects as the model for a general design for a commercial high speed day ferry service in Atlantic waters

I was a Director and Manager for Isles of Scilly Steamship Company from 1976 to April 1992. This was the period when the travelling public came to expect higher standards of comfort and service. This was the time for example when British Rail developed and introduced the 125 train and the mark3 carriage, a great leap forward in speed comfort and service, still operating to-day on many long distance rail routes.

The problem we had with our conventional ship was the extended journey time, 2 hours 40 minutes each way, and sea sickness. Also in order to provide a day trip service, sailing times did not suit the needs of many long stay visitors. We departed Penzance at about 9.30 AM and left St Mary's at 4.30 PM. We had competition from the Helicopter service, journey time 20 minutes but very noisy and departing hourly throughout the day. Although our ship could carry 600 passengers, the numbers travelling was reducing and load factors rarely exceeded 60%

Encouraged by two of the long term older directors and having re organised the service to separate the freight service from the passengers, I began to research alternative craft for the passenger service. In particular the high speed designs that were being developed throughout the world and I made contact with

relevant designers and shipbuilders. Some of the new ships gave very impressive performance, for example the OREGON built by the Kaverna yard in Sweden. She was built for the Honkong- Canton route and gave a very impressive display of 40 Knot travel on the Solent. But this was "Estuary" water; we needed a ship that could provide the same level of comfort in a North Atlantic seaway.

I talked to the Australian designer of the INCAT "Wave Piercer" ships, like the ones now operated by Condor on the Weymouth / Channel Islands service, and Brittany Ferries from Poole and Portsmouth, and at that time on the Sydney / Hobart run, but the minimum size for the design to work was too big for our route I visited Aluminium shipbuilders who were building the first wave piercer for Condor, again too big.

FBM Marine on the Isle of White built the "Patria" for service on the Funchal- PortoSanto Route. She was a "Semi Swath" and the distance and sea conditions were similar to ours. I visited their yard several times and travelled on her in service, and discussed UK certification and evacuation procedures and safe manning with the senior DfT surveyor at Southampton. The sea keeping was fairly good but she had no active ride control and with the slow recovery due to the small righting lever inherent in the SWATH design her ride was unsettling to the uninitiated. Also with fixed pitch propellers and the high minimum RPM inherent in high speed diesel power she was very difficult to manoeuvre. I identified a number of problems that needed to be addressed to get a design suitable for our route and the improvements needed to provide a service to the standards I felt were required for a prestige passenger service to the Islands.

I drew up a list of minimum parameters. I was helped in this task because detailed data about the wave conditions on our route was available from the then Institute of Oceanographic Science who had collated data from the wave recording device on the Seven Stones Light Ship. Here is the list.

In waves up to 3.5 metres Significant wave height and modal wave period up to 9.5 seconds.

Note significant wave height on the Isles of Scilly Route April to October is less than 3 metres on 95% of days and less than 2 metres on 89% of days.

Capacity 350 passengers

Baggage and / or freight up to 5 tonnes

Speed 27 Knots

Range 200 NM

Sea keeping

- Max pitch angle in head sea 0.5 degrees
- Max Roll angle in beam sea 2.0 deg
- Max heave acceleration in head sea at C of G, (RMS) 0.04G
- (Note research shows that RMSG in excess of 0.10G will cause seasickness in 10 % of passengers after 1hour)

Max noise and vibration

- In main cabin 69dB.
- In upper deck cabin 66dB.
- Comparative noise levels are:
  - 125 train Mark 3 1st class coach 68 – 72 Db
  - Current ship Scillonian3 buffet 74 Db
  - S61 helicopter main cabin take off 96 Db, Taxi 100 Db, in flight 94 Db (these levels of noise would be illegal in a work place environment)

Air conditioning

- At least 3.5 complete air changes per hour

Seating Fully upholstered, all passenger space carpeted.

Class Lloyd's Register A1 High speed craft

Manoeuvrability for easy docking and undocking without assistance

Frames strengthened in way of berthing stresses

Max draft 3.5 metres

A Convenient fast baggage handling system to be provided.

The only ship form that could meet these parameters was a Small Waterplane Area Twin Hull (SWATH), and I made contact with Messrs Swath Ocean an American Company who had opened a UK marketing subsidiary. SWATH Ocean built a prototype vessel the Crebe for the Canadian Coastguard and I visited her twice, Once at St John's Newfoundland and again at Ramouskey on the St Lawrence estuary. I travelled on her for several days and one voyage was across the Grand Banks from St John's to Halifax Nova Scotia. There I met a marine engine specialist who pointed out the advantages of using small marine gas turbine engines which could be accommodated in the lower sponsons of the SWATH. This solved the problem of vibration from conventional diesels that would have had to be located in the "haunches" adjacent to the passenger accommodation with the attendant noise and vibration problem and also removes the need for "z" drive or carden shafts to take the drive from the diesels down through the struts to the propellers as on the "Patria". The use of variable pitch propellers would provide the low thrust manoeuvring power need and also dispense with the need for Clutches. With a "combinator" control system very fine adjustment of power for manoeuvring would be possible

The Crebe proved that the SWATH hull form coupled with active ride control fins provided a level of ride comfort not seen before on any other hull design. On fisheries patrol she was able to stay at sea in storms, long after the fishing fleet had departed for shelter.

We had many meetings and I visited the SWATH marine design team at Blythe Bridges, and also Mc Neece the ship interior design experts where we evolved the spacious grouped "island" seating arrangements, getting away from the conventional in line commuter layout It was agreed that the ship would be built in the UK by the McTay/ Miller yard at St Monance in Fyfe., this was a subsidiary of Molem Regional Construction who would guarantee the contract.. This firm built passenger ferries for Caledonian Mc Brain for the Scottish Islands services. SWATH Ocean offered a guarantee that the performance would be within an acceptable range of the parameters listed above, with a two year acceptance period from delivery date. The Paxman engine company offered free finance for two of the marine version of their latest development of their Valenta engine with a three for the price of two option to buy at end of year two. This was a superb engine as fitted to the Inter City 125 train locomotives with several million operating hours "in the bag". A finance package for the whole project was arranged, which included retaining the Current Scillonian 3 ship for a minimum of two years. We were also guaranteed winter charter work for the SWATH as a side scan sonar platform for sea bed survey work.

Thus a full design was evolved, prices were agreed and a viable business plan prepared For entirely separate reasons connected with preliminary negotiations I started on behalf of the Company with the liquidator of the bankrupt Helicopter company following the collapse of the Rupert Murdock Empire, I left the Company employment in April 1992.and the remaining directors cancelled all further discussions on the SWATH project.

However the SWATH Ocean Company were so confident in the design that we had evolved that they subsequently built a similar ship in Seattle using the Textron TF 40 gas turbine power and variable pitch propellers. She became the CLOUD X .and went into service on the West Palm Beach Florida – Bahamas route in 2004. This was a 3.5 hour voyage competing with air services and without an established customer base they did not achieve the desired load factors and she was laid up in November 2007. They did however achieve the performance criteria in sea conditions similar to ours.

This vessel is available for sale to –day in class with Lloyds Register and ready to go with a complete baggage handling system, comprehensive spares package, including spare power unit, and complete documentation to International voyage high speed code standards. The life saving equipment and evacuation procedures are all certified to IMO SOLAS standards for international voyages. The owner is

prepared to offer a charter deal with built in option to buy so that the vessel can prove herself on the route before entering into any long term commitment. Purchase price is in the region of £7million including the spares package etc.

The quick journey time and comfortable ride will enable an imaginative sailing programme, with timings to suit the needs of both day trip and long stay customers, for example:

	Dept Pz	9.00Am	Arrive Scilly	10.35
	Dept Scilly	11.30	Arrive PZ	13.05
	Dept Pz	14.00	Arrive Scilly	15.35
	Dept Scilly	16.30	Arrive Pz	18.05
	Evening Coastal cruise to Lands end			
Or	Dept Scilly	07.30	Arrive Pz	09.05 (to connect with long distance train departures)
	Dept Pz	10.30	Arrive Scilly	12.05 (day trips)
	Afternoon cruise around the Islands			
	Dept Scilly	17.00	Arrive Pz	18.35
	Dept Pz	19.30	Arrive Scilly	21.05 (Picking up long distance train arrivals)

NOTES ON SOME QUESTIONS RECENTLY RAISED BY THE ROUTE PARTNERSHIP Etc.

The vessel is built from aluminium. Some islanders have queried the integrity of this material. Marine grade aluminium is more durable than steel if properly looked after. A large part of the QE2 is made of aluminium as was the Liner United States and nearly all the modern fast ferries throughout the world The Cloud X designers used “Finite Element analysis” when specifying the structural details. This identifies the stress points at the design stage and appropriate stiffening specified.
Similarly the ship’s frames are built to withstand berthing stresses when using floating yokahama type fenders

A county Councillor has queried the vessel’s insurability. There is no doubt about the insurability of the SWATH she is already insured with a reputable marine insurance mutual.

An Islander has queried low tide operations. In fact there is no need for the vessel to take the ground; all that is needed is a timetable that avoids berthing at low water springs. Use of the available funding to provide sensible dredging and monitoring of the berths at both ends of the route would enable an improved sailing schedule.

The use of electric actuators for the ride control has been queried, as compared with a hydraulic system. In service it was found that the electric system was equally reliable and in fact responded faster to control inputs and would normally settle to a passive state with a bow down angle on the front fins of about 1 degree, the vessel requiring only very small ride control inputs to remain stable in a seaway.

The passenger accommodation is arranged in four saloons on two decks with ample catering facilities, and seating spaced suitable for an at seat service, there is an outside promenade deck aft suitable for “cruise chair seating” in fine weather, and there are large observation windows all round. The main deck after saloon at present a “gaming zone” is suitable for fitting out as a “quiet area” with say curtained off banquettes etc. or maybe as a prestige Club Class venue, or just included as standard seating, or children’s / family room.

Cloud X at Sea

Combinator Control Panel

Cloud x lying alongside the berth

Main deck seating

She is available for purchase now at a price in the region of £7 Million fully equipped and with a comprehensive inventory of spares, including spare zero houred engine.

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The vessel was designed in the UK to international standards and built in America to Lloyds register classification. She is certified to carry 365 passengers with baggage and cargo She has a twin hull with Beam 60 feet and length 123 feet, and is certified to operate in significant wave heights of up to 4 metres, well within the conditions met on the Isles of Scilly route in the months March to October, except in extreme weather when passengers are best not carried in any case.

The operating speed is 25/26 Knots, 27 maximum, powered by two Textron / Lycoming marine engines burning normal marine diesel fuel. Twin variable pitch, reversible propellers provide great manoeuvrability when docking/ undocking thus reducing the voyage time quay to quay to well under 100 minutes..

Passengers' luggage is rapidly loaded and unloaded by means of baggage trolleys and the ship's beaminess and short length means that she takes up less pier space than a conventional design of equivalent capacity, and hence can be conveniently accommodated at Penzance and importantly at St. Mary's quay where longer vessels can seriously inconvenience the busy passenger launch movements.

The interior layout is designed to provide a tranquil friendly environment for passengers. There is spacious accommodation divided into four separate lounges, two on the upper deck and two on the main deck. There are large observation windows all round, and an open deck observation area sheltered from wind and spray. The lounges are carpeted and the seating is fully upholstered and comfortable.
Access for foot passengers is via conventional gangways through entry doors arranged to suit the quay heights at both ends of the route at all local tidal conditions.

Many potential passengers are deterred from travelling by sea to The Islands because of the high incidence of sea sickness. This is caused by repeated vertical accelerations above a certain threshold, which in turn are caused by the heave and pitch of the vessel. This adverse effect is enhanced on this particular route by the relatively long distance between the waves which occur on this part of the North Atlantic The effect can be reduced by the use of stabilisers but still presents a significant problem on a conventional monohull design as proposed by Cornwall Council (Incidentally the current Scillonian is fitted with stabilisers of an advanced design but even so she is affectionately known by many Penzance guest house proprietors as "the stomach pump" or "the Sickonion").

The vessel proposed here overcomes all these difficulties with a twin hull layout with particular attention to the detail of displacement at the water line. In simple terms a rising wave does little to cause the ship to heave or pitch, and the effect is further reduced by a sophisticated and well tried system of "active ride control" which further compensates for the effect of the waves. This reduces the heave and pitch in the prevailing conditions to well below the threshold where nausea occurs. A further reduction in sea sickness is achieved by sensitive attention to the ambience of the accommodation, temperature, noise, vibration and decor coupled with a substantial reduction in journey time.

The speed of this vessel, reducing the journey time to below 100 minutes, further enhances the attraction of the journey, and also enables diversion from the direct route to avoid the incidence of adverse wave conditions on parts of the direct route in certain states of tide and weather. For example, by going further North advantage can be taken of the shelter provided by the islands from a South Westerly running swell This was proved in about 1990 when the writer chartered the small but fast little passenger vessel "Oldenburg" which normally runs from Ilfracombe to Lundy Island, as a replacement when Scillonian 3 was out of service for repairs. To-day, modern electronic communication would enable the crew to receive a visual presentation of the predicted sea state and wave direction before embarking on the voyage and to choose the route appropriately for maximum passenger comfort.

In general terms the cost of operating a passenger ship is proportional to its size and maximum carrying capacity. (This applies to most transport systems, eg buses, trains, aeroplanes and helicopters). The ratio between the maximum capacity and the actual numbers carried is described as the “load factor”. The higher the load factor achieved, the better the return on investment. The existing ship has a capacity of up to 600 passengers. Even when the ship was planned in the mid 1970's it was perceived as being too big for the route, and over the years the load factor has gradually fallen away, even in the late 1980's, the last “hey day” period for day excursions the load factor was rarely over 45% for the summer season and always less than 5% in the winter. With the smaller ship described here, carrying up to 350 passengers, the load factor will be much higher and the return on investment considerably improved with more passengers carried overall by making more round trips when needed..

A feature of passenger traffic on this route is that peak demand is concentrated in no more than six weeks, late July to end of August. With a smaller faster ship these peaks are easily met by operating additional voyages. As explained in the management summary, two or more return voyages per day will enable the service to fit in with the different travelling requirements of day and long stay visitors. By offering a timetable that meets customer convenience greater numbers will be encouraged to use the service. Coupled with the improved terminal facilities at Penzance specified at section 5 this proposal will provide a modern fast convenient passenger service to and from the islands , suitable for 21st Century travellers at a minimum capital outlay for the Local Authorities, and the service operator, and will dovetail neatly with the excellent public transport infrastructure already provided at Penzance

A major factor to be taken into account when planning for the next 30 years is that motoring costs will be much higher and this means that visitors on holiday will be less mobile, than previously. To encourage day trip traffic this smaller but much faster ship will be able to call and pick up and set down passengers at other Cornish ports. For example Newquay, Padstow, Falmouth, Fowey, Mevagissey, Par and even Truro. Thus not only enhancing the potential traffic to the Islands but also providing additional interest and attraction for visitors to Cornwall.

Penzance has an excellent train service; one can travel to or from any part of mainland Britain within the day. Most long distance arrivals are between 6.30 PM and 8.00 PM and long distance departures are before 10.00AM. At present the ship service can not dovetail with trains for long stay visitors. The flexibility and speed of the passenger only vessel proposed here will enable voyages to be scheduled to provide an integrated same day service for visitors arriving and leaving by train, for customers to catch the Cross Country and London services. Integrated ticketing could then provide combined rail and sea fares to the Islands from all over the UK, an excellent and unique marketing tool to encourage new long stay visitors to the Islands.

The fast passenger only vessel proposed here will not be required to spend time at the quays loading and discharging general cargo, and hence there will be more time available to spend at sea. This means that as well as offering the enhanced service from mainland ports as described above, on certain days, the vessel will be able to offer deep sea scenic trips around the islands, providing an additional attraction for day visitors and giving visitors by air a chance to sample the excellent facilities and sea keeping offered by the new ship and perhaps choose to travel by sea on their next visit.

The speed and sea keeping features of this vessel will enable much greater flexibility to enable additional voyages at peek demand times and when relief trips are required when air services are grounded

5) Proposed works at Penzance for passenger facilities.
Some dredging would be required but very little else.
(Compared with the Cornwall Council scheme for multi million pound expenditure on intrusive new quays and structures)
The shipping proposed here uses harbour side structures that already exist and can operate successfully

using the existing infrastructure, and the scheme could be implemented within 12 months with immediate benefits. This whole new operation could be set up with a much reduced need for Cornwall Council or government funding.

The Cornwall Council proposal for a new larger ship requires new facilities at Penzance and includes substantial civil engineering works and new pier structures to accommodate the much larger ship and new cargo handling areas and to separate passengers from the cargo handling activities.

My scheme proposed here provides a more convenient situation for travellers at much lower cost and makes maximum utilisation of the existing features at Penzance water front.

The main requirements for a passenger terminal are:

a) For customers, easy access for pedestrians, ample adjacent car and coach parking, convenient drop off and pick up point for luggage, and easy access to public transport, busses and trains. This latter point will become more and more vital as private motoring costs soar upwards in the next few years and potential customers come to rely more on public transport.

b) If possible a covered area for check in and waiting

c) For the operator, berthing facilities for the vessel at all tides and safe afloat mooring when not in service

Dealing with c) first, anecdotal evidence from dock workers from days gone by is that there used to be a greater depth of water in Penzance Inner Harbour which has been lost by silting up and lack of use. In places six to eight feet depth has probably been lost. Whether it has or not it is obvious from the experience of Newlyn Harbour commissioners that dredging of Mounts Bay harbours using modern methods and piling and equipment to stabilise the pier structures can give the required depth of water to enable access to and use of the existing piers in most tidal conditions. The passenger vessel proposed here with suitable dredging of the channel would be able to operate from Penzance Albert Pier without interference to existing moorings and leisure users.

Dredging out old berths at some ports has caused problems but these are prevented by ensuring that the existing structures are properly stabilised with appropriate piling before dredging is commenced. This is a straight forward civil engineering activity.

The big advantage of using the Albert Pier is its nearness to the existing ample car parking, the Railway Station and the Bus and Coach Park. A cantilevered roof cover could provide shelter for baggage handling and existing granite buildings used for check in. A simple trolley system to bring customers luggage from the car park to the vessel (as used at airports) would provide an additional facility. Conflict with leisure use of the pier and slipway would be minimal because most passenger activity would take place during the day whereas most leisure use is in the evening, say after about 6 30 PM.

With a suitable depth of water dredged the new vessel would be able to use the Albert pier at all states of the tide, similarly at St. Mary’s.

Re positioning of the of the storage containers used by the sailing club and gigs would enable passengers arriving by car to conveniently drop off their luggage prior to parking.

Facilities for groups arriving by motor coach are already available at the site, and for train passengers it is just a short walk from the station platform, similarly for bus passengers.

Operation of the ship from any other of the piers causes traffic conflict and congestion and great inconvenience for travellers. The Cornwall Council proposal for costly enhancements to the South Pier area and Lighthouse Pier extension would increase traffic on wharf road and would be very in convenient

for travellers and provide little improvement on existing facilities.

In their planning application Cornwall Council state that a special facility is required to meet “new port security rules” The PZ Isles of Scilly route is classified as a class B domestic route under EU rules for port security and the local Port security officer confirms that no special facilities are required. The level of security suggested by Cornwall Council would only be needed for regular international voyages.

A normal reception area for customers to check in and buy tickets is all that is needed and they would then go straight aboard to await departure. The Albert Pier end building could easily be refurbished for this purpose.

Proposed location of berth for SWATH passenger ship and building suitable for refurbishment as passenger reception area.

Once established this facility would also be available for use as customer reception by the local boat excursions and wild life sea tours that operate from Penzance Harbour

Cornwall Council proposal
Existing view

As proposed

6. Proposed works at Isles of Scilly for passenger facilities.

The existing facilities at St Mary's would continue to be used, but noting that the new passenger vessel would discharge and load luggage and fast freight using luggage trolleys. Normally these would load directly on to the delivery lorry. With its short length, in suitable weather the vessel could moor across the end of the existing quay, thereby leaving space for the launches to ply to the outer steps when needed.

As at Penzance it is recommended that the Duchy of Cornwall, (the harbour authority), install vertical baulk timber fendering secured to the quay face with flexible rubber cushions. This is a simple and low cost system to protect both the ships and the quay wall from impact damage and is suitable for all ships including launches and other small vessels. The existing "yokahama" type floating fenders which hamper smaller boats would then not be needed. Visit Ilfracombe harbour to see an example of sensible harbour management in this respect.

Because of its speed and small size it would be possible on certain tides for the new vessel to run afternoon excursions from Penzance to Tresco direct, approaching from the North, this may require some works at Tresco quay, to enable berthing on the outside of the quay. This facility would provide a new destination for day trips from the mainland and enhance visitor numbers to Tresco. Tides would dictate set down and pick up within about 2 hours, late afternoon.

7) Passenger traffic data

TRAFFIC SUMMARY PENZANCE/ ISLES OF SCILLY
APPROXIMATE FIGURES APRIL to OCTOBER
VISITORS (i.e. one visitor = two journeys = one round trip)

	DAY TRIPS	LONG STAY	TOTAL
HELICOPTER	**10,000**	**42,000**	**52.000**
FIXED WING	**4,000**	**16,000**	**20,000**
SHIP(approx 150 round trip voyages)	**16,000**	**23.000**	**39,000**
TOTAL	**30.000**	**81.000**	**111,000**

Note the day trip traffic by sea has fallen off dramatically in the past twenty years, previously would have been at least 40,000
The customer base for day trips is enormous, visitors to Cornwall average 3million per season, so the take up to-day is minimal. There is tremendous potential for an experienced operator with a well established brand name and a **suitable vessel**

There is substantial scope for transfer from the expensive helicopter service if a competitive Fast and comfortable service by sea is available, at times to suit the customer.
Capacity on fixed wing is limited due to runway length at St Mary's

Potential projected VISITORS for a well marketed SWATH Type fast ferry
(One visitor = 2 journeys)

	DAY TRIPS	LONG STAY	TOTAL
30% transfer from helicopter	**3,000**	**12,500**	**15,500**
Transfer from existing monohull	**16,000**	**23,000**	**39.000**
New day trip traffic	**12,500**		**12,500**
TOTAL	**31,500**	**35,500**	**67,000**

Fares and Tariffs 2009 Season ADULT RETURN FARES

	DAY TRIPS RETURN	LONG STAY RETURN	SPECIALS RETURN
HELICOPTER	**£96.00**	**£170.00**	**£140.00**
FIXED WING	**£86.00**	**£140.00**	**£125.00**
SHIP	**£35.00**	**£95.00**	**£80.00**

Suggested fast ferry return fares

FAST FERRY.	**£30.00**	**£105.00**	**£90.00**

8) Isles of Scilly freight service Proposal for an alternative freight vessel

General comments

1) Nearly all sea freight to-day is transported using industry standard shipping containers, often loaded using Roll on Roll off systems, the containers themselves being packed and unpacked under cover at inland depots or at the customers' own premises, rather than at the dockside. Modern computer systems enable the shippers to trace and monitor the contents of each container. The container system coupled with a ROLL on ROLL off ship removes the need for multiple handling of cargo and minimises labour costs.
2) Many people imagine a "roll on roll off" (RoRo) service to mean a vehicle ferry. This is not so, today many containerised freight services load and discharge their containers and other freight using RoRo The advantage is that no complex cargo handling equipment is needed, no cranes, no pallet hoists, no fork lift trucks, all that is required are container trolleys and a "Tug master" type tractor to pull the containers or stillages (like lorry backs) on and off the ship.
3) Working RoRo with tides normally requires an expensive infrastructure called a Link Span which brings the roadway level to the ship's access door
4) Another problem with RoRo ships is that the bow door arrangement is vulnerable in a seaway, and many use a door at the stern which enables a conventional bow structure and better sea keeping characteristics.
5) To dispense with the link span, a simple inexpensive conventional slipway can be used but normally this will not work with a stern door because the ship's propellers are vulnerable in the shallow water.

The Solution

1) Enter Seatransport designs with their Stern Landing Vessel, (SLV). This has a different drive arrangement, and enables the vessel to load and discharge to/from a conventional slipway through a stern door.
2) Slipways are very easy to construct at a much lower costs than piers or quays.
3) At St. Mary's all freight working could be removed from the quay to a suitable slipway site within the harbour area and at Penzance a slipway already exists
4) Coupled with the out of town depot at Penzance (and possibly at St Mary's) this provides a complete endurable long term solution to the Isles of Scilly freight service, with minimal shore side infrastructure requirement and very low operating costs.
5) It is apparent that the Corwall Council / Route Partnership committee, despite spending over £1Million on consultants fees, has never explored this simple low cost solution to the Isles of Scilly freight service.
6) A ship similar to the "Mathew Flinders" illustrated overleaf and suitable for all year round service on the Isles of Scilly route could be built for about £3.5 million.

Sea Transport SLV in action. The full length of the cargo deck can be covered in `
Note “Mediterranean moor” using bow anchors
If the slipway is adjacent to a quay wall then the vessel can moor up to the quay in the usual way, or the slipway can have mooring dolphins down one side

.
The Mathew Flinders 35 metre commercial Stern Loading Vessel suitable for Isles of Scilly route.
Capacity up to 300 tonnes of general cargo in industry standard containers and stillages.

8) Works at Penzance Harbour and St Mary's for freight ship.

The SLV is designed to operate from a conventional slipway**.** At Penzance a suitable slipway already exists and so no new works are required. The slipway is used by leisure users as well as commercial and some of the funds saved from the more expensive options should be diverted to making a second smaller slipway for ease of use by the sailing club and gigs etc.
There is a rudimentary slipway too at St. Mary's which could easily be upgraded with a shore side hard standing area, to facilitate rapid roll on roll off activity.

The slipway at Penzance, plenty of room for the SLV to load and discharge
And plenty of adjacent hard standing and manoeuvring space for approaching vehicles

10. Proposed new cargo service.

By using a separate cargo ship the service proposed here will be self financing and can be tailored to the needs of the freight customers both on timing of the voyages and handling methods without interfering with the needs of passengers or compromising their safety in and about the quays.

A big disadvantage of the existing service is that it generates a lot of road traffic in the harbour areas both at Penzance and on the islands. These are now both heavily used tourist areas and The Route Partnership/ Cornwall Council proposal does nothing to address this problem.

The nature of the service is that there are varying quantities of cargo at different times of year, and most arrives at Penzance during the day in small batches. Statistics are available but sufficient here to say that there are one or two customers who deliver larger batches (Lorry loads) on certain days. Other cargo comes as full loads on small vehicles (transit size) and the rest comes as part loads on much larger lorries. At present all these vehicles approach the quays from wharf road Penzance, and this causes congestion and disruption in the adjacent area, as do lorries having to queue on the highway to await access to the quay to unload.

Similar congestion arises at St Mary's quay and in Hugh Town due to all the traffic having to travel through Hugh Town to access the quay to collect and deliver cargo.

As explained at section 11, the problem is exacerbated at Penzance by clutter on the quays and incompatible business use of some of the buildings. Similarly at St Mary's there are commercial tourist related businesses operating on the quay adjacent to the cargo handling area.

Basically this is a conventional “store and forward” logistics system with at present the ship being used as the store at Penzance when alongside and the open quay used at other times. The Cornwall Council proposal is to build a store on reclaimed land to the seaward side of the South pier adjacent to the Listed Jubilee Swimming pool and the battery rocks, and then move the stuff from store to the quay when loading This solution does not address the road traffic problem in any way, will cost £14 Million, and would be visually intrusive at this sensitive waterside area .and would involve a large number of fork lift truck movements of about 200 metres each time the ship is loaded and each crossing the pedestrian access path to and from the ship. This will be a logistic nightmare.

My scheme proposed here addressees all the current problems but at minimum cost using existing facilities. The main tenets are:

The freight operator takes over one of the vacant sites at Long rock industrial estate. This area has excellent vehicular access, avoiding the town and busy streets. The defunct cattle market would be ideal as it has direct access to the main road with an existing visibility splay, or unit 18, which is an ideal site could be obtained from the SW Regional Development agency, for about £700,000

Unit 18 at Long rock all ready to roll as a store and forward depot
The cargo system is changed from direct pallet handling to use of standard size 20 foot containers.

All goods with a few exceptions, see below, are received at the Long Rock depot and packed into the containers, either on pallets, or as individual packages. At the end of the day the containers are taken on trolleys to Penzance harbour and driven straight on to the freight ship at the slipway. Normally not more than 10 containers are needed per voyage, thus greatly reducing the traffic flow in and around Penzance harbour front. Two containers would need to be freezer ("reefer") units for carrying frozen and chilled food. In the busy summer months these vehicle movements could be scheduled to avoid heavy traffic times, thus further reducing traffic effects. Empty return containers would be taken back to the Long Rock depot at the same time.

A few customers send large quantities on certain days, for example the Co-op and St. Austell Brewery. The present system and that proposed by Cornwall Council requires triple or quadruple handling of these goods. Under my proposal the designated container would be taken to the mainland Co-op or brewery depot for direct loading there, and shipped direct to the customer on the Islands. Similarly for the main builders' merchants, the "Isles of Scilly" lorry would pick up goods direct into the container at the customer's depot.

Motor cars and other vehicles would be loaded direct at the quay at loading time.

Similarly beasts and other livestock would be carried in a specially adapted container for transport in both directions

At St Mary's the containers would be driven directly off the ship and taken to a new distribution depot

located out of town, say at the industrial estate. The Company used to own a building there suitable for the purpose, or a new facility could be provided by the Duchy of Cornwall and rented to the freight operator. Customers would no longer collect and deliver goods at the quay side. This will reduce the amount of traffic on the quay and through the town. There would be no need for customers' vehicles connected with mainland freight to visit the quay.

Council Staff have put it about that 20 foot containers cannot be handled on St, Mary's. This is not true there is no problem with them, and long flat bed vehicles already circulate on the Island without difficulty.

By use of modern proprietary logistics software at Penzance, general cargo can be packed into containers at Penzance and a supporting manifest produced in such a way that the container can be used on the Islands for direct discharge to customers premises on an orderly freight round as is common now on the mainland. This again will substantially reduce traffic on the Islands.

Off island containers, normally 10 foot size, will be discharged direct to the launch / landing craft.

The freight service would load at Penzance on the PM tide and sail overnight and discharge at St Mary's say from 7 AM. Load and discharge would be rapid, and hence the vessel would vacate the slipway at St Mary's by 9.30 AM and return to Penzance in time to load there on the next tide. This schedule would be possible at all states of the tide, because low water neap tide in this area is early morning and late afternoon.

In the off peak season and over winter, there is no need for a daily freight service, and the ship would operate 3 times a week as now but more frequently if and when needed.

20 foot containers are an industry standard and easily obtainable as is quay side and on board handling equipment, being standard the costs are lower. Cargo ships geared for standard container handling are readily available. A big negative with Isles of Scilly cargo in past years is that the ships have been designed around non standard equipment.

Proprietary vehicles of the "Tugmaster" type are available for moving 20 foot containers in depot, and for loading on to the SLV and as the distances are small these could be used for all container movements. These are small vehicles much suited to the Island environment.

On St Mary's, the existing cargo area on the quay would be released for other tourist related uses, and other advantages are:

Cargo handling can be carried on without disturbance to residents at Hugh Town.

The handling work will be well away from the general public, thus enhancing Safety criteria.

The tugmaster vehicles will be able to avoid the populated town when circulating to and from the depot

Nearly all freight related traffic will be removed from the narrow streets of Hugh Town and the Quay

A suggested working flow is set out overleaf

PENZANCE FREIGHT DEPOT WORKING **Isles of Scilly service see below for a typical manifest inventory**		
ROUTE PARNERSHIP SCHEME	**ROUTE PARTNERSHIP SCHEME**	**TRYTHALL SHIPPING SCHEME**
USING BATTERY ROCKS SITE ONE SHIP SYSTEM	**USING OUT OF TOWN DEPOT ONE SHIP SYSTEM**	**USING OUT OF TOWN DEPOT TWO SHIP SYSTEM, crane or RoRo**
Goods loaded on to consignor's transport	**Goods loaded on to consignor's transport**	**Goods loaded on to consignor's transport**
Lorry/ van drives through Pz to battery rocks Depot (early AM in some cases)	**Lorry / van goes straight to Long rock Depot during normal working day**	**Lorry / van goes straight to Long rock Depot during normal working day**
Goods unloaded from lorry into depot	**Goods unloaded from lorry into depot**	**Goods unloaded from lorry into depot**
Documents prepared and details entered into computer system	**Documents prepared and details entered into computer system**	**Documents prepared and details entered into computer system**
Goods put into pallet boxes, or shipping containers.	**Goods put into pallet boxes, or shipping containers.**	**Goods loaded into appropriate shipping container according to consignee's address**
6 AM NEXT DAY pallet boxes and containers loaded onto transport and driven ¼ mile along the open quay to shipside could be up to thirty boxes.	**6 AM NEXT DAY pallet boxes and containers loaded onto transport and driven to the Quay to shipside could be up to thirty boxes.**	**4.30 PM SAME DAY Containers (max 8) loaded onto transport and driven to the quay to shipside.**
At shipside pallet boxes forked off transport and loaded into ship using pallet hoist, containers craned into hold.	**At shipside pallet boxes forked off transport and loaded into ship using pallet hoist, containers craned into hold.**	**At shipside ships crane lifts and places containers into hold or if RORO driven straight onto the SLV**
In the hold, dockers move boxes into secure stowage and move containers away from plumb of crane and secure in place (passenger ship hold)	**In the hold, dockers move boxes into secure stowage and move containers away from plumb of crane and secure in place (passenger ship hold)**	**In the hold ships crew secure containers in place, no moving required as crane plumbs the hold. (cargo ship hold) Or if SLV secure Trolleys and vehicles ready for sea**

At St. Mary's		
9.30AM ship departs PZ and arrives at Scilly at 12 noon and discharges passengers.	**9.30AM ship departs PZ and arrives at Scilly at 12 noon and discharges passengers.**	**6.30 PM same day, ship departs PZ and arrives at Scilly by 6AM next day**
12.30 PM in the hold dockers move boxes to pallet hoist and containers to plumb of crane and discharge boxes onto the quay and containers onto road transport Pallet boxes forked into new covered warehouse for sorting, empties loaded onto ship for return	**12.30 PM in the hold dockers move boxes to pallet hoist and containers to plumb of crane and discharge boxes onto the quay and containers onto road transport Pallet boxes forked into new covered warehouse for sorting, empties loaded onto ship for return**	**6.10 AM NEXT DAY, using ships crane the ship's crew discharge up to 8 containers onto road transport on the quay or into off island launch and load empties for return, or if RORO all goods driven off slipway and direct to customers' premises.**
Sorted boxes unpacked onto road transport or off island launch.	**Sorted boxes unpacked onto road transport or off island launch.**	
1.30 PM ONWARDS Goods and containers taken to consignees' premises and unloaded	**1.30 PM ONWARDS Goods and containers taken to consignees' premises and unloaded**	**7AM ONWARDS Containers taken on a predetermined round and goods taken to consignees' premises and unloaded in accordance with the container manifest.**

DOCKWORK MANNING for cargo handling

ROUTE PARTNERSHIP SCHEME USING BATTERY ROCKS SITE One ship operation.	ROUTE PARTNERSHIP SCHEME USING LONG ROCK SITE One ship operation.	TRYTHALL SHIPPING SCHEME USING LONG ROCK SITE Two ship operation
At Penzance **PZ Warehouse, battery rocks site, during day and early AM and late PM to load ship and discharge ship Including passengers' luggage. 3** **Transport/ forklift drivers Warehouse to ship AM and PM 2** **Safe working dockers team in Ship's hold, including crane driver/ banksman AM and PM 3** **At Scilly** **Ship's hold safe working as above 3** **Shore side dockers, including fork driver 3** **TOTAL DOCKWORKERS 14**	**At Penzance** **PZ Warehouse, long rock site, during day and early AM and late PM to load ship and discharge ship 3** **Handling passengers luggage and Transport to/from quay AM and PM 2** **Safe working dockers team in Ship's hold, including crane driver/ banksman AM and PM 3** **At Scilly** **Ship's hold safe working as above 3** **Shore side dockers, Including fork driver 3** **TOTAL DOCKWORKERS 14**	**At Penzance** **PZ Warehouse at Long Rock during day 3** **Handling passengers luggage on the quay during day and Transport drivers to/ from quay and if RORO onto ship 2** **Ship's crew work the hold And crane, or if RORO secure containers etc.** **At Scilly** **Ship's crew work the hold And crane.** **Shore side dockers 3** **TOTAL DOCKWORKERS 8**

NOTES

1. These are manning numbers. Numbers employed will be at least 12% more to cover holidays, sickness and statutory leave.
2. With the RP/ Cornwall Council one ship scheme because of the extended working day, 6AM to 9PM, for health and safety reasons, the ships crew would not be able to work the hold and a separate hold gang is required.
3. With the RP scheme because the ship has to load at PZ in the early morning and discharge late at night, at least 4 of the dockwork gang will have to work split shift overtime which is likely to cost double the normal daywork rates.
4. The capital cost of the RP battery rocks depot and lorry park is about £12 million, the capital cost of the Long rock depot and lorry park is about £3/4 million. Business rates of the RP Battery Rocks scheme will be higher as it is in the high value waterside area, and the maintenance costs of the Battery Rocks site will be high as it is exposed, adjacent to the sea and vulnerable to flooding and storm surges.
5. If a RORO SLV system is used, then all fuel and liquid cargo will be shipped in wheeled tankers that can be driven direct to the customer's premises on St. Mary's

TYPICAL MANIFEST INVENTORY FOR ONE SAILING PENZANCE/ to St. MARY'S
On one ship system to be loaded by 8.45 AM at Penzance before passengers arrive on the quay and discharged at Scilly after 1PM when passengers are clear of the working area.

Four 20 foot containers of general cargo for St Mary's

Two 10 foot containers of general cargo for off islands.

One 10' freezer container with 1 tonne of frozen food

One 10' chilled container with 3 tonnes of chilled food.

15 tonnes of building blocks on pallets

5,000 litres of gas oil for power station

5,000 litres of kerosene (heating oil) for fuel agent

500 litres of unleaded petrol

500 litres of Jet A1 aviation fuel for the airport.

500 Litres of high octane petrol for Skybus.

15 propane gas cylinders

3 cylinders of acetylene gas

4 cylinders of oxygen for the Hospital

2 drums of telone 2 poisonous pesticide, marked highly inflammable, "danger this product can kill if spilt"

12, 20 foot roof trusses.

3 motor cars

1 tractor destined to Tresco (off island)

A horse in a horse box for St Martins

3 camping trailers

6 returning empty insulated fish containers.

2 pallets of fertiliser in plastic sacks, arrived last minute.

2 10' containers of passengers' luggage including 4 bags of second class mail.

TYPICAL MANIFEST INVENTORY FOR ONE SAILING St. MARY'S to PENZANCE
On one ship system to be loaded at St Mary's by 4 PM before passengers embark and discharged after 7.30 PM at Penzance when passengers are clear of the working area.

One 20' container of general cargo

One 20' container of empty beer kegs.

3 empty 20' containers

2 empty freezer/ chilled containers

5 empty fuel bowser tanks

20 empty propane gas cylinders

4 empty oxygen cylinders

2 cows in cowboxes for mainland slaughter house

3 insulated boxes of fresh fish for Newlyn market.

3 10' containers of passengers' luggage for collection by individual travellers, and including 1 bag of second class mail.

1 car (driveable)

2 cars for scrap not driveable

2 10' containers of new potatoes for Covent Garden market.

1 boat in cradles for loading directly on to customer's transport.

11. A note about quay management and congestion.

There are a number of problems with the existing arrangements and usage of Penzance Harbour, which detract from its amenity for tourists, and commercial users. Large parts of the quays and working areas are at present used as dumps for unwanted material and other areas are taken up with parked vehicles and various cabins and sheds. There are ample formal car parking areas nearby and there is absolutely no reason for vehicles to be parked on the quays at any time. A lot of the rubbish and dumped materials are a spin off from the existing cargo handling operations by the Isles of Scilly Steamship Company. This problem could be resolved by assertive management on site. Further clutter is the result of the part time private fettling work carried on by private owners on the many laid up “wrecks” that now litter the floating dock. Similar proper control by the Harbour Authorities would help alleviate the problem.

Conflicts exist because the Shell Shop retail business occupies a key site on the seaward side of wharf road, and invites visitors to cross this busy thorough fare to the unsafe side where there is no footway This building carrying on a business not associated with the working port by its nature impedes the safe use of the North Arm of the Dock, similar criteria apply to the adjacent café that occupies the site of the old dockers’ rest.

Cornwall Council who are now the new Harbour Authority need to resolve this conflict which has been caused in the past by allowing retail outlets to occupy sites so immediately adjacent to the working harbour. There is more suitable and ample space for these businesses to operate from the West side of wharf road at the now closed Trinity House museum. The Harbour Authority should take immediate steps to enter negotiations with Trinity House to facilitate the move of these retail businesses to the safe side of the road and hence permit the commercial port related activities to operate on the North Arm in a much safer and spacious environment. Several years ago Penzance Harbour Authority widened the north arm to facilitate cargo handling and vehicle movements.

On the Albert Pier there is a conflict between leisure use and any potential commercial use. The main conflict arises because The Harbour Authority allows the leisure users to use the pier as a free car park, when in fact the large harbour car park is less than 50 paces away. Again this problem is easily solved by assertive management by The Harbour Authority and issuing authorised users with perhaps free parking vouchers for a set aside area of the harbour car park and increasing the mooring fees accordingly.

12) About the Author of this report.

This report has been prepared by J E C Cartwright who is a qualified economist and Chartered Accountant. He has many years of relevant experience.

As systems analyst for a major manufacturer and distributor

Then for 19 years served at the boardroom table of Isles of Scilly Steamship Company.

He was part of the team that helped the company recover from near bankruptcy after the collapse of Ryton Marine and negotiated the finance and economic case for purchase of the existing Scillonian.

He was a Director of the company for 18 years to April 1992, serving many of those years as a Managing Director.

He piloted the company's finances through the stormy times of high inflation and prices and incomes policies in the 1970's

He was Chairman of The West Cornwall Port Employers association and representative on the Cornwall Dock Labour Board and managed the changes required to port employment at Penzance as the dock labour scheme was wound down and eventually abolished. He negotiated new flexible working agreements with The Seamen's Union and Dockworkers Union for ships' crews to be involved in cargo handling securing substantial reductions in manning costs overall.

He introduced new cargo handling methods including hygienic handling of frozen, chilled and fresh foodstuffs. and safe stowage of dangerous and inflammable cargos.

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He visited Norway and Newfoundland to study cargo handling methods and ship designs and equipment, and on behalf of the company purchased the cargo ship "Gry Maritha" and set up the appropriate operating and staffing systems for the freight service that still operates to-day, including establishing a store and forward depot in the "Rank Building" at Penzance quay .

He negotiated with stakeholders including the Duchy of Cornwall and Councils and introduced the two ship operating system, separating the cargo service from the passenger service, thus substantially reducing operating costs and securing the long term viability of the shipping service.

He formed the Skybus Company and initiated the service and obtained the air traffic licenses for the fixed wing air services which now carry more than 20% of all Island visitors.

He attended conventions and conferences of international ferry operators and lectured on the economics and management of short ferry operations and contracts with builders.

He met ship designers and marine architects and ship builders to formulate the design requirements for fast passenger ferries on North Atlantic routes and negotiated a contract with built in safeguards of sea keeping and operational ability for a ship for this route

He was a founder member and subsequently chairman of the West Cornwall Tourism Association and introduced new ideas and systems of publicity for the shipping service and The Islands.

In 1992 following the insolvency of the Murdoch Mirror Group Empire he started serious negotiations to try and retain local ownership of and investment in the helicopter service. Unfortunately the initiative was not proceeded with and apparently the financial benefits from that service now go to an American off shore private equity company.