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**CORNWALL COUNCIL
ISLE OF SCILLY
CLOUD X**

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CONTENTS

1	INTRODUCTION.....	2
2	THE CRAFT HISTORY	3
2.1	THE CONSTRUCTION	3
2.2	SERVICE HISTORY	3
3	CRAFT PRINCIPAL PARTICULARS.....	4
3.1	FLAG STATE	4
4	J E C CARTWRIGHT'S DRAFT OF 29TH MAY 2009	6
4.1	BACKGROUND	6
4.2	RIDE QUALITY.....	6
4.3	SIGNIFICANT WAVE HEIGHT	6
	DRAUGHT	7
5	COMPARISON DIAGRAM.....	8

1 INTRODUCTION

The following report is a very quick review of the High Speed Craft Cloud X, covering some of its history and commenting on its suitability for use on the Penzance to Isle of Scilly service. The depth of the study does not warrant making conclusions but is merely to record the observations made.

2 The Craft History

2.1 The Construction

The craft took ten years from ordering to entering into service. The craft was ordered from Nichols Brothers, Whidbey, Washington State in 1993 and launched in 1995. As a result of a dispute between the buyers and the builders the craft was eventually removed from Nichols Brothers yard and taken to Dakota Creek Industries, Anacortes, Washington, where it was completed. In August 2002 the craft was loaded on a vessel and moved to Port Everglades Florida.

2.2 Service History

On 5th August 2003 the craft commenced a service from West Palm Beach, Florida to Freeport, Grand Bahama. The service ran one round trip per day, with a three hour run in each direction. The service closed after six months. This appears to be the only commercial service the craft has completed. She is currently laid up in Jacksonville Florida.

3 Craft Principal Particulars

The Principal Particulars of the craft are:-.

Length Overall	37.52m	Passengers	
Length Waterline	32.40m	Main Saloon	178
Beam Overall	18.07m	Upper Saloon	189
Design Draught	3.44m	Total	367
Tonnage		Crew	20
Gross	1,010 grt	Service Speed	27 knots
Deadweight	63.5 tonnes	Range	
Capacities		Service Speed	200 n miles
Fuel	2 x 7.16 tonnes	Main Engines	2 x Textron Lycoming
Fresh Water	2 x 2.04 tonnes		TF 40
Sewage	2 x 2.49 tonnes		2570 kW at 15,400 rpm

Auxiliary Power	2 x Caterpillar
	3306B TA
	165 kW/225 KVA
	440V 3ph 60 Hz
Propulsion	2 x Kamewa
	Cpps
Classification	Lloyd's Register
	+100 A1
	HSC (SG3)
	+LMC IP
	Restricted Service

3.1 Flag State

The craft was registered a US Flag vessel. The craft was built to comply with the US Coast Guard Code of Federal Regulations – Sub Chapter H – for passenger ships greater than 100 tons. The craft was designed to meet the philosophy embodied within IMO Resolution A 373(X) The Code for Dynamically Support Craft – the was the predecessor to the 1994 High Speed Craft Code – Resolution MSC 36(63). In 1993 the US had not embraced IMO

legislation and in Europe the “new Code” (MSC 36(63)) was in its infancy and subject to much discussion and interpretation. It is therefore difficult to see how a craft built at this time in the US would be fully compliant with the 1994 High Speed Craft Code.

Perhaps an example of the difference between what is acceptable to the US Coast Guard and the requirements of the 1994 High Speed Craft Code is the requirement from ref: 8.7.4 of the Code:-

“Where davit-launched survival craft are not fitted, MES or equivalent means of evacuation should be provided in order to avoid persons entering the water to board survival craft. Such MES or equivalent means of evacuation should be so designed as to enable persons to board survival craft in all operational conditions and also in all conditions of flooding after receiving damage to the extent prescribed in Chapter 2”.

It is very hard to see how embarking life rafts through weather tight doors in the shell side, below main deck level, in 4m significant wave heights (see later for comments on operating limitations) can be compliant with the above Code requirement.



4 J E C Cartwright's Draft of 29th May 2009

4.1 Background

We were privileged to receive a copy of Mr Cartwright's draft and below are some observations from that draft on the Cloud X. Other aspects of the draft are not addressed.

4.2 Ride Quality

The draft refers to the "Patria" – "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". Whilst Cloud X does have active ride control, at slow speed when approaching ports or in areas of dangerous navigation i.e. the approach to St Mary's the ride control will be ineffective. With an in-effective ride control the exact same effect as described above will happen – "unsettling to the uninitiated".

4.3 Significant Wave Height

Whilst the Classification Society (Lloyds Register) may have rated the structure for operation in 4m significant wave height, the craft in accordance with the High Speed Craft Code will need a permit to operate. This will be issued by the MCA and for a craft of this size would be limited to operation in 1m possibly 1.5m significant wave heights. There is the possibility to increase this by the proving of the capability of the craft in a rough weather trial where the craft makes an octagonal course around a wave rider buoy. Accelerations levels on board the craft are measured and have to be within Code requirements and the safety of the passengers judged to be acceptable. This is exactly the process the major ferry company Stena did with their 126.0 m x 40.0 Beam HSS – a semi SWATH High Speed Gas Turbine driven, Ro-Ro passenger ferry. The HSS was originally given a permit to operate by the MCA of 3.5 metres and after a rough weather trial, in 4.2m significant waves, the 126m long HSS was able to have this raised to 4.2metres. See comparison diagram between HSS and Cloud X at the end of this report.

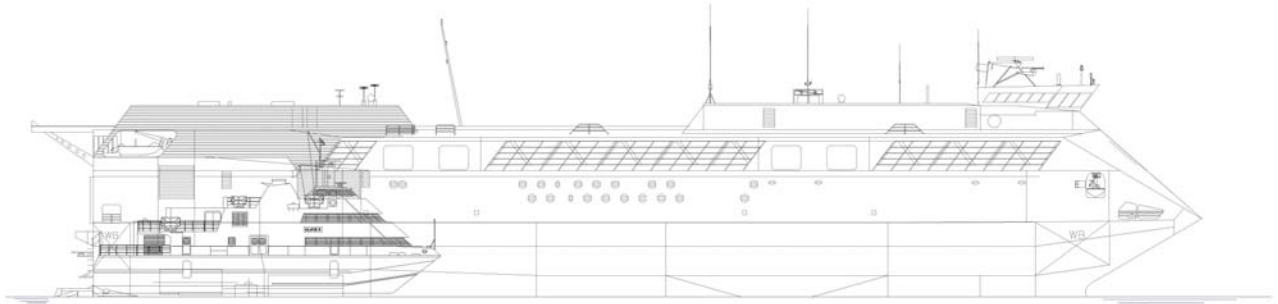
Draught

Cloud X has a design draught of 3.44 metres. The hull design of a SWATH necessitates that the waterline is maintained in close to the part of the hull that has the small water plane area. A consequence of this is that when the passenger load is more than 200 below maximum (367 person) it is necessary to take on water ballast to compensate for the lack of weight of passengers.

Mr Cartwright is of the opinion that there is no need for the vessel to take the ground, this is perhaps fortunate as an aluminium craft such as this is not suited to do so. The draft, at 3.44m and unlikely to vary much for the reasons described, is larger than any of the current or proposed vessels, which are required to take the bottom.

T.M.S.

5 Comparison Diagram



CLOUD X

PRINCIPAL PARTICULARS

LENGTH O.A.	37.52m
LENGTH WATERLINE	32.40m
BEAM O.A.	18.07m
DESIGN DRAUGHT	3.44m

HSS 1500

PRINCIPAL PARTICULARS

LENGTH O.A.	126.50m
LENGTH B.P.	107.50m
BREADTH MOULDED	40.00m
SCANTLING DRAUGHT	4.80m