Brazil – Offshore and Shipbuilding Industries Overview

Production Platform P-56

Product Tanker Rômulo Almeida

Box ship Log-In Jacarandá

Estaleiros no Brasil
Presentation Content

Foreword
Brazilian Shipyards Scenery
Offshore Oil Production Platforms
Offshore Drilling Platforms
Shipyards in Construction and Expansion
Time Line
Achievements
Human Resources and Labor Relations
Local Content
Conclusions
Foreword

SINAVAL is the Brazilian Shipbuilders Union

Mission:
• Defend shipyards interests
• Represent shipyards in Government forums
• Negotiate with the Labor Unions
• Generate the sectors statistics and public information
• Built an international network
• Promote social and economic development
Foreword

Brazilian Shipyards

47 Shipyards
11 New yards under construction
59,000 workers directly employed
6.2 Million DWT order book
18 Offshore Oil Platforms under construction
33 Offshore Deepwater Drilling Rigs Bid

Petrobras demand
Demand assured for the next 10 years (2011–2020) in the world’s largest E&P investment program:
50 Production platforms
50 Drill rigs
500 Offshore supply vessels
130 Oil tankers

Challenges:

- Human Resources Development
- Increase Productivity
- Increase Local Content for Ships and Platforms
Foreword

Merchant Marine Fund Disbursements

The FMM annual disbursements on loans for ship construction covers up to 90% of total investment.

Is a clearly defined and well-regulated legal system for the financing shipbuilding, in place for over 50 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>R$ millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>305</td>
</tr>
<tr>
<td>2002</td>
<td>338</td>
</tr>
<tr>
<td>2003</td>
<td>591</td>
</tr>
<tr>
<td>2004</td>
<td>721</td>
</tr>
<tr>
<td>2005</td>
<td>465</td>
</tr>
<tr>
<td>2006</td>
<td>658</td>
</tr>
<tr>
<td>2007</td>
<td>1,100</td>
</tr>
<tr>
<td>2008</td>
<td>1,300</td>
</tr>
<tr>
<td>2009</td>
<td>2,600</td>
</tr>
<tr>
<td>2010</td>
<td>2,019</td>
</tr>
<tr>
<td>2011</td>
<td>2,113</td>
</tr>
</tbody>
</table>
## Brazilian Shipyards Scenery
### DWT under construction

<table>
<thead>
<tr>
<th>Ranking</th>
<th>State</th>
<th>DWT</th>
<th>Orders</th>
<th>DWT Part. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1º</td>
<td>Pernambuco</td>
<td>3,072,000</td>
<td>30</td>
<td>49.79</td>
</tr>
<tr>
<td>2º</td>
<td>Rio de Janeiro</td>
<td>1,367,900</td>
<td>76</td>
<td>22.17</td>
</tr>
<tr>
<td>3º</td>
<td>Rio Grande do Sul</td>
<td>1,120,000</td>
<td>13</td>
<td>18.15</td>
</tr>
<tr>
<td>4º</td>
<td>São Paulo*</td>
<td>330,500</td>
<td>108</td>
<td>5.36</td>
</tr>
<tr>
<td>5º</td>
<td>Santa Catarina</td>
<td>146,736</td>
<td>48</td>
<td>2.38</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>133,000</td>
<td>37</td>
<td>2.16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>6,170,136</strong></td>
<td><strong>312</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
# Brazilian Shipyards Scenery

## Work Force

<table>
<thead>
<tr>
<th>Ranking</th>
<th>State</th>
<th>Jobs</th>
<th>Part. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1º</td>
<td>Rio de Janeiro</td>
<td>25,020</td>
<td>42.29</td>
</tr>
<tr>
<td>2º</td>
<td>Amazonas</td>
<td>11,987</td>
<td>20.26</td>
</tr>
<tr>
<td>3º</td>
<td>Pernambuco</td>
<td>9,798</td>
<td>16.56</td>
</tr>
<tr>
<td>4º</td>
<td>Rio Grande do Sul</td>
<td>5,500</td>
<td>9.30</td>
</tr>
<tr>
<td>5º</td>
<td>Santa Catarina</td>
<td>2,125</td>
<td>3.59</td>
</tr>
<tr>
<td>6º</td>
<td>Bahia</td>
<td>2,125</td>
<td>3.59</td>
</tr>
<tr>
<td>others</td>
<td></td>
<td>2,612</td>
<td>4.41</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>59,167</strong></td>
<td><strong>100</strong></td>
</tr>
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</table>
## Brazilian Shipyards Scenery

### Main shipyards production capacity

<table>
<thead>
<tr>
<th>Yard</th>
<th>State</th>
<th>Steel process 1,000 t/year</th>
<th>1,000 m²</th>
<th>Dry dock</th>
<th>Slipway</th>
<th>Dock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eisa</td>
<td>RJ</td>
<td>52</td>
<td>150</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>BrasFELS</td>
<td>RJ</td>
<td>50</td>
<td>410</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Mauá</td>
<td>RJ</td>
<td>36</td>
<td>334</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>STX OSV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Niterói</td>
<td>RJ</td>
<td>15</td>
<td>120</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Aliança</td>
<td>RJ</td>
<td>10</td>
<td>61</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>UTC</td>
<td>RJ</td>
<td>ND</td>
<td>112</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Wilson, Sons</td>
<td>SP</td>
<td>10</td>
<td>22</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Navship</td>
<td>SC</td>
<td>15</td>
<td>175</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Rio Grande</td>
<td>RS</td>
<td>30</td>
<td>100</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Quip</td>
<td>RS</td>
<td>0</td>
<td>70</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Atlântico Sul</td>
<td>PE</td>
<td>160</td>
<td>1,500</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>378</td>
<td>3,054</td>
<td>6</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>184</td>
<td>1,257</td>
<td>13</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>562</td>
<td>4,311</td>
<td>19</td>
<td>21</td>
<td>42</td>
</tr>
</tbody>
</table>
Brazilian Shipyards Scenery

BrasFELS - Angra dos Reis (RJ) specializes in offshore production platforms.

Atlantico Sul Shipyard – Suape (PE) Large crude carriers, offshore platforms and drill ships
Brazilian Shipyards Scenery

RG Shipyards – Rio Grande (RS)

EISA Shipyards – Rio de Janeiro (RJ)

Maua Shipyards – Niteroi (RJ)
Brazilian Shipyards Scenery

STX OSV Shipyard – Niteroi (RJ)

Aliança Shipyard – Niteroi (RJ)
Offshore Drilling Platforms

Sete Brazil, a joint venture of Petrobras, Pension Funds and the largest Brazilian private banks, was announced by the press as the winner of the bid to build in *local yards* 33 drilling ships.

Petrobras announced the program for drilling 45 exploratory wells.

12 drilling rigs build in *international yards* by Brazilian operators will start operations in 2012 and 2013.
Shipyards in construction and expansion

New Yards situation – January 2012

New operations
Aliança Offshore - São Gonçalo (RJ)

Yards under construction
Estaleiro Rio Tietê – Araçatuba (SP)
Estaleiro Jurong Aracruz (ES)
Estaleiro OSX- São João da Barra (RJ)
Estaleiro Inhauma – Rio de Janeiro (RJ)
Shipyards in constructions and expansion

Yards with loans priorities awarded by the Marine Merchant Fund (FMM):

- Construcap – Suape (PE)
- Estaleiro Promar – Suape (PE)
- Eisa Alagoas – Coruripe (AL)
- Estaleiro Enseada do Paraguaçu – Maragogipe (BA)
- Estaleiro Corema – Simões Filho (BA)
- P2 Estaleiro – Itajaí (SC)
- Estaleiros do Brasil – EBR – São José do Norte (RS)
- Estaleiros Amazônia EASA – Belém (PA) – expansion
- Estaleiro Aliança – Niterói (RJ) – expansion
- CQG Construções Offshore – Rio Grande RS – expansion
In the last 50 years Brazilian shipyards went through two expansion periods (1960-1979 and 2000-2011).

Local demand is the main drive.

<table>
<thead>
<tr>
<th>Years</th>
<th>Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>1,400</td>
</tr>
<tr>
<td>1970</td>
<td>18,000</td>
</tr>
<tr>
<td>1979</td>
<td>39,000</td>
</tr>
<tr>
<td>2000</td>
<td>1,900</td>
</tr>
<tr>
<td>2006</td>
<td>19,000</td>
</tr>
<tr>
<td>2011</td>
<td>59,000</td>
</tr>
</tbody>
</table>
Time Line

<table>
<thead>
<tr>
<th>Years</th>
<th>Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>1,400</td>
</tr>
<tr>
<td>1970</td>
<td>18,000</td>
</tr>
<tr>
<td>1979</td>
<td>39,000</td>
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<tr>
<td>2000</td>
<td>1,900</td>
</tr>
<tr>
<td>2006</td>
<td>19,000</td>
</tr>
<tr>
<td>2011</td>
<td>59,000</td>
</tr>
</tbody>
</table>

Yard Recovery Wave

2000
Construction of OSV – Offshore Supply Vessels (on going building program) 115 new vessels built up to 2010.

2005
Transpetro tanker fleet expansion program (Promef):
49 Ships (on going building program):
- 10 Suezmax oil tanker
- 5 Aframax oil tanker
- 4 Panamax oil tanker
- 4 Oil products tanker
- 8 Gas tankers
- 3 Bunker ships
- 8 Oil products tanker

2007
Start up of the offshore platforms local construction:
two deliveries and 18 on going building projects.
Labor Relations

SINAVAL, Federal Gov. Labor Dept. and Workers Union developed the new regulatory guide lines for the workers safety in the shipyards environment, in a three way committee.

The new regulation published (NR 34) was considered by the International Organization of Labor an exemple of sucessfull best pratices worldwide.
Labor Relations – New Jobs

New Jobs by categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineers</td>
<td>10%</td>
<td>1,500</td>
</tr>
<tr>
<td>Technicians</td>
<td>10%</td>
<td>1,500</td>
</tr>
<tr>
<td>Especialised Workers</td>
<td>70%</td>
<td>10,500</td>
</tr>
<tr>
<td>Administrative personnel</td>
<td>5%</td>
<td>750</td>
</tr>
<tr>
<td>Others</td>
<td>5%</td>
<td>750</td>
</tr>
</tbody>
</table>
Local Content for ships and platforms

SINAVAL developed the data base of equipments, products and materials needed by shipyard, based on real case purchases for a Platform Supply Vessel, a tanker and a FPSO platform.

The data base is shared with the supply chain to increase local production.

<table>
<thead>
<tr>
<th>Type</th>
<th>Local</th>
<th>Import</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanker</td>
<td>70.8%</td>
<td>29.2%</td>
</tr>
<tr>
<td>OSV</td>
<td>61%</td>
<td>39%</td>
</tr>
<tr>
<td>FPSO</td>
<td>64.2%</td>
<td>35.8%</td>
</tr>
</tbody>
</table>

Franco Papini, SINAVAL executive vice-president, coordinates the “Local Content Initiative”.

Today local supply and imports – as participation of total cost structure:
Local Content

Ships Work Groups

Items needed:

A – Hull - Structural steel, steel plates, sections of steel and steel shapes;

B – Machinery, main engines, energy generation, compressors pumps, etc

C – Piping and valves;

D – Electric systems, wiring, cables and control panels;

E – Hull accessories;

F – Finishing materials;

G – Paint and corrosion protection.
Local Content

Ships Work Group

Example: The “electric package” reached 60% of local content:

- Electric cables;
- Control Panels;
- Auxiliary motors for energy generation.
Local Content

Ships Work Group

Most critical items for suppliers:

- Engines above 650 HP;
- Cargo and ballast pumps;
- Navigation, communication and safety equipments.
Local Content

Platform and drill rigs workgroup

- 11 families of equipments;
- 111 sub-groups;
- Total: 534 items.

Platform electric comand center
Conclusions

1 – Brazilian shipbuilding industry is active since the 60’s, experienced downfalls from the middle of the 80’s until the end of the 90’s. Since 2003 became a government priority.

2 – A consistent regulatory and legislation arrangement is in place.

3 – Demand is clearly visible for the next 10 years and beyond, based on the offshore demand of high valued drilling rigs, oil production platforms, OSV and tankers.

4 - Labor relations is recognized as an example by the International Labor Organization. (ILO) -(OIT)

5 - Challenges are identified and the industry works closely with the government departments to develop sustainable solutions.
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Press Adviser
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COREMA Indústria e Comércio Ltda.
DETOIT Brasil S.A.
DOCKSHORE Navegação e Serviços Ltda.
EASA – Estaleiros Amazônia S. A.
EBR – Estaleiros do Brasil S. A.
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EISA – Alagoas S. A.
EISA – Estaleiro Ilha S. A.
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Estaleiro NAVSHIP Ltda.
Estaleiro PROMAR Ltda.
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