bp	**Exhbit "H"** **Cargo Carrying Unit Specifications** **March 8, 2004 – Rev. 2**

1. PURPOSE & SCOPE

1.1. Purpose

The purpose of this document is to establish an BP US LLC Standard for the design, construction and ongoing inspection of Cargo Carrying Units (CCU's) complete with wire rope lifting slings.

The procedure is designed to be aligned with British Standard BS 7072 and International standard DNV 2-7-1. Application of and compliance with this procedure does not however ensure compliance with either/or both of these standards

1.2. Scope

This document defines the process for CCU

- Design & Construction
- Inspection, Examination & Test

2. DISTRIBUTION

HSEQ team
Business Unit Leaders
E&P GOM Logistics

3. DEFINITIONS

For the purposes of this procedure the following definitions apply

3.1. CCU:
An Item of equipment lifted by slings, whose primary purpose is the transportation of goods, materials or equipment

3.2 Hook Load:
The total weight suspended from the crane hook

3.3 Lifting Set:
Items of non-integral lifting equipment used to connect the CCU to the lifting appliance

3.4 Maximum Gross Weight (MGW):
The maximum permissible combined weight of the CCU and it's contents.

3.5 Safe Working Load/Payload: (SWL)
The maximum permissible weight of cargo, which may be safely transported by the CCU

3.6 Tare Weight:
The weight of the CCU, without cargo, which includes all fixtures & fittings normally fixed to the CCU, excluding lifting sets

3.7 Non-Destructive Examination (NDE):
Any technique used to detect discontinuities in a material without subjecting that material to physical stress.

3.8. Proof Load Test:
The deliberate application of a pre-determined load to a CCU in controlled circumstances in order to test the integrity and capability of the CCU.

3.9 Owner:
The legal owner of the CCU

4.0 Competent Person:
A person having such practical and theoretical knowledge and actual experience CCU's to enable them to detect defects or weaknesses and asses their importance to the safe use of the CCU.

4. DESIGN

CCU's should be designed to ensure that all load-bearing components have sufficient strength and rigidity and are of a quality suitable for their purpose.

CCU's should be design and constructed to be capable of passing a "Proof Load Test) of twice the "Maximum Gross Weight" rated capability of the unit

Welding and Non Destructive Examination (NDE) requirements should be fully specified

Each Individual Lifting point should be designed to and capable of carrying the Maximum Gross Weight (MGW) of the CCU

Lifting points must be of a design suitable for purpose.

Working stress should be based on 2.5 times the MGW of the CCU

Lifting sets should be designed with a capability of carrying a minimum of 1.3 times the specified MGW of the CCU

To facilitate shore-side handling it is advantageous to include forklift handling pockets in CCU design

5. MATERIALS

All materials used in construction should be specified and suitable for purpose.

Cast Iron, glass fiber, wood or other similar materials should not be used for any load-bearing component.

Aluminum materials that may result in high-energy spark when struck should not be used.

6. CONSTRUCTION

CCU's may be fabricated either as a monocoque structure or as a structural frame with non-load bearing cladding

CCU's should be fabricated of sound material to recognised construction & welding standards and procedures.

A quality assurance program should be in place to ensure the integrity of the CCU.

Door closures and removable panels should be designed to facilitate positive closing and a minimum of one locking bar per door should be fitted.

Locking arrangements should be protected to prevent dislodging by impact.

Four lifting points are recommended but for smaller CCU's two or three may be acceptable.

Lifting points should be constructed so as to be aligned in the direction of the principal load (eg: pad eyes angled towards the centre of the lift)

Lifting points should be accurately positioned and with four-point lift the difference between the diagonal measurements between point centres should not exceed ¼ in.

Bolted fitting must be self-locking or fitted with a device to prevent loosening.

Lifting points should be of sufficient strength and located to minimize physical damage.

Lifting points should be capable of accepting a shackle or connector without inhibiting movement or causing friction against the external surfaces of the suspension sling or termination.

Lifting points should be positioned on the CCU to, as far as is reasonably practicable, preclude the risk of slings fouling against the CCU or it's cargo during normal use.

Pad eyes and holes should be machine cut/drilled to ensure uniformity of shape. (Freehand flames cut pad eyes are not acceptable)

CCU floor should be designed and constructed to fully support the SWL/Payload.

CCU's liable to fill with water should have suitable drainage facilities.

Undersides of CCU's should be constructed to minimize point loading on platform/vessel decks.

Securely anchored Internal cargo tie down points should be provided to minimize cargo movement during shipment

7. LIFTING SETS – Wire Rope and Shackles

All slings are to be of wire rope construction. Nylon slings are prohibited.

All components of the lifting set should be manufactured from sound quality materials and traceable to certification of quality and capability.

All lifting sets should be manufactured and rated to a minimum of 1.3 times the MGW of the CCU to which they are to be fitted.

All lifting sets shall be designed for a single point lift.

Utilization of rubber hoses or other protective covers are prohibited.

Slings shall be re-certified on an annual basis or shall be replaced with slings that have not exceeded the annual certification period.

Slings shall have a permanent label indicating the manufacturer, specific Safe Working Load (SWL) limits, proof test certification number, length, diameter, and date of proof test.

Sling terminations should be of a type specifically approved for lifting assembly eg: Tallurit Single part ferrule or reeved super loop, with the eyes supported by heart shaped thimbles. (Wire ropregrips are not considered satisfactory terminations for CCU lifting sets)

Shackles should be "Crosby" or approved equivalent and shackle pins should be secured to prevent accidental detachment by using a bolt & pin, safety wire, or tie-wrap.

Shackles shall have a rating equal to or higher than the rating of the sling.

It is prohibited to weld shackle pins to any shackle.

Assembly master links should be of minimum dimension 10.5/8 in x 5.1/2 in.

8. MARKING

The tops of closed CCU's and the top rails of open CCU's should be marked to clearly delineate their perimeter, particularly in poor light.

CCU roofs should be coated with a permanent non-slip material.

All CCU's should be marked with a CCU identification number, prominently displayed on all sides of the unit in characters of a contrasting colour not less than 3 in high.

Wherever practicable the CCU identification number should also be displayed on the roof of the unit in characters not less than 12 in high.

All CCU's should carry in characters of a contrasting colour not less than 2 in high information regarding the:

- Maximum Gross weight (MGW)
- Tare Weight
- Safe Working Load/Payload (SWL)

9. PLATING OF CCU's

Each container should be fitted with a plate made of corrosion resistant material securely attached, in a prominent position, to the external surface of the CCU in a manner designed to avoid unauthorized or accidental removal.

The plate should be headed "DATA PLATE" and the following information should be permanently marked on the plate in characters sized to be clearly legible.

- Owners Name
- CCU Identification Number
- Tare Weight (In Tons)
- SWL/Payload (In Tons)
- MGW (In Tons)

- Date of last test/examination using the following suffix to identify examination type.
  - "T" for proof load test
  - "VN" for non destructive and visual examination
  - "V" for visual examination only

The plate should have provision for recording a minimum of six (6) examinations

A recommended "DATA PLATE" format is shown below

DATA PLATE

Owners Name CCU Hire Services

CCU. ID. No. XYZ 123

Tare Weight	**1.25 Tons**
SWL/Payload	**3.75 Tons**
Max Gross Weight	**5 Tons**

01/09/01 T	
02/28/02 V	
08/25/02 VN	

The plate should only be stamped following the successful completion of the required test or examination

10. EXAMINATION & TEST CCU's

All examination & tests should be carried out by or under the supervision of a competent person.

The owner of the unit is responsible for identifying and maintaining the examination and test requirements of the CCU in line with the schedule. (Section 11)

When a "Proof load test" is carried out the NDE and thorough visual examination should be conducted after the "Proof load test"

10.1 Proof Load Test

The proof load test should be carried out through a top load lift using a suitable lifting set with an included angle of not more than 90 Degrees

10.2 Proof Load Test Procedure

A test load (using certified/calibrated weights/equipment) should be uniformly distributed over the floor of the CCU in such a way that the combined weight of the CCU and test load is equal to twice the maximum gross weight rating of the CCU.

The CCU should be lifted carefully by it's lifting points, using a suitable lifting set, so as to ensure that no significant acceleration or deceleration forces are applied. *(if the CCU is normally fitted with it's own lifting set this set should not be used for the test)*

The proof load should be maintained for a minimum of 5 minutes

Following the proof load test the CCU should not be damaged or deformed in any way, which would indicate a weakness or affect it's suitability for design use.

Following the Proof load test the CCU should be subjected to a non-destructive examination of lifting points and thorough visual examination as detailed below.

10.3 Non-Destructive Examination

Unless decided otherwise by the competent person carrying out the examination the following methods should be used:

- Magnetic Particle Inspection (MPI) for "Ferromagnetic materials"
- Dye Penetrant Inspection (DPI) for "Non-ferromagnetic" materials

10.4 Thorough Visual Examination

A thorough visual examination should be carried out of the exterior and interior of the CCU to ensure the CCU is fit for it's intended uses and free from any defects which may affect such fitness.
All load bearing parts including the base structure should be examined..

The examination should be carried out in an area with such facilities and equipment to safely enable a complete and comprehensive examination of the CCU.

An assessment of the design "suitability for purpose" should be made.

The following areas should be visually examined to identify any corrosion, distortion or defects, which may affect the structural integrity or safe use of the CCU:

- All accessible load bearing welds
- The full CCU structure
- The lifting points
- Doors, door closures, seals, hinges and locks.
- Floor and drainage facilities where fitted.
- Plating & markings
- All areas of Lifting set if fitted/applicable.

Any identified defects must be recorded and an assessment made by the competent person of the affect of such defects on the integrity of the CCU. The assessed affects must be fully considered before a certificate of test & examination is issued.

If the identified defects are considered such as to render the CCU unsafe or unsuitable for use at the time or are likely to so do within the certifiable period a certificate should not be issued until satisfactory remedial actions have been taken.

10.5 Certificate of Test & Examination

A certificate of Test/examination should only be issued when, in the opinion of a competent person, a CCU is suitable for further service.

The certificate should show as a minimum the following information:

- Certificate Number
- CCU identification Number
- Owners name or delegated nominee
- Date & number of last "Certificate of examination.
- Name of last company carrying out test/examination complete with name of issuing competent person.
- Full description of CCU including
  - Manufacturer (If known)
  - Date of manufacture (If known)

- Date first put into service (If known)
- Tare weight in Tons
- Safe Working Load/payload in Tons
- Maximum gross weight in Tons
- Details of NDE carried out
- Names of company and competent person carrying out examination/test
- A statement that the CCU was subjected to thorough examination
- Signature of examiner and date of examination
- Date of report issue (f different from date of examination)

10.6 Certificate Retention

The owner or delegated nominee should retain records of the original CCU and or lifting set certification and latest certificate of test/examination for the lifetime of the equipment

If original certification for the CCU is not available the CCU must be subjected to full Proof Load test. Non-destructive test and thorough visual examination and a new "Original Certificate of Test/Examination" issued prior to use.

The Data plate should provide sufficient evidence of certification status of CCU's providing the required certification can be produced if/as required in a reasonable timescale. (A reasonable timescale is considered to less than 24 hours)

11. SCHEDULE OF EXAMINATION & TEST

Details of recommended test/examination frequency and type are indicated in the following table

Schedule of CCU Examination/Test				
Time or interval	Proof Load Test (Twice MGW)	Non-Destructive Examination (NDE) of lifting points	Through Visual Examination	Suffix (to be marked on plate)
Before being used for the first time (or for existing CCU's) within 6 months of agreement of this standard)	Yes	Yes	Yes	T
At Intervals not exceeding 6 months	No	At discretion of competent person	Yes	V or VN* *Dependent whether NDE included
At intervals not exceeding 12 months	No	Yes	Yes	VN
At intervals not exceeding 24 months	Yes	Yes	Yes	T
After substantial repair or alteration (A repair or alteration carried out which may affect the load bearing elements of the CCU or elements, which contribute to its structural integrity	Yes	Yes	Yes	T