Title	Author(s)	Brief Description (Abbreviated or Paraphrased/simplified ABSTRACT)
Spudcan Penetration Assessment with a Trapped Soil Plug	R. F. Overy & R. J. Hunt	There are 3 industry-accepted punching failure of layered soils; load spread, punching-shear and a trapped soil plug... The authors apply the trapped plug method for a specific JU/Site with high punch-through potential and show the benefits this gives in assessing site suitability.
Modelling Rate-Dependent Soil-Spudcan Interaction for Jack-up Preloading in Clay	S. Brinkman, G.A. Dantuma, J.A.D. Fila, Iv-Infra & F. Pisanò	For JUs with 4 or more legs working in soft clays, multiple preloading stages are often required. The effects of soil viscosity are investigated using Plaxis FE software (in 2D). The results show the benefits of the "overshooting" method.
Centrifuge Investigations of Reverse Fault Interaction with Jack-up Rig Spudcan Foundations	K.J. Oakes, M.J. Brown, J.A. Knappett & I. Anastasopoulos	Investigated the interaction between geological faults, in sand and a jack-up rig, using both Centrifuge tests and FEA.
Design of 'High & Narrow' Gravel Banks Applicable to Skirted Spudcans & Jack Installation Close to Jacket Structure	L. Kellezi & H. Stadsgaard	Application + Advantages/Disadvantages of 'high & narrow,' as alternative to the more common 'low & wide,' Gravity Banks (GBs), for a case having the JU in close proximity of to a jacket platform.
Advanced Site-Specific Analysis of Skirted Spudcans in the View of North sea Experiences	H.K. Engin, H.P. Jostad, M. D'Ignazio, N. Sivasithamparam, H.D.V. Khoa, K.H. Andersen, J. Johansson, A.M. Kaynia, Ø. Torgersrud, G. Yetginer & H. Hofstede	This paper summarizes the challenges and possible solutions of site-specific foundation assessment of jack-up structures with skirted spudcans, focusing on the estimation of monotonic and cyclic soil parameters, foundation penetration, capacity, dynamic and quasi-static stiffnesses, damping, earthquake analyses, large deformation effects, rate effects in the view of North Sea experiences.
Coding the Code: Applying ISO 19905-1:2016 as a Software Package for Site-Specific Sssessments	Maas Hoogeveen	This paper presents *Calypso, a newly developed program to facilitate ISO 19905-1 SSAs*. The software's input is divided into two parts. 1- the (never changing) parametric model and 2- the (site-specific) load model. A benchmark wave load calculation is presented to show some of the capabilities of the program.
Jack-up Foundation Analysis and Monitoring	Stuart Killbourn, Jamie Hardie, Rupert Hunt & Henrik Stadsgaard	Calculated jackup response can vary considerably, with spudcan rotational fixity being identified as a key variable. As the amount of anticipated rotational fixity decreases, the rig's calculated response to storm loads may increase to a point that the rig is shown to be "overwhelmed"; either in terms of extreme leg load or in terms of excessive rig motion. The site specific assessment is completed before the rig is deployed. Once the jack-up is on location, motion monitoring may be used to confirm the adequacy of the foundation model. The measurement of rig natural frequencies in surge and sway provides immediate feedback on the adequacy of the modelling of spudcan rotational fixity. Motion data acquired during a one-year storm event is presented.
Paradigm Shift in Managing Safe and Efficient Jack-up Rig Moves Through Engineering and Operational Excellence	K. Burana, C. Jantarawaranyoo, O. A. Purwana, & N.R.G. Sabin	The Transocean "Ao Thai" (later renamed to MIST) jack-up rig was deployed by a major field operator for a fast-tracked asset retirement campaign in the Gulf of Thailand involving 32 rig moves over a 20-month period. The majority of the platform locations posed considerable geotechnical risks. This paper discusses a successful implementation of a new approach to the jack-up operations which has led to safe and timely rig emplacement as well as significant positive impacts to the business viability of the asset retirement campaign.
Self Elevating Platform (Incl. Liftboat) Incidents	M. van der Kraan	This paper focusses on Liftboat safety and comparison with Jack-ups because of the similar characteristics. There are some main differences in operation compared to Jack-ups (no cantilever drilling, different structural design) and on the other hand activities are alike. Therefore, the question rises, to what extend should we be following similar processes? This paper does not provide answers, however does provide an overview of recent and past incidents. Weak spots are identified by showing the incidents are identical to Jack-up incidents and deserve as much attention for assessment, installation, operation and transit.
Rapid Development in Offshore Wind and the Need for Jackup Installation Vessel Evolution	Michael Perry, Margarita Ivanova Georgieva, Matthew Quah & Foo Kok Seng	Since the first turbines were installed off the coast of Denmark in 1991, the offshore wind industry has grown steadily, particularly in Europe, to become a key part of the energy mix. The industry has matured and in recent times, exploded, as the race for greater efficiencies has led to bigger and bigger turbine designs. In the early days, installations were carried out in any way possible, with specialized vessels emerging as the size of turbines and volume of work expanded. In this paper the rapid growth of the industry is reflected upon, with the corresponding impact on the installation methods employed and the need for larger, more capable vessels. Finally, a new installation concept, representing a possible future direction for Jackup installation vessels is introduced.
Wave-Current Blockage: Reduced Loads and Structural Responses of Lattice-Legged Jack-ups	H. Santo, P.H. Taylor, A.H. Day & Y.S. Choo	This paper summarises research work on the estimation of extreme loads from waves and current on space-frame offshore structures, and the effect of blockage. A CFD model for a porous block is used... At a member scale, the standard Morison equation is used, but on the local flow. This local flow speed is reduced because of overall interaction between the structural members interpreted as resulting from a distributed array of obstacles. The effect of structural response motion on the hydrodynamic forces can be accounted for using the Morison relative velocity form, and this is equivalent to substantially increasing the fluid damping.
On Jack-up Hull-in-Water Wave-Induced Leg Loads and Surge Motion during Extraction of Embedded Spudcans	Y. Zhang & K.R. Drake	A simplified frequency domain model is developed for the analysis of jack-up hull-in-water wave-induced leg loads and surge motion so that limiting seastates can be defined for the safe extraction of embedded spudcans... Consideration is given to hydrodynamic loading effects on a rigid hull due to wave diffraction and radiation coupled with elasticity effects due to leg and holding system flexibility. The cases of one and three legs with embedded spudcans are considered for a representative rig in 70m and 90m water depths... Significant radiation damping due to hull motion is observed for all the modes.
CFD Analysis of Drag Forces Acting on Jack-up Leg Chords	Zhirong Shen, Kai Yu, Zhongfu Ge, Qing Yu, Zana Sulaiman, Henri van der Heiden, Hugo Hofstede	A comprehensive validation study of the CFD prediction of the drag forces acting on split-tube jack-up leg chords in steady incoming flows was performed. The study analyzed three jack-up leg chord models with different dimensions. Two commonly used CFD software packages, STAR-CCM+ and OpenFOAM were used in this study. Different turbulence models including RANS, DES, and LES were investigated by both software packages. A parametric study of various CFD simulation parameters for one selected chord was first performed to identify a specific simulation scheme that provided the most consistent prediction. The results indicate that the DES turbulence model can deliver the best performance for the present problem. A grid convergence study was also carried out, indicating good convergence at different heading angles. This simulation scheme was then applied to all the jack-up leg chord models at various heading angles. The drag forces calculated by this specific CFD analysis model agree well with the values by experiments and empirical method for predicting the drag force of split-tube chords, whereas they may deviate significantly with other CFD modeling schemes.