# MAKINGWaves



INFORMATION AND INSIGHT FROM THE INTERNATIONAL MARINE CONTRACTORS ASSOCIATION
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# Decommissioning Brent Delta

World record lift as topsides are brought ashore by the *Pioneering Spirit* 



#### **EVENTS**

PAGE

Amsterdam report and Singapore look-ahead

#### FOCUS

PAGE 7

The record-breaking Brent Delta removal

#### SAFETY VIDEOS

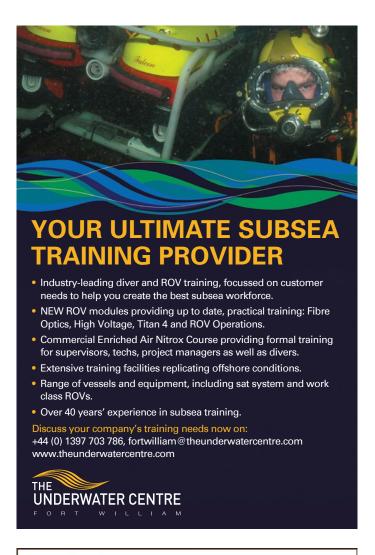
PAGE 11

Be prepared to work safely range grows

#### **eCMID**

PAGE 14

Are you ready for the 1 January deadline?



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## In this issue

IMCA NEWS 4
<ul><li>Document review completed</li><li>New online resources for IMCA committees</li></ul>
EVENTS 5
Report from June 2017 events in Amsterdam
FOCUS
<ul><li>Decommissioning Brent Delta</li><li>Interview with project manager, Evert van Herel</li></ul>
CORE COMMITTEES 11
<ul><li> Environmental issues high on the agenda</li><li> New safety videos</li><li> IMO report</li></ul>
DIVING 13
<ul><li>Examination and testing of cylinders</li><li>Proximity to seismic survey operations</li></ul>
MARINE 14
<ul> <li>eCMID deadline approaches – are you ready?</li> <li>DP assurance and operational planning</li> <li>Addressing the renewable energy industry</li> </ul>
OFFSHORE SURVEY 15
Look-ahead to new projects
ROV15
<ul><li>Industry trends shown in ROV statistics</li><li>Publication updates and new projects</li></ul>



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Meet the full team at imca-int.com/secretariat

Making Waves is published quarterly to promote knowledge of matters affecting the offshore, marine and underwater engineering industry.

The views expressed on these pages are those of their respective authors and do not necessarily reflect the policies or positions of IMCA itself.

Ideas for articles of potential interest to our membership are welcome please send your contributions and ideas to makingwaves@imca-int.com.

## **Welcome** from the IMCA CEO

Welcome to the September edition of Making Waves. Our main feature, for good reason, is the significant achievement of Allseas in decommissioning of the Shell Brent Delta platform. This represents a landmark in the decommissioning market, in the sense of a single lift operation of almost 25,000 t, and for the successful deployment of the Pioneering Spirit, whose sheer scale and ambition matches the equally pioneering spirit in the building of the Brent field 40 years ago. But while the tools and techniques for large scale decommissioning are now clearly in place, the recent SPE conference and exhibition in Aberdeen emphasised that the North Sea basin still has plenty of opportunity for further development providing the economics make sense. The mood of the conference certainly showed the resolve and ambition to make this happen.

#### **Member engagement**

In line with our member engagement plan for 2017, we have successfully implemented a series of technical seminars in various locations. In May we held an ROV seminar in Stavanger, in June Marine and Lifting & Rigging seminars in Amsterdam, and in September Diving (with DMAC) and Cyber Security (with OCIMF) seminars in London. In late November, we will hold Diving, ROV and Marine seminars in Singapore. These have proven very popular and we are currently planning the 2018 programme.

We have now completed the committee election cycle for 2017, in line with implementing our new governance programme. We welcome new and old members to the committees and look forward to their continued engagement with IMCA. For the first time, we have regional committees in place and we are already seeing the benefit of this structure

in sharing the workload locally. The new Operations Committee is now in place and its Chairman and Vice-Chairman have the opportunity to join our Board. To improve administrative efficiency, we have implemented SharePoint sites for each committee, where all necessary documentation is easily accessible.

#### Strategy update

I would again thank our Board for their dedication to the work of IMCA. Earlier this year the Board reviewed IMCA's strategy, which resulted in the addition of number of new themes which are extremely topical in the industry's agenda today. During IMCA's 20-year development, the Association has always adapted to the needs of industry by adding technical streams in response to our members' and their clients' needs.

Pilot committees have now been established to test in some detail the depth of interest and practicalities of the three new technical themes of standardisation, sustainability and digitalisation. Once tested, we will build-out the committee structure in the normal way.



Our Board members have stepped up to organise these pilot committees, as well as reviewing ongoing areas of significant interest.

- · Standardisation Pilot Committee
  - Bruno Faure (TechnipFMC)
- Sustainability Pilot Committee
  - Harke Jan Meek (Heerema Marine Contractors)
- · Digitalisation Pilot Committee
  - Mark Heine (Fugro)
- Membership Luca Gentili (Saipem)
- Promotion of Contract Terms
  - Pieter Heerema (Allseas)
- · Today's Key Agenda Issues
  - Jonathan Tame (Subsea 7)
- · Communications
  - Iain Grainger (McDermott International)

We will report on progress in the next edition of Making Waves.

Allen Leatt IMCA CEO



## **Highlights**



High numbers at Amsterdam events – full report



Decommissioning Brent Delta – world record lift for Allseas



Is the industry a 'green leader'?



Important eCMID changes from 1 January



#### **DIGEST**

Published since issue 83:



#### **ALERTS**

- Safety flashes 14-22/17 (49 incidents)
- DP event bulletins 03/17 (3 events)



#### **PUBLICATIONS**

#### New:

- Guidelines for vessels and units with dynamic positioning (DP) systems (MSC.1/Circ. 1580) (245 IMO)
- Be prepared to work safely safety videos and pocket cards: Hand/arm vibration; Grinding wheel safety; Protecting your eyes at work; Electrical safety; Noise

#### Revised:

- Guidance on the use of chain lever hoists in the offshore subsea environment (IMCA LR 005/D 028 Rev. 2)
- The initial and periodic examination, testing and certification of ROV launch and recovery systems (LR 011/ R 011 Rev. 1)
- Terms and conditions for ROV support services (CI 009/R 008 Rev. 1)
- Standard ROV audit document (R 006 Rev. 1)
- Example specification for a DP FMEA for a new DP vessel (M 219 Rev. 0.1)

## 0

#### **BRIEFING**

- 2 regulatory updates IMO Maritime Safety Committee 98 report; IMO Marine Environment Protection Committee 71 report
- 5 regulatory notifications
- 5 information notes and statistics

Catch up at any time online: imca-int.com/digest

## **Document review complete**

A seemingly daunting task when commenced in late 2015, every IMCA guidance document has now been reviewed by the relevant committees and workgroups to check that it sets out current good practice, reflects the technologies in use today and that references to regulations, standards and other documents are up to date.

Some documents have been confirmed unchanged, with minor editorial/reference updates made to a significant number. More detailed changes have been made to certain documents, while others have been withdrawn as outdated or no longer required.

A small, final set of guidance documents required more detailed technical updating and a longer review or consultation period. For these, new versions have either recently been issued or being finalised for republication shortly.

A rolling programme of document reviews is now being established, which will avoid the need for a wholescale review in the future, while committees are turning their attention to a range of new projects.

Our thanks go to all our committee and workgroup members and to the secretariat technical team for this achievement.

# SharePoint sites for committees go live



IMCA committees and workgroups are being given access to a new SharePoint Online resource, following a successful trial.

Their sites provide quick access to meeting papers, calendars and task lists and enable members to collaborate on draft documents, reviewing the latest comments and revisions, and contribute to discussion of current projects.

Governance and committee support materials are also provided, with additional help available via the relevant technical adviser for each group.

## Strengthening IMCA's regional voice

As part of the structural changes implemented by IMCA, new regional committees have been elected. With 4-6 members each, these committees are focused on local IMCA activity, including the regular regional meetings.

Importantly, regional committee chairmen sit on the Operations Committee, in addition to nominating representatives to serve on the core and divisional committees. In doing so, regions now have a stronger voice within IMCA than at any other time in the Association's history.

The committees' focus on regional meetings is intended to lead to locally-led agendas, locally-relevant speakers and enhanced local engagement with IMCA. The ability to convene

regional IMCA workgroups to address particular local issues is another benefit of a strengthened IMCA regional structure.

We look forward to welcoming our new regional colleagues to our committees and look forward to the fresh perspective they will bring.



#### **NEW MEMBERS**

IMCA is pleased to welcome the following into membership:

- 1 Offshore AS
- Air Products (Dongguan) Gases Co.,Ltd
- Alexandria Petroleum Maintenance Co.
- · Ashbard Marine Services Limited
- Bibby Marine Management Ltd
- · Boss Offshore Sdn Bhd
- · Constructora Subacuatica Diavaz
- Dubai Petroleum Establishment
- Eagle Shipping Ltd
- · Exxon Neftegas Limited

- Gass Og Pusteservice AS (gpsas)
- Gulf Marine Contractors
- HPS Offshore Services S.A DE C.V.
- · Lighthouse S.p.A
- Marsol Worldwide Limited
- Misr Marine Surveys & Services
- · Ocean Installer Limited
- · Parkwind Nv
- Pino Sub S.APosition Inc.

View the full member directory at imca-int.com/members

- PROSET Marine Ltd
- Remøy Management AS
- · Royal New Zealand Navy
- RUD Ketten Rieger & Dietz GmbH U. Co.. KG
- Songa Offshore Management
- TE/Rochester Wire & Cable
- Tsakos Columbia Shipmanagement 'TCM' SA
- UnitedHealthcare Global Medical (UK) Ltd
- Wilson Sons Ultratug Particiacoes S/a
- Woodside Energy Ltd

## **High numbers at Amsterdam events**



The latest IMCA 'hub' event, in Amsterdam on 13-15 June, was the largest yet and brought together members for a variety of fascinating and productive sessions. The hub approach is intended to combine multiple events of interest to members in one location, making best use of member time and avoiding unnecessary travel requirements.

#### **Europe & Africa regional meeting**

The first event was aimed at members from the Europe & Africa region and drew a good attendance. Chairman Pascal Grosjean of TechnipFMC welcomed members, before Allen Leatt, IMCA CEO, provided an update on global activities, including the core committees and technical divisions.

Attendees were then treated to two excellent presentations both highlighting the ingenuity and resourcefulness of members.

Evert van Herel, project manager at Allseas, provided a presentation on the removal of the Brent Delta topsides by the Pioneering Spirit entitled "Brent Delta removal, the end of an era" - you can read more in our feature article and interview on pages 7-10.

Next came Lo Maan, project manager at Seaway Heavy Lifting, who gave an insight into his company's involvement in the renewable energy sector with a presentation entitled "Beatrice Offshore Wind Project, the new era".

#### **Lifting & Rigging seminar**

Eighty-five delegates attended the Lifting & Rigging seminar – a continuation of previous successful 'IMCA rope forum' workshops. The event focused on defining the issues related to high value subsea construction ropes. Participants included rope manufacturers, rope users, third party assurance suppliers and academic institutes.

This programme was intended to focus on issues relating to high performance slings and grommets used for subsea construction, with the title 'Slings and rigging - the soft revolution' indicating the steady move over the past five years from wire to high performance fibre-based

Topics covered included the current codes and standards (including IMCA guidance), operational experience, supplier updates and test house/academic studies.

After a welcome and introduction from David Cannell of TechnipFMC, the seminar chairman, there followed a number of presentations and workshops designed to present the latest status and understanding of the technology, to create discussions and to capture industry status and requirements, both present

The first workshop session saw delegates discussing actual experiences and hot topic

> issues such as 'satisfying client requests - specifically with heavy lifting gear' and 'certification for intended purpose?'.

> The second workshop covered 'requirements - now and future', with improvements to codes and guidelines, testing and future R&D needs among the topics discussed.

The material presented and reports from the workshop discussions will be used to influence development of existing and future IMCA guidance.

A full report on the seminar, including presentations and workshop outcomes, is available via www.imca-int.com/lifting

#### **Marine seminar**

The Marine Division committee organised a seminar entitled 'Practical vessel assurance for safe and efficient operations'.

Over two days, four sessions each included presentations from subject matter experts followed by workshop-style discussions, enabling those present to become actively involved - contributing their experience and providing useful input for future IMCA work programmes.

The first session covered reactivation of a DP vessel after a period of layup - an issue of significant interest as operators look to the future beyond the industry downturn of recent years.

Delegates then looked at investigation and analysis within the IMCA DP station keeping event reporting system, including how to achieve wide and accurate reporting, lessons learnt and training for key DP personnel.

On day two, the role played in vessel assurance by IMO, flag administrations, classification societies and other maritime bodies was considered.

A follow-up event will be held in Singapore in November 2017 to further progress the issues raised in Amsterdam (see page 6).

#### eCMID workshop

The final session of the marine event took the form of an eCMID workshop.

With ever greater use of the eCMID system and important changes being implemented from 1 January (see page 14), this event provided an opportunity for stakeholders - vessel operators, inspectors and clients - to both learn about and contribute to developments. The next eCMID workshop is in November 2017 in Singapore.



Allen Leatt, IMCA CEO, with Evert van Herel (Allseas), Pascal Grosjean (TechnipFMC) and Lo Maan (Seaway Heavy Lifting) at the Europe & Africa meeting



#### **OCTOBER**

**North America region** Houston, USA

**IOSH Tools for the Trade** 19. Dundee, UK

#### **NOVEMBER**

3-5: **International Underwater** Intervention Xiamen, China

8: **South America region** Rio de Janeiro, Brazil

14: **Europe & Africa region** Bergen, Norway

15-16: Bergen International Diving **Seminar** Bergen, Norway

#### 28-30 Singapore Events Hub

Asia-Pacific region 28-29 Diving Seminar (Safety)

28 **ROV Seminar** 29-30 Marine Seminar eCMID Workshop Singapore

#### **DECEMBER**

6: Middle East & India region Mumbai, India

Key to events shown listed above:

- **IMCA** events
- Supported third-party events

See the full calendar online: imca-int.com/events

## **Spreading the word**

As well as our own programme of events, IMCA is often asked to support and contribute to other industry conferences.

Accepting invitations to the right events can provide useful opportunities to inform our stakeholders - clients, potential members and those in related industry sectors - about IMCA's role and work and to influence them in key

The coming months are particularly busy, with highlights of our third-party events calendar including:

#### **OSJ DP Asia Conference**

20-21 September, Singapore

Joey Fisher of M3 Marine, a member of the IMCA Marine DP Committee, will present an update on the work of that committee, a summary of discussions in Amsterdam on reactivation of a DP vessel and a preview of our November marine seminar in Singapore.

**Kongsberg Simulator Users Conference** 27 September, The Hague, Netherlands

Andy Goldsmith, IMCA Technical Adviser, will be attending and presenting, where he will use the recently revised "Guidelines on the training and experience of key DP personnel" (IMCA M 117) to explain the roles of key DP personnel. He will also explore how far simulation can assist in the training and continuous professional development of such personnel.



**IOSH Tools for the Trade** 

19 October, RRS Discovery, Dundee, UK

Andy Goldsmith, IMCA Technical Adviser. has been invited to speak to the Institution of Occupational Safety and Health at this event, where he will address close-quarters infield vessel operations.

**Bergen International Diving Seminar** 15-16 November, Bergen, Norway

IMCA CEO Allen Leatt is among the senior industry figures due to speak at this popular event for the Norwegian offshore sector.

**International Green Shipping and Technology Summit** 

28-29 November, Athens, Greece

Eleni Antoniadou, IMCA Policy & Regulatory Affairs Adviser, will be returning to her 'home town' to speak about compliance with IMO regulations on marine fuels and overall vessel efficiency.

See all forthcoming events at imca-int.com/events/calendar

## An exciting programme for the rest of 2017

#### September events in London

Check out our December issue, when we'll be reporting on two more IMCA events which are taking place as we finalise this edition.

Together with the Oil Companies International Marine Forum (OCIMF), IMCA is holding a one-day workshop on cyber security on 12 September, as part of London International Shipping Week.

Two weeks later, on 25-26 September, IMCA is holding a seminar and workshop jointly with the Diving Medical Advisory Committee (DMAC), which will bring industry and medical specialists together to address a range of current diving topics.

#### **Subsea inspection seminar**

IMCA is co-operating with the SUT and The Hydrographic Society in Scotland to organise a half-day seminar on 1 November in Aberdeen on the theme 'The leading edge of value-based subsea inspection'.

The event is intended to help identify innovative solutions to the challenges of subsea inspection and surveillance in the costconscious era.

#### Singapore to host in November

Following on from success in Amsterdam, a five-event hub will take place in Singapore at the end of November, enabling members with a variety of interests to come together within a mix-and-match programme.

- · An Asia-Pacific regional meeting will provide the usual mix of global committee updates and local interest topics.
- An ROV seminar will address the future of the ROV sector in the Asia-Pacific, including technical advances and operational challenges.
- A diving seminar will focus on diver safety - particularly accident prevention and emergency response planning – and dive team competence in the offshore sector.
- A marine technical seminar will follow a similar programme to Amsterdam, but with local presenters bringing a fresh perspective and workshop discussions developing each topic further.
- An eCMID workshop will enable inspectors, vessel operators and clients to learn about eCMID developments.



# Decommissioning Brent Delta

IMCA founding member Allseas sets a new world lifting record with its vessel *Pioneering Spirit*, removing the 24,200 t topsides in a single lift

The Brent oil and gas field, lying approximately 186 km off the North-East coast of the Shetland Islands, has been a cornerstone of the UK oil and gas industry for 40 years. At its peak, it produced enough energy to run half the homes in the UK. As well as producing a substantial amount of oil and gas, it has created and sustained thousands of jobs and contributed billions of pounds in tax revenues.

When the Brent field was discovered in 1971, it was one of the most significant oil and gas finds made in the UK sector. At that time its expected life span was 25 years at most. Continuous investment and a major redevelopment in the 1990s extended the life of the field well beyond original expectations. However, with almost all the available reserves of oil and gas now recovered, the final stage of its lifecycle is to decommission the four platforms and related infrastructure.

Operator Shell has been carefully planning the decommissioning process over a number of years, following a tightly defined regulatory process. Their goal has been to establish an execution strategy that would: ensure the safety of people working on the project; have minimal impact on the environment; be technically achievable; take into account the impact on affected communities, and be economically responsible. After much consideration of potential options for re-use, it was agreed to remove the platform topsides in their entirety.

The challenges involved in decommissioning the Brent field would be on a scale never seen before, and the marine contracting sector would be asked to solve them – and these solutions would be spectacular, as was about to be proven.

#### **Preparing for removal**

The Brent Delta platform sat on a three-legged gravity-based concrete structure in 142 m of

water. Measuring 74 m x 47 m, and 44 m high to the helideck (132 m high to the flare tip), the topsides comprised three main levels – module support frame, module deck and drilling deck. It had operated as a processing plant, factory, and hotel for forty years, but production ceased in December 2011 and thereafter the wells were permanently sealed.

III The challenges involved in decommissioning the Brent field would be on a scale never seen before II

Continued on page 8

#### Decommissioning Brent Delta

Continued

Disassembling the topsides ashore could be cheaper, safer, and more environmentally responsible; but such an operation on this scale had not been done before. Step forward Allseas and the *Pioneering Spirit* – a new twin-hull vessel, purpose-built for single-lift installation and removal of large oil and gas platforms.

Allseas worked closely with
Shell for four years on the pre-lift
preparation work, including engineering design,
fabrication and installation of under-deck lift
points and strengthening of the deck, module
support frame and legs. Creating access for
lifting points involved the removal of some
parts of the structure, while strengthening,
sea fastening, removal of loose objects, and a
general clean-up were all needed to prepare the
platform to be taken away. Allseas designed
and fabricated the lifting yokes, support stools,
grillage and stabilisation frames especially for
the project.

One year in advance, the platform legs, each between 13 m and 15 m in diameter, were cut with diamond wire – an operation which



Pioneering Spirit moving in around the Brent Delta topsides

took about one week per leg. Substantial shear restraints were installed to maintain stability of the platform and legs after cutting.

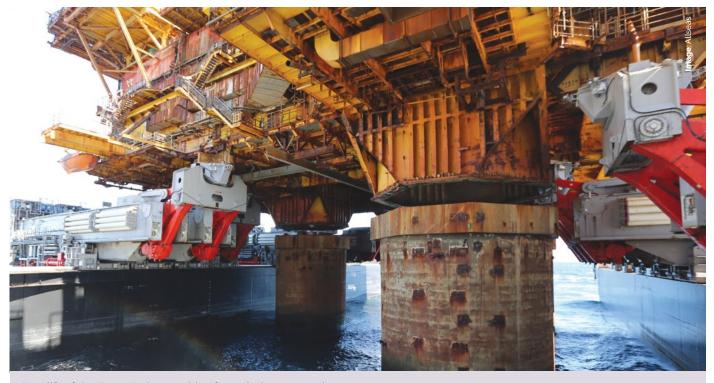
#### The lift

The *Pioneering Spirit* left Rotterdam on 25 April, arriving in the field after a two-day transit and then setting up on DP. On 28 April 2017, the lift took place and the new world record was set.

The process involved manoeuvring the 59 m wide bow slot of *Pioneering Spirit* around Brent Delta's legs (with about 5 m clearance each side). Each set of lifting beams was then moved into position ready to be connected, via yokes, with the topsides.

The operation utilised all 16 lifting beams comprising eight sets – each with four fast-lift cylinders and two active heave compensation cylinders, generating 6,000 t of lifting capacity. The system was interfaced with the vessel's dynamic positioning system and the vast 700,000 t capacity ballasting system (comprising four pump rooms connected to 87 ballast tanks).

Once all yokes were connected, and the vessel de-ballasted to take 80% of the topsides weight, the 'fast lift' was then initiated. Using the lifting beams' compressed air system with quick drop ballast tanks to continue the motion, the final 20% of the topsides weight was shifted to *Pioneering Spirit*, thrusting the topsides 3 m clear of its legs in 16 seconds.



Fast lift of the Brent Delta topsides from their concrete legs





Moving the Iron Lady into the Pioneering Spirit's bow slot

The full operational cycle – comprising the move-in around the platform, yoke connection, pre-tensioning, de-ballasting and 'fast lift' took 12 hours. Throughout the procedure, the vessel's state-of-the-art GPS, navigation, dynamic positioning and ballasting systems worked in unison to ensure the vessel never strayed more than a few centimetres.

With the topsides secure, the vessel then installed 250 t covers on top of each of the platform legs, before departing for the 11/2 day transit to the Hartlepool dismantling yard.

#### All ashore

Another purpose-built vessel was needed for the final stages - the Iron Lady, a 200 m long, 57 m wide specially strengthened cargo barge, with a shallow draft to enable transfers alongside the quayside.

Transfer of the topsides to the Iron Lady involved simultaneously ballasting Pioneering Spirit and de-ballasting Iron Lady until the platform legs set down on purpose-built support stools. The transfer took place at a sheltered location and Iron Lady was towed out of the slot and up the River Tees to Able UK's Seaton Port dismantling yard on 2 May.

After several days of preparation, the topsides were skidded ashore

**44** Five years of intense engineering work and two years of platform preparation all converged to the successful lift of just 16 seconds in duration.

using a self-propelled jacking system on skid tracks. On 7 May, Brent Delta came to rest at Able UK's newly built Quay 6, signalling the end of Allseas' involvement. Able UK estimates that at least 97% of its materials - including 19,450 t of steel, 82 t of copper piping and cables, 7 t of wood and 5 t of glass - will be recycled.



The topsides leave the Pioneering Spirit

Video of the operation can be viewed at allseas.com



## Record breaker

Pioneering Spirit is the world's largest construction vessel. It was designed specifically for the single-lift installation and removal of large oil and gas platforms and the installation of record-weight pipelines. It has a topsides lift capacity of 48,000 t and jacket lift capacity of 20,000 t.

The twin-hulled vessel was designed in-house by Allseas and built in South Korea by Daewoo Shipbuilding & Marine Engineering from 2011 to 2014 at a cost of €2.6 billion (US\$3 billion).

It commenced operations in August 2016, when it set a world offshore lifting record with its first commercial lift – the removal of Repsol's 13,500 t Yme mobile offshore production platform. Located in the Norwegian sector of the North Sea approximately 100 km west of Stavanger, this MOPU was a jack-up type platform standing on three 3.5 m diameter steel legs.

Work on vessel equipment expansion continues, while the company's order book includes installation and decommissioning projects that will see her set further records. An additional 5,000 t tub-mounted crane is due to be added to her deck next year and fabrication work on a 20.000 t capacity jacket lifting system is due to start this year, with installation expected in 2019.

#### **Pioneering Spirit factfile**

Length: Bow slot length: 122 m Width: 124 m Bow slot width: 59 m Operating draught: 10-27 m Installed power: 95,000 kW Maximum speed: 14 knots Accommodation: 571 persons Topsides lift capacity: 48.000 t Jacket lift capacity: 20.000 t ~1,000,000 t at full draught (27 m) Displacement:

## **Evert van Herel**

Evert van Herel is a project manager at Allseas, where he is responsible for the Shell Brent topsides removals, including the Brent Delta project.

#### Tell us about your current role and your career with Allseas.

My current role is overall Project Manager (PM) responsible for the Shell Brent topsides removals. In addition, I am also PM for several removal studies and some internal projects.

I joined Allseas five years ago to manage a pipelay project in Western Australia. After finishing the project three years later, I moved back to Allseas Engineering in Delft, where I worked with the Proposals Department to assist in platform removal and installation tender projects. In November 2016, I was asked to head the Brent removal project, which is still my main task.

#### Tell us about your background and how you got to this place in your career

Before moving to Allseas, I worked for Heerema Marine Contractors for 18 years. Heavy lift has dominated my career, working all over the world for Heerema on a wide range of projects such as the installation and removal of platforms, jacket launching, topsides float over and modifications to the crane vessels. I spent considerable time in the Texan part of Gulf of Mexico and I have lived in Singapore, Mexico and finally Australia, where the installation of North Rankin B was my last job for HMC.

#### Tell us a little about your life away from work

I really enjoy spending time and travelling with my family, enjoying new surroundings, cultures and people. I try to stay in shape by running, preferably in the early morning.

#### **Brent Delta project**

#### How did you get involved and what do you think made you the man for such a colossal challenge?

The project had been running for a long time before I joined the project. The challenge with running a project for a long time is to keep looking with a fresh perspective and to constantly see where you can improve. After successfully finishing the Brent Delta preparation scope, a new mindset was sought, to see the project through the next phase – the actual removal of Delta topsides. Within the Proposals Department, I had always challenged the status quo, not shying away from new removal philosophies. I guess the approach was



Evert stands in front of the Brent Delta topsides on board the Pioneering Spirit

in line with what was requested, or maybe I was just in the right place at the right time.

#### What were your personal project highlights?

The entire ride: the Pioneering Spirit mobilisation, the very fast removal and transfer to our barge, and finishing off with the load-in. All occurred in one continuous timeframe without any waiting on weather and without any incidents! I have had the luck to see many offshore projects being executed, but to see the Pioneering Spirit pick up the Delta topsides in a few seconds was really something else.

#### What were the hardest challenges and how did you overcome them?

The various topsides of the Brent field all have their own challenges. One of the biggest was being the first to remove a topsides with completely new technology. Allseas had already learnt a great deal from the various test lifts, for which we built a test platform (with 5,000 t topsides), and the 13,500 t Yme topsides removal in 2016. The close co-operation with Shell (and two other operators) was essential for the success. Another challenge was to get all preparations ready in time for a removal on 1 May 2017, a date set long in advance.

In the end, thanks to the vessel team, the project team and Shell, we were ahead of schedule, which led to the safe and successful removal of the Delta topsides before 1 May.

For the remaining Brent topsides (Alpha, Bravo and Charlie) the major challenge was changing the mindset for platform removals and making full use of the fact we are removing 'scrap' rather than using new-built installation guidelines. This new philosophy combined with increased trust and understanding of our topside lift system and vessel behaviour ultimately results in a largely reduced preparations scope.

#### Allseas worked closely with the client (Shell) over 5+ years - tell us about that relationship.

In general, our relationship is good, but like in any long relationship, sometimes a good

conversation is necessary. After the Delta preparations were complete, we conducted joint review sessions, which were honest and open. In general, Shell was very happy with how the Brent Delta removal was executed. We work very closely together and largely share the same goals. We have a shared mindset when it comes to platform removals and both want to constantly improve how we go about business.

#### The future

#### What's your view of the decommissioning market now and the longer-term outlook?

In the past years, we have carried out studies and tenders for many clients, proving the advantages of using our single lift method for entire topsides, ranging from 5,000 tons to over 40,000 tons. After the safe and successful Yme and Brent Delta lifts, we see a shift from studies to more tenders and firm proposals for removing topsides. In the next 2-5 years, a considerable number of large topsides are to be removed, of which, hopefully, many will be with our system. We also see that operators are looking more for EPRR (engineering, preparation, removal, recycling) type contracts.

#### So what's next for Evert van Herel?

As current project manager for the remaining Brent topsides, I am working on further expanding our knowledge on platform preparations and recycling. Carrying out the topside preparations ourselves is a new challenge for our team as our clients previously arranged this. In addition, we are looking at novel methods for topsides transfer from Pioneering Spirit to our transport barge and load-in.

What's next? Depending on successful tenders for additional platform removal scopes I will likely be dividing my attention over multiple projects, which I am looking forward to as I will be able to use knowledge and insights from other projects and clients across various projects.

## **Environmental** issues high on the agenda

**IMCA's Policy & Regulatory** Affairs Adviser, Eleni



'Green shipping' and 'sustainability' are popular terms in the business world - in the news headlines, at conferences and throughout legal documents. However, the industry's initiative and potential as a leader in environmental matters, such as clean technology, alternative fuels and ballast water management, are not widely understood.

In recent months, IMCA has been approached to comment on how 'green' the industry is now, what will power the industry in 2050, as well as the ballast challenge for offshore support vessels.

#### A green leader

We were able to report that, throughout the past century, the maritime industry has displayed a laudable ability to embrace green policies. It has become a leader in clean technology, which justifies why shipping is the most carbon-efficient means of moving most products to market in a global economy.

At IMO, the Marine Environment Protection Committee (MEPC) has developed regulations intended to monitor fuel consumption, reduce sulfur emissions and manage ballast water. In the age of climate change and the Paris Agreement, marine industry players raise the bar of innovation even higher, as they implement regional and international regulations on ship energy efficiency, such as the EU MRV Regulation, the Energy Efficiency Design Index (EEDI), the Ship Energy Efficiency Management Plan (SEEMP) and the emerging global MRV instrument of IMO. In addition, fuel accounts for 25 to 50% of total costs in shipping, the single largest cost to the sector. There are, therefore, clear economic incentives to further improve energy efficiency in shipping and invest in green technology.

#### **Future fuels**

Asked which alternative fuel which would see the largest growth by 2050, IMCA responded that, in the light of an increased policy and regulatory focus on reducing emissions, we expect to see greater interest in renewable energy sources and lower carbon forms of energy conversion such as fuel cells and windassisted propulsion.

Although we expect hydrocarbon marine fuels, such as oil and natural gas, to dominate



for the short to medium term, genuinely low carbon alternatives could well see the highest rate of growth by 2050, from an almost insignificant existing base.

#### **Ballast water management**

With the Ballast Water Management Convention entering into force on 8 September 2017, the Offshore Support Journal (OSJ) featured an article entitled "IMCA identifies ballast challenge for offshore support vessels".

"One of the difficulties for our members, in many instances, is the lack of available space to fit the ballast water management system," noted Mark Ford, IMCA Technical Manager. "Some existing engine rooms are already congested, and these systems can be quite space hungry."

Other concerns are relevant to shipping more generally. Indeed, the greatest challenge towards compliance is the lack of standardisation among different parties to the convention: different jurisdictions are currently imposing different ballast water requirements, which creates uncertainty and confusion.

IMCA continues its work to raise awareness of the marine construction sector and, with other interested parties, to lobby for consistent, appropriate regulations, while working to achieve these green goals.

#### **Reference material for members**

IMCA continues, through the HSSE and new Marine Policy & Regulatory Affairs committees, to publish guidance to help members navigate an ever increasing array of environmental regulations and standards.

In December 2016, IMCA published "Introduction to ballast water management" (IMCA REG 003), as part of a suite of guidance documents offering introductions to the essentials of marine policy and regulatory issues. This will be updated shortly to reflect IMO decisions on the timeline for implementation of aspects of the Ballast Water Management (BWM) Convention (see page 12).

The HSSE committee is now also looking at updating and possibly combining "Environmental management standards: ISO 14001-ISM gap analysis" (IMCA S&L 004) and "Guidance for the use of environmental performance indicators" (IMCA SEL 010).

## **New safety videos** and pocket cards

The 'Be prepared to work safely' series of safety promotional material, announced in issue 82, is expanding further, with five new videos and pocket cards due for publication early in Q4. These latest videos cover:

- Hand/arm vibration
- Grinding wheel safety
- Protecting your eyes at work
- Electrical safety
- Noise.

The accompanying cards are designed to be eye-catching and have as little text as possible. They cover just the main hazards, the "dos and don'ts" required for safe working.

The full set of safety promotional materials is available at imca-int.com/safetypromo including streaming videos in ten languages and member downloads of video files and pocket cards.

## **Further safety flash** improvements

Feedback at all levels is that safety flashes continue to be of high value to members. We seek to ensure that incidents of interest and new and relevant lessons are brought to your attention, as well as ensuring that old lessons are not forgotten.

In our latest innovation, members can now rate each alert (at imca-int.com/safetyflashes), to indicate its value to them. This will help the secretariat with selection and prioritisation of future flash material.

IMCA has nearly a thousand members, yet half of all reported incidents have come from just eight member companies. We would like to thank all those who have shared incidents with IMCA to date and encourage others to do so the system can only be as comprehensive and useful as the information submitted. We reiterate that all incidents are treated anonymously and would be pleased to provide further details and reassurance where required - simply contact incidentreports@imca-int.com

## **HSSE** guidance

Ensuring the IMCA document set remains fit for purpose and relevant remains high on the agenda for all committees. The HSSE committee is currently reviewing of a number of documents, including:

- Offshore vessel high voltage safety (IMCA SEL 031)
- Guidance on safety in shipyards (SEL 032)
- Guidance on occupational health (SEL 033). Guidance on environmental issues is also being updated, as outlined in the article to the left.

## **IMO** report

MSC focuses on emerging technology/emerging threats while MEPC considers pollution of air and sea

#### **Maritime Safety Committee**

IMCA was an active participant in the 98th session of the IMO Maritime Safety Committee (MSC), which took place in June 2017.

In his opening speech, the IMO Secretary-General, Kitack Lim, emphasised the need for IMO regulations to be evenly and harmoniously implemented, and elaborated on the continuation of discussions regarding early implementation of new mandatory requirements and amendments to avoid conflict between port and flag state in how they are interpreted.

He also highlighted that much remains to be done to reduce piracy, as well as MSC's work on guidelines for verification of conformity with goal-based ship construction standards.

The meeting went on to consider the latest developments on regulations for autonomous ships and maritime cyber risk management.

## Marine Environment Protection Committee

Two main items dominated the 71st session of the Marine Environment Protection Committee (MEPC) – the prevention of atmospheric pollution from ships, including the reduction of greenhouse gas (GHG) emissions; and the sensitive topic of implementation of the Ballast Water Management (BWM) Convention which was set to enter into force on 8 September 2017.

The committee amended the timeline for BWM implementation (as stipulated in regulation B-3 of the *Ballast Water Management for Ships* document) to phase-in the use of ballast water management systems capable of meeting the D-2 treatment performance standard. The amendments allow existing

vessels to continue operating without a retrofitted ballast water treatment system until as late as 2024, depending upon the particular timeline of their International Oil Pollution Prevention Certificate (IOPPC) surveys – up to two years later than previously allowed and twenty years after the Convention was first adopted. IMCA welcomed the IMO decision to adjust the implementation dates, as this will allow members to prepare for installations and invest in more robust technology to the benefit of the environment. In essence, the extension recognised the need for a greater variety of type-approved treatment systems to become commercially available.

Finally, MEPC 71 noted the first step towards a comprehensive IMO strategy on the reduction of GHG emissions from ships, with an initial strategy due to be adopted at MEPC 72, in



April 2018. IMCA submitted a paper on the difficulty of defining relevant and appropriate proxies for transport work for offshore and marine contracting vessels and recommending that the development of a transport work proxy for such vessels should be kept in abeyance. Certain delegations recognised that it would be technically challenging to develop an appropriate transport work proxy for the offshore sector. The committee invited proposals for guidance on how to deal with offshore and marine contracting vessels under the IMO data collection system. IMCA will continue to engage with interested parties.

#### IMO considers lifting appliances and winches ...

The IMCA Lifting & Rigging committee recently reviewed IMO work on lifting appliances and anchor handling winches.

Amendments to the International Convention for the Safety of Life at Sea (SOLAS) are currently in development, together with dedicated IMO lifting guidelines. It is envisaged that a combination of functional (including design, construction and installation), operational and inspection/testing requirements will be put in place.

Discussions had initially focused on conventional cargo ships, without considering

the unique characteristics of the cranes used by IMCA members. However, through its observer status at IMO, IMCA has been able to raise awareness and engage in debate.

National and NGO delegates to IMO continued to be advised by IMCA of the technical characteristics of offshore cranes, to show that it may not be appropriate to adopt a 'one size fits all' approach and avoiding unintended consequences for our member, such as port detention or financial penalties.

IMCA members will be kept advised of developments in this area.

# **Selection of fibre slings**

A new workgroup is being formed by the Lifting & Rigging committee to develop a new guidance document.

Currently there are standard test methods on how to conduct a fibre sling break test, but very little on how the test data should be reported or how the minimum breaking force (MBF) should be derived from this break test. This can mean that the product does not meet the customer's intended performance criteria, with all the risks that can entail.

The new workgroup will seek to address these concerns, covering materials currently in use and known technological developments, and to reflect good practice.

## Competence & Training - a common thread

IMCA's Competence & Training committee comprises appointees from the four technical disciplines – Diving, Marine, Offshore Survey and Remote Systems & ROV – and each region.

Its role is to help provide form, process and structure for the competence requirements outlined by each technical committee. It works to ensure the industry can recruit, train and maintain a highly skilled and competent workforce – vital for safe and efficient operations in the offshore environment.

An internationally applicable competence framework has been developed, as a means for the industry to demonstrate to clients the competence of personnel working in safety-critical or other key positions. Focused on workplace assessment, where both skills and behaviour are considered, the framework can

be used as a basis for establishing or enhancing in-house company schemes. It also enables on-the-job assessments undertaken with one company to be recognised by another, aiding labour market efficiency. A set of materials for freelance personnel further helps in this regard.

By linking with the divisional committees, when they are considering training or competence assurance issues, a consistent framework can be applied but with the flexibility to meet needs across the industry.

Examples of work recently undertaken by the committee include a review of the competence assurance and assessment tables (IMCA C 002-005), updating of the high voltage training syllabus (IMCA C 010), competence guidance in respect of cyber security and outline plans for a competence seminar in 2018.

## **Examination and testing of cylinders**

IMCA has been working with other sectors of the diving industry to ensure that a proposed new international standard "Gas cylinders -Seamless steel and seamless aluminium-alloy gas cylinders and tubes – Periodic inspection and testing" meets industry expectations. BS EN ISO 18119:201X is scheduled to be published before the end of March 2018. In Europe, it will replace the current cylinder testing standards BS EN 1802:2002 and 1968:2002. These both call for an internal examination of seamless steel and aluminium-alloy gas cylinders every 2.5 years - the approach taken by many sectors of the diving industry in Europe since 2002.

#### **Proposal for annual examinations**

An early ISO draft recommended that, for compressed gas cylinders used for and containing self-contained breathing air, oxygen, etc. and gases for underwater breathing apparatus:

"Local regulations will specify the interval of periodic inspections and test. In the absence of any local regulation, as a guide an internal examination every year with a periodic inspection test at 5 yearly intervals should be

The possible introduction of annual internal examinations for steel and aluminium-alloy cylinders in jurisdictions without specific local regulations (such as the UK) caused widespread concern. Unnecessarily frequent internal examinations would undoubtedly be costly and burdensome. Of greater concern, if the intervals between internal visual examinations are short, cylinders will be inspected more often during their service lives and the likelihood of thread damage or the fitting of mismatched cylinder valves during the inspection process will be increased. An increase in the number of valves catastrophically ejected from cylinders could be an unintended consequence of this approach.

#### The IMCA approach

Steel and aluminium-alloy cylinders used

by commercial divers for bail-out and suit/ buoyancy control device (BCD) inflation are not continuously breathed underwater and are at an increased risk of water ingress and accelerated corrosion. Therefore, IMCA D 018 - Code of practice for the initial and periodic examination, testing and certification of diving plant and equipment - recommends that these cylinders are internally examined every six months, i.e. the frequency proposed in the draft standard.

However, for all other steel and aluminiumalloy cylinders taken underwater, such as those fitted to baskets/wet bells and externally on closed bells, IMCA D 018 recommends internal examination every two years and periodic inspection and test every four years. These frequencies have been used by our members for many years without problems and IMCA does not consider annual internal examinations of such cylinders necessary.

For cylinders supplied either individually or in bundles, and used only on the surface to provide gas to a diver via an umbilical, IMCA's recommendation has been that these are inspected and tested every 10 years. Again, no problems have arisen from this approach and IMCA does not consider annual internal examinations necessary.

In view of the industry's concerns over annual internal examinations, the responsible ISO committee eventually accepted that a risk assessment approach could be applied to the interval of periodic inspections and test. The draft standard now recommends:

"Local regulations will specify the interval of periodic inspection and test. In the absence of any local regulation as a guide, an internal examination every year with a periodic inspection test at 5 yearly intervals should be carried out

However, if on completion of a risk assessment and the specific use of a cylinder indicates that there is a low risk of internal degradation then the interval for carrying out



an internal examination can be increased to a maximum of 2.5 years."

#### **Industry-wide solution**

Following this breakthrough, the UK diving industry met under the aegis of the UK Diving Industry Committee (DIC), with IMCA representing the offshore sector. A generic risk assessment providing clear direction on acceptable intervals for internal examination of cylinders was developed. This recognises that different sectors of the diving industry have their own specific risks and requirements, covered in sector-specific annexes.

In parts of the world where specific legislation covering cylinder examination and testing does not exist, the UK Diving Industry Committee "Risk based assessment of cylinder internal examination periodicity" document may be used by IMCA members to demonstrate that the guidance in IMCA D 018 is appropriate.

Follow developments at imca-int.com/diving

## ... Meanwhile, IMCA is updating its own lifting guidelines

The IMCA Lifting & Rigging (LR) committee is overseeing a workgroup updating and enhancing Guidance for lifting operations (IMCA LR 006/SEL 019/M 187), with two important new sections in the next revision.

The LR committee has worked closely with the Diving Division. A new appendix will cover subsea lifts using surface-based equipment in support of diving and ROV operations, including advice on:

- the safe positioning of divers during subsea lifting operations
- the use of planned stop points when

- lowering/lifting objects to/from the seabed
- the appropriate use of certain selectable crane and winch modes during lifting operations involving divers
- diver handling of lifted objects underwater. Dismantling/demolition of offshore topside and subsea structures is the second major addition, currently including:
- Operational procedures such as clearance from surrounding structures, path to set-down, arrangements for set-down and recovering a lifted object
- Management of change experience has

- shown that this is particularly important in demolition, since problems are likely to emerge at a late stage in the operation
- Other potential concerns, such as changes of ownership and accuracy of plans, where a record of modifications through the life of a facility may not have been fully recorded
- Uncertainties actual weight of the item to be lifted, the centre of gravity and the status/condition of the remaining lift points.

Work continues, with submission for final review by the LR and Diving Division committees expected later this year.



## Too close for comfort

During a number of recent seismic survey/ diving simultaneous operations, IMCA received reports from operators that diving had to be halted at around 30 km of separation. These reports strongly suggested that the 10 km distance quoted in DMAC 12 Rev. 1 – Safe diving distance from seismic surveying operations - as being an appropriate distance for the initiation of a joint risk assessment between all parties is far too short.

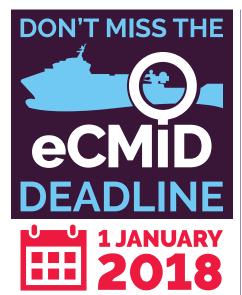
A workgroup composed of IMCA, IOGP (the International Association of Oil & Gas Producers), DMAC (the Diving Medical Advisory Committee) and seismic surveying representatives was formed to consider the matter.

Updated guidance has now been drafted, which will recommend:

- · Where diving and seismic activity are scheduled to occur within a distance of 60 km, all parties should be made aware of the planned activity. As a minimum, this should include clients/operators, diving and seismic contractors
- Where seismic survey/diving SIMOPS are proposed within a distance of 30 km, a joint risk assessment should be undertaken. The risk assessment should consider ramp-up trials as well as other risk control measures
- If the risk assessment generates a requirement for a ramp-up trial, the starting point for the trial will also need to be determined by the risk assessment
- Should any member of the diving team in the water suddenly experience discomfort, the seismic source should be turned off immediately if a request is made to do so.

DMAC will consult with industry, including via IMCA, before a revised guidance note is issued.

DMAC publications are available on their website: dmac-diving.org



January 2018 is a crucial time within the IMCA eCMID system, as two related developments intended to improve standards come into effect.

#### Paper CMIDs no longer recognised

From 1 January, IMCA will only recognise formal inspection reports conducted using the eCMID database and app (imcaecmid.com). Paper reports (i.e. those not generated by the database) will no longer be considered by IMCA to be authorised vessel inspection reports.

The whole eCMID system is now based on the principles described in standard ISO 19011 "Guidance for auditing management systems" and is also aligned with other comparable industry guidance on safety management system assurance

#### Vessel inspector accreditation

From the same date, only Accredited Vessel Inspectors (AVIs) will be approved to use the 'inspector' role within the eCMID database only they will be able to conduct authorised Common Marine Inspection Document (IMCA M 149) and Marine Inspection for Small Workboats (CMID for Small Workboats -IMCA M 189) inspections.

Any current inspector registered on the database who has not achieved AVI status will have their registration deactivated until such time as they achieve accreditation. Existing inspection reports will remain accessible to operators/clients. Those who have already gained accreditation should ensure they have updated their user account details to allow their account to remain active after 1 January.

Details on the AVI accreditation process and forthcoming courses - undertaken by the Marine Surveying Academy of the International Institute of Marine Surveying on behalf of IMCA - can be found at ecmidvesselinspectors.com.

#### Singapore workshop

As part of the IMCA events hub being held in the country, the next eCMID workshop will be held on 30 November in Singapore.

Held as a joint session within a wider marine seminar, the workshop will bring together vessel operators, inspectors, clients and other stakeholders to learn more about the eCMID system and the changes referred to earlier in this article and to provide any feedback.

For the latest developments, visit imca-int.com/ecmid

## Marine DP committee hard at work

As part of efforts to simplify structures and nomenclatures, the IMCA DP Focused Workgroup has been renamed to the IMCA Marine DP committee. This reflects its semipermanent status (addressing any and all DP issues for the foreseeable future, rather than a single task-focused workgroup) and reporting line to the Marine Division Management Committee, which is responsible for reviewing and approving publication of its output.

#### **DP** assurance processes

In 2004, information note IMCA M 04/04 was published, setting out the results of an IMCA study into "Methods of establishing the safety and reliability of dynamic positioning (DP) systems".

The study contains a wealth of information for the DP practitioner. One annex in particular is the only document which provides a list of subjects requiring analysis in a DP failure modes and effects analysis (FMEA). The document is frequently referenced in IMCA and other industry documents.

The clear value that users place in the document has led the Marine DP committee to begin reviewing the document. It is intended to publish an updated document - 'Guidance to support the application of DP assurance processes' - in due course.

#### Operational planning

"Guidance on operational planning" (IMCA M 220) is widely referenced, including in international standards and client contracts. The document is currently being reviewed by the Marine DP committee, following the recent revision of IMO guidelines covering DP operations. It is felt unlikely that many changes will be required, but the guidance will be checked to ensure it covers current good practice and that references are up to date.

Feedback is welcome on either document for consideration during these reviews.

For more details, please contact Andy.Goldsmith@imca-int.com

## Renewable energy needs addressed

The newly renamed Marine Renewable Energy committee has been reviewing and updating "Guidance on the transfer of personnel to and from offshore vessels and structures" (IMCA SEL 025/M 202). Updates prepared by the committee will ensure that guidance covers aspects of transfer activities specific to the renewable energy sector, while a new section on helicopter transfers has also been introduced.

The revisions have now been submitted to the HSSE committee for review (and, ultimately, permission to publish). It is anticipated that the updated guidance document will be published by the end of 2017.

#### DP in the renewable energy sector

A workgroup established by the Marine Renewable Energy committee has nearly completed its task, resolving an issue first brought to the attention of IMCA by a member company operating in the sector.

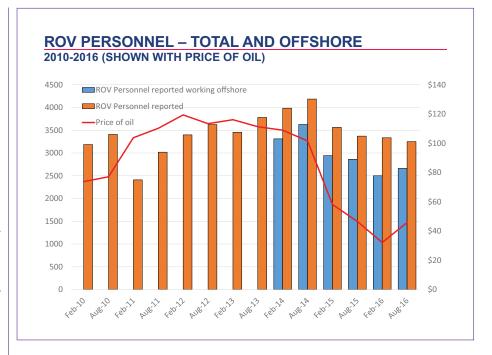
DP operators (DPOs) serving on selfelevating DP vessels had been unable to gain sufficient DP sea time to qualify for or to renew their DP certification. After a series of meetings and consultation, the Nautical Institute is to make changes to its DPO offshore training scheme to accommodate DPOs serving on DP self-elevating vessels in future.

## **Deck cargo**

The Oil Companies International Marine Forum (OCIMF) currently has a workgroup, based in Perth, Australia, tasked with developing guidance on deck cargo management onboard offshore vessels.

The aim is to develop guidelines that can be used by all OCIMF member companies when considering safe cargo operations at their offshore installations. IMCA will monitor the development of the guidelines and ensure they are internationally relevant and not purely regional.

The Marine Division committee has provided initial feedback, and links to relevant IMCA safety flashes have been provided to the OCIMF group.



## **Industry trends shown in ROV statistics**

IMCA has issued its latest annual analysis of ROV personnel and vehicle statistics. There has also been a thorough reassessment of the original reported data going back to 2012, with the results published in a concise new format.

There has been a clear fall in the number of ROV personnel at work and the number of vehicles in use since 2015, due to the continuing economic conditions. IRM work has seen the greatest relative reduction, but drill support

work and construction have also fallen. In contrast, cable laying and the underlying offshore renewable energy activity have shown a continued increase in recent years.

Collection of data for 2017 will start later this year, aiming to publish results early in 2018.

Members can access the report at imca-int.com/rov

## **ROV** guidance updates

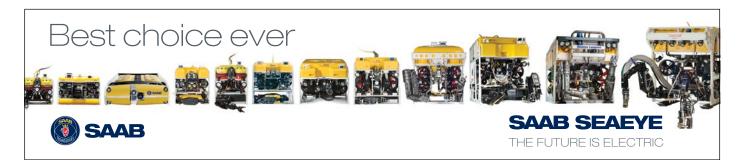
Three ROV publications have been reissued, having been reviewed and updated to reflect current good practice and both technical and regulatory updates:

- The initial and periodic examination, testing and certification of ROV launch and recovery systems (IMCA R 011/LR 011 Rev. 1)
- Terms and conditions for ROV support services (CI 009/R 008 Rev. 1)
- Standard ROV audit document (R 006 Rev. 1). Having completed its guidance review, the ROV committee is now turning its attention to new projects, including priority items on umbilical management/design and operational safety.

## **Offshore Survey**

Workgroups reporting to the Offshore Survey Division committee have started development of a number of new documents, including guidance on the shared use of ROV sensors for survey and positioning and guidance on vertical positioning.

The committee has particularly noted the importance of its role in educating and informing offshore survey stakeholders, including clients, vessel operators and others, which these new documents are intended to assist with.



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