

Kolskaya and Sakhalinskaya

Cantilever drilling jack-ups for arctic conditions

Owner Arktikmorneftegazrazvedka / Harrington
Builder Rauma-Repola, Finland
Delivered 1985

Description

The three-legged cantilever drilling rigs 'Kolskaya' and 'Sakhalinskaya' (now named "West Janus") were delivered in 1985 to the Russian Ministry of Gas. GustoMSC developed the design for these units that operate under the harsh arctic conditions of Barentz, Kara, Okhotsk and Baltic Seas and the Black Sea of Russia.

Since December 18, 2011 the Kolskaya is out of service: under tow during a fierce storm, it capsized and sank in the Sea of Okhotsk.

Main dimensions

| | |
|------------------------|---------|
| Length hull | 69.28 m |
| Breadth hull | 80.00 m |
| Depth at centre line | 8.55 m |
| Draught incl. spudcans | 6.35 m |

Classification

The platforms were built under the special survey of the USSR Register of Shipping to obtain the Class Notation:

K ⚡ I-A2 - Self elevating mobile drilling unit.

The design also fulfils all rules and regulations as issued by the Ministries of Oil and Gas, of Merchant Marine and of Health.

GustoMSC designed the jacking units on the rig. These jacking units are of the electrically driven rack and pinion type. A special feature of this design is the hydraulic loadsharing device which incorporates an efficient shock absorbing feature.

In addition to complying with the rules of the USSR Register of Shipping, the jacking system design has been approved by both Lloyd's Register and Det Norske Veritas.

Jacking system

GustoMSC patented electrically driven rack and pinion system:

| | |
|--------------------------|---------|
| Jacking speed pontoon | 18 m/h |
| Jacking speed leg | 18 m/h |
| Holding capacity per leg | 7,392 t |

Legs

| | |
|------------------------------|--------------------|
| Length overall | 141.50 m |
| Type | triangular lattice |
| Centre chord to centre chord | 10.50 m |
| Number of legs | 3 |
| Spudcan | 180 m ² |
| Maximum soil pressure | 390 kPa |
| Maximum soil pressure | 441 kPa |



Accommodation

All air-conditioned, designed to accommodate 75 persons

Storage capacities

| | |
|---------------|----------------------|
| Fuel | 646 m ³ |
| Drill water | 737 m ³ |
| Potable water | 161 m ³ |
| Bulk tanks | 277 m ³ |
| Preload tanks | 8,135 m ³ |

| | |
|---------------|--------------------|
| Sack storages | 6,165 sacks |
| Mud pits | 291 m ³ |

| | |
|------------------|-------|
| Tubular storage: | |
| cantilever deck | 270 t |
| main deck | 300 t |

| | |
|------------------------|------------|
| B.O.P. system | 10,000 psi |
| Maximum payload | 2,650 t |
| Cranes: - two electric | 40 t |

The Netherlands

Karel Doormanweg 66, 3115 JD, Schiedam
P.O. Box 687, 3100 AR Schiedam

Telephone +31 (0)10 232 0800
Telefax +31 (0)10 232 0801

www.GustoMSC.com

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Design conditions

Operating

| | |
|-------------------------------|-----------------------|
| Water depth (incl. tide) | 100 m |
| Wave height (trough to crest) | 16.00 m |
| Wave period | 11 s |
| Wind speed (1 min sustained) | 36 m/s |
| Current at surface | 1 m/s |
| Airgap under pontoon | 10 m |
| Maximum payload | 2,650 t |
| Cantilever position | acc. drilling pattern |

Tow conditions

Ocean tow with full leg length raised. Field tow with full leg length raised and subsequent jacking up with max. payload on board.

Survival

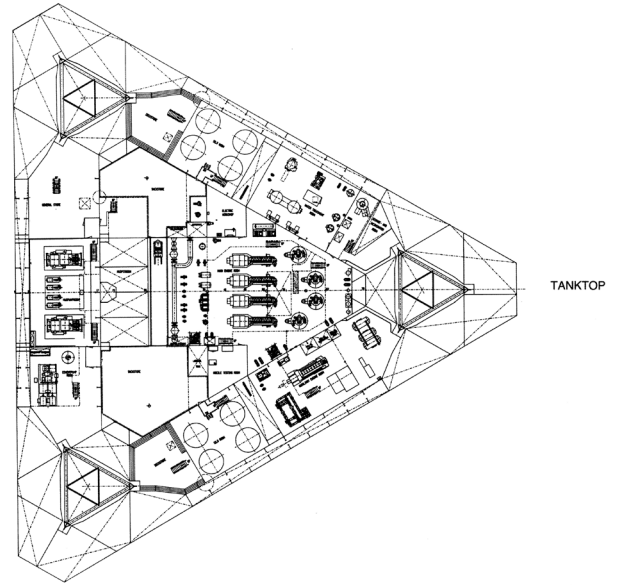
| | |
|-------------------------------|----------------|
| Water depth (incl. tide) | 100 m |
| Wave height (trough to crest) | 21.00 m |
| Wave period | 12 s |
| Wind speed (1 min sustained) | 46 m/s |
| Current at surface | 1 m/s |
| Airgap under pontoon | 10 m |
| Maximum payload | 2,300 t |
| Cantilever position | fully extended |

Load on drill floor

| | |
|---------|-------|
| Setback | 270 t |
| Rotary | 590 t |
| Hook | 450 t |

However, combination of loads may not exceed the maximum loads as indicated on cantilever load scheme.

Data presented in this product sheet is for information only. Unit specific specifications as provided by the Owner shall prevail.



CANTILEVER LOAD SCHEME

