



Annual Report

2016-2017

Society for Underwater Technology

Annual Report 2016-2017

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President's Foreword



*President
Dr David Kirkley*

Last year, the Society celebrated fifty years of successful activity and it was a time to look back on what had been achieved and the huge advances in underwater technology that occurred in that timescale. Those fifty years coincided closely with the period during which oil and gas fields were discovered offshore and the technology to exploit them was developed from what was necessary for the early shallow-water reserves to the huge deep-water fields and remote locations around the globe, often in difficult and hostile places, that are now almost taken for granted. Of course, apart from underwater technology, a wide range of other technologies were needed and they, too, have developed rapidly. Materials, marine vessels, and drilling, are just three obvious ones where there has been a close interaction with our own activities but there are many more such as communications, control technology, or automation where the interaction has been weaker. Without doubt, though, the offshore oil and gas industry has been a major driver for technological progress in many areas and nowhere is this more evident than with underwater technology. Without the stimulus and investment that this has provided, progress would have been much slower and less would have been achieved. It is fair to say that offshore oil and gas has been the dominant factor determining the way underwater technology has developed in the last fifty years.

Looking forward rather than back, one wonders what the next fifty years will bring. Clearly, pressure is mounting to limit the growth of fossil fuel use. In fact, it is likely that its use will eventually decline if there is sufficient international determination, though the timescale is uncertain. Already, we have seen the birth and growth of a new offshore industry as wind energy has become a politically-driven alternative. With that industry comes a new set of challenges and new requirements for working and monitoring in the underwater environment. Other clean renewable-energy technologies such as those using waves and tidal currents will undoubtedly follow. Apart from this, I wonder if we will see new demands arising in the military and defence areas. The hope for a more peaceful and stable world that followed the end of the cold war seems to have evaporated. Without doubt, the new threats that have arisen will require a response. An intelligent and autonomous capability underwater using robotic devices may be one direction that is needed and this could also drive progress in other areas such as imaging and long-range communications underwater. Scientific research is another activity where developments underwater could be driven by the need to go further, deeper, and with more intelligent and autonomous devices. Undoubtedly, there will be many other requirements and applications for underwater technology that we cannot immediately define.

All of the above points to a period of change that the Society must address. The recession in the offshore industry that followed the rapid decline in the price of oil is not yet over. Although the industry will adapt and recover, conditions are unlikely to return to those of the boom years. Probably, the oil and gas industry will not remain the dominant driver of underwater technology in the longer term. The Society must develop effective links with other players that are emerging, offshore wind in particular, as it already has a significant presence and is growing rapidly. This is a challenge the new Chief Executive and the Society's Council must meet. As I come towards the end of my term as President, I encourage them to do so and I wish them well. Also, I wonder what underwater technology will look like in fifty year's time and what sort of new capabilities it will provide. Most of the Society's student members will be around then; some no doubt will be the pathfinders that help to bring them about. Without doubt, the Society's involvement with education will remain crucial. That, at least, is a safe bet!



Awards at the AGM 2016: (L–R): Bob Allwood, Gavin Anthony, Brian Green

Awards 2016-2017

New Fellows

Afton Galbraith
Ross Hendricks
Andrew Haigh
Andrew Pople
Richard Gibson
Dr John Lawson
Brian Green



Awards at All Energy 2017:
Steve Hall (R) presents
Tim Cornelius with the
Lennard-Senior Prize

President’s Award

Awarded to Bob Allwood in recognition of the notable service he has provided to the Society for Underwater Technology over many years and for the extensive contribution made to underwater technology during his career.

David Partridge Memorial Award for Underwater Technology, jointly sponsored by SUT and the Offshore Energy Technical Panel

The David Partridge Memorial was awarded to Nino Fogliani for outstanding individual contributions to and innovations in the fields of subsea engineering and underwater technology.

Houlder Cup for the Best Contribution to Underwater Operations

Awarded to Gavin Anthony, for his outstanding contribution in the field of health & safety in diving operations for many years.

SUT Oceanography Award

Awarded to Prof Scott Glenn for his outstanding contribution to the field of oceanography.

Lennard-Senior Memorial Prize

This award is conferred upon Tim Cornelius in recognition of outstanding individual achievement in the field of Marine Renewable Energy.

Council’s Summary of Activity 2016-2017

Membership Summary		
Corporate Members 171		
Individual Membership		
Category	2017	2016
Hon. Fellows	17	21
Fellows	99	101
Full members	847	908
Associates	N/A	36
Students	155	66
Corporate individuals	765	980
Total	1883	2112

Table 1

Financial Summary Unrestricted Fund (£)		
Category	2017	2016
Income	332, 045	406,440
Expenditure	469,689	722,747
Surplus/ (deficit)	(137,644)	(316,307)
Transfers to restricted fund	-	-
Gain/(loss) on investments	18, 503	2,027
Retained surplus/ (deficit)	(119,141)	(314,280)

Table 2

Membership

The membership of the Society at 30 June 2017 had again decreased since the previous year end, with the decrease in Corporate membership being particularly significant as a result of the continued downturn in the oil and gas industry though Student membership showed a large increase. Again, this was largely expected, but anticipated to be levelling out at these figures.

Finance

A summary of the financial result for the Unrestricted Fund for this year is compared with that for the previous year in Table 2.

The Unrestricted Fund at 30 June 2017 amounted to £194,964 compared with an amount of £312,983 at the end of the previous year, allowing for gains on investments.

Educational Support Fund

A report for the year ending 30 June 2017 from the Educational Support Fund Management, together with a copy of the audited accounts of the Fund, amalgamated as ‘restricted funds’ within the main account, is included in this Annual Report. This year the expenditure exceeded income to the Fund by £5,984, compared with expenditure exceeding income by £37,494 in 2015–2016. This led to a net change in the capital funds for the Educational Support Fund from £203,428 in 2016 to £197,444 in 2017, when gains on investments are taken into account.

D. Brookes
Honorary Secretary
21 September 2017
Registered Office: 1 Quality Court, London, WC2A 1HR, UK.

Chairman's Report

2016/17 has been a pivotal year in the future development of the Society for Underwater Technology with a new CEO, Steve Hall, taking over on the retirement of Bob Allwood in April 2017. Bob Allwood's pending retirement triggered a detailed review by a Council working group of the attributes needed to meet the new challenges faced by the Society. The appointment process attracted a number of very strong candidates and Council was pleased to appoint Steve Hall to the role with his wealth of knowledge, contacts and experience in the area of underwater science. Steve joins us from a long career at the National Oceanographic Centre and he is a long standing member and supporter of the Society. Bob was appointed CEO in 2009 and during his time in the role had seen significant changes to world of underwater technology. Council would like to thank Bob for his unstinting devotion to duty and wish him well for a long retirement.

During the year significant progress has been made towards returning the Society to profit. Council set a target to halve the deficit of 2015/16 during 2016/17 and return to a positive result in 2017/18. This year, whilst still posting a deficit, shows a big improvement over last with the deficit of being reduced from £352k to £125k, thereby beating Council's target for the period. This is in no small part due to the combined efforts and diligence of the London Secretariat and the Branch Committees to both cut costs and to look at new ways of increasing revenue.

Finance

The 2016/17 financial outcome is a deficit of £125k. This figure includes £16k for the support of the ESF students which comes from the ESF restricted fund.

The Society has, over the surplus years, accrued sizeable reserves to cover such eventualities as the dramatic loss of revenue from courses seen in 2015/16. Despite eating into the reserves last year, the Society remains in a strong position with comfortable reserves of £392k, of which £197k are the ESF restricted funds. During the past year much effort has gone into cutting costs, some elements of which provided an immediate return such as the major reduction of business development costs to the tune of a saving of £71k. Longer term savings include the relocation of the London office to Chancery Lane which will realise significant savings in a full year. New measures have been put in place by the Finance Sub-Committee working closely with the CEO to better manage and further reduce costs whilst acknowledging the need to maintain the services to the membership as a learned society.

Revenue from membership fees has shown a small but significant decline whereas the income from the Journal and other publications has remained static. Council, having simplified the individual membership fee structure last year, has reluctantly increased the fees by 5% noting that this is the first increase since 2012. Corporate membership fees remain unchanged as they were recently completely restructured. Inevitably there has been a turnover of both individual and Corporate members with most of the new members coming through the Branches. It is pleasing to note that the strong interest from student and young engineers following initiatives in Aberdeen, London, Houston and Perth continues unabated. Council encourages all the Branches to continue to look at opportunities to provide local initiatives to further the interests of the Society among students and young engineers. They are the Society's future members and will guarantee the long term future of the Society.

It is interesting to note that despite the downturn in the market almost all the UK evening meetings and courses have produced a net contribution to Society funds. This is reflection on the rigour imposed on the initial planning of an event and the ongoing monitoring of expected financial outcome. In this way early decisions can be made to cancel an event if necessary without exposing SUT to losses.



*Chairman of Council
Peter Metcalf*

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Chairman's Report

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Whilst the accounts presented relate to UK and Norway the situation in Perth and Houston demonstrate a similar trend of increasing efficiency and tailoring expenditure to meet the challenges which the oil and gas industry continues to face. Council continues to encourage them in their quest to diversify their underwater technology activities.

Council

A new five-year strategic plan is being developed to take the Society forward in the current constrained climate. In the new age of globalisation this plan will reflect the wishes and needs of the Branches. In parallel Council is reviewing the services and benefits it offers members with a view to improving the effectiveness of the offering. Council is indebted to those members of Council in faraway places who give of their time beyond the normal call of duty by dint of the diverse time zones between Houston and Perth.

Committees of Council

The Committees of Council continue to support Council in the key areas Education and Training, Publications and International Development. It is important that the Branches, particularly those overseas, are adequately represented on these Committees. To better facilitate this, the Chairmen are tasked to seek nominations for Committee membership from the Branches.

On the Education and Training front the Society continues to offer a number of student bursary schemes around the world and it is timely to review the scope of these schemes to develop best practice going forward. In particular the future scope of the ESF needs to be reviewed in view of the increasing difficulty in attracting external funding. There are also many examples of good practice of what the SUT should be doing to support schools and career development at a local level and this should be shared for the benefit of all. Council has recommended that a limited number of awards be made from the ESF fund for this financial year together with the honouring of all existing awards.

Technical Committees

The Technical Committees continue to be the lifeblood of the Society with each Committee growing organically over the life of the SUT. The time has come to review the remits and scopes of each Committee to reflect more closely the needs of the members in today's changing environment. There are many opportunities for the Society to become more prominent in new areas of underwater technology. Where appropriate some committees may elect to set up regional sub-committees in association with a local branch and Council would encourage more dialogue between Technical Committees and the Branches.

By the time this report is published OSIG will have hosted OSIG 2017, a world class conference held every five years. Planning for this event started many years ago and congratulations are in order to the OSIG Committee and all those supporting them for staging such a successful event.

Branches

The worldwide spread of the Society remains unchanged with established overseas branches in Houston, Rio de Janeiro, Perth, Melbourne, Kuala Lumpur, Beijing, Bergen and most recently Singapore. Future geographical expansion opportunities will continue to be explored as and when opportunities present themselves and funding becomes available. In the UK, Aberdeen continues to go from strength to strength with the North of England Branch based in Newcastle and the London and South of England Branch now firmly established.

All the Branches have been very active with local events. The mainstay of Branch activities remains the technical presentations and courses, many of the awareness courses now being tuned to meet local requirements.

Chairman's Report

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SUT Staff

Thanks must be given to the small group of hardworking staff in London and Aberdeen. In London the staff has endured all the headaches which go with moving offices and in Aberdeen the staff have been tirelessly supporting the build up to OSIG 2017 in addition to their day job. In addition we need to thank those in our Houston and Perth Branches. Between them all, they have kept the daily activities and events of the Society on track during the year. I would also like to thank all the Committees, particularly their Chairmen, as well as those of the Branches for all their hard work and the enthusiasm that they bring to the SUT. Without their enthusiasm and dedication the Society would not be what it is today.

In conclusion despite the current financial situation, Council believes the Society remains in a strong place to meet the challenges which lie ahead. The SUT has been through difficult times in the past and each time has grown stronger through the resolve of its members and Council looks forward to 2017/18 as the next step back to surplus and future success.

Officers and Council 2016-2017

President

Dr D Kirkley

Chairman

P Metcalf

Immediate Past President

Prof G Griffiths

Honorary Secretary

D Brookes

Honorary Treasurer

M Cook

Secretary to Council

Mr S Hall

Members

D Baker

R Binks

D Brookes

M Cook

C Curran

R Farrier

Prof G Griffiths

S Hall

B Loth

P Metcalf

J Mann

C Milner

R MacDonald

Prof R Rayner

D Saul

C Saunders

Dr MDJ Sayer

Dr Z Medina-

Cetina

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Chief Executive

S Hall

Membership & Finance Officer

J Hinton

Publications Officer

E Boddy

Journal Officer

E Azzopardi

Administrative Secretary

C Ince

Events Manager

J Adams

Administration & Events Assistant

E Young

Communications Coordinator

Araceli Lopez

Events Coordinator

Patsy Rhymes

Perth Branch & Events Manager

Jennifer Maninin

Finance/Membership Administrator

Fiona Allan

Events Assistant Perth

Corelle Charles

www.sut.org/branch/aberdeeen

Aberdeen Branch

The Aberdeen Branch has had another turbulent year, as the result of the industry still being generally low, although as the investors say we are moving into cautious optimistic period, as the oil price has been nudging up and investors are accepting the new industry 'norm'. The industry within the UK generally sees the employment down to the level of the early 2000's, where it was at an employment level of 100,000 people, where in 2014 it was circa of 200,00; however, as a result of the experience moving from the industry there is now discussions gaps in the industry. This experience and knowledge gap shall create an opportunity for the SUT moving forward in the forth-coming years.

We see the first green shoots of new projects and endeavours in the North Sea and beyond and I believe we are emerging stronger with some new faces in the SUT making an impact. We have managed keep interest and attendances at evening meetings at a reasonable level and brought interesting new themes to light. Once again SUT+ has been a major success with activities throughout the year. Training course uptake is still a major challenge and our offering will need further modification to adapt to the new market conditions. One great new venture is the NASA initiative, more on that below.

Committee

The committee leadership team has stayed the same this year, providing stability in these "choppy waters". In terms of the larger committee over the course of the year Richard Gibson stepped down from the branch committee after many years of excellent volunteer service and we extend our thanks to Richard for his efforts.

In terms of new faces, we have been joined by Louise Goetz from GE and Andy McNamara from Shell. We welcome our new joiners and thank them in advance for their participation in the important year ahead.

One important new face is Jacqui Adams who replaces Nicola Henderson as UK Events Manager, we welcome Jacqui and already are reaping the rewards in terms of organisation and assisting with the Aberdeen branch activities alongside her corporate duties.

As a branch, we are fortunate in receiving an excellent level of support from across the region, covering a broad spectrum of personnel emanating from Operators and Tier One Contractors through manufacturers, consultancies to academia. The composition of the committee covers all these organisations, and it would not be possible for us to conduct the branch events and initiatives without the generous time and effort. We would like to thank their employers for allowing participation, especially as we recognise that individuals' time is challenged.

SUT+

In the past year, SUT+ has organised and held regular educational and networking events aimed at those who recently joined the subsea industry and wished to broaden their industry knowledge and grow their professional network. All the events have been free to attend. This has ensured that the opportunity to learn was available to anyone who was interested. This has in part helped the SUT+ to develop a strong following of junior entrants into the subsea industry; and students reading the many relevant disciplines. To keep these events free to attendees, the SUT+ committee has been innovative and agile to avoid unnecessary costs; and receptive to help from organisations who share our interest in promoting free industry-relevant education. SUT+ most popular events in 2016/2017 have been:

- Technology & Vessel Visits to understand and broaden knowledge
- Chartership event with IMechE, IChemE, IET, IMarEST etc.
- Seminars, Lectures and 'An Evening With...?' Style Events
- Decommissioning workshops



Chairman: Paul Williams

Committee

P Williams *Chairman*
 R Newby *Vice Chairman*
 J Adams *Secretary*
 T Laing *Treasurer*
 P Benstead
 P Blake
 P Duggan
 G Dunbar
 R Gibson
 M Harley
 G Kinnell
 J Mann
 R Newby
 E Pavlovskaja
 H Petersen
 D Petrone
 P Roberts
 M Smith

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Aberdeen Branch

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Networking and Social events

The success this year has set a good foundation to hold more frequent, bigger and better free-events for our members in the coming year.

Training courses

Bookings for training courses have continued to be a challenge in 2016/17 however, our flagship Subsea Awareness Course has a set of new presenters and totally revamped material; this was led by a small experienced Working Group representing the whole supply chain. This was treated as an investment, with a view of attract new interest in the coming year; we have been targeting outside the engineering community and have stimulated some interests from government bodies. It is our intention to revamp other selected course in the coming year in readiness for more activity which looks to be on the horizon.

We would like to take this opportunity to express our thanks to all course contributors, your support is greatly appreciated. Generally, SUT courses differentiate themselves from commercial courses as the presenters are industry practitioners who work in their sphere every day rather than a “paid for” course presenter. This leads to a deeper understanding of subject matter and hence the ability to transit this information to the delegates is often made easier.

Annual sponsorship

For 2016/17, we continued with the streamlined sponsorship model with a single tier of sponsors. Sponsoring companies included: GE Oil & Gas, KD Marine, One Subsea and Wood Group. The generous sponsorship has enabled us to conduct a variety of educational activities such as: SUT+ field trips and site visits, Christmas Lectures for Schools as well as supporting our regular evening meetings and social events. In 2017/18 we will again augment this single tier sponsorship approach with individual sponsorship of evening meetings where possible.

Evening Meetings

The evening events have offered a range of interesting subjects, hosted at Robert Gordons University. The numbers of these events have ranged from circa 60 to 100 attendees, across the oil and gas subsea sector, although this is a little down on previous years.

Evening meetings started in September 2016 with the ever-popular Gadgets & Widgets. A lively set of 10-minute presentations, this is a chance for companies to tell the audience about smart gadgets, or innovative thinking, and a chance for the audience to learn what’s new in the industry.

In November 2016 an interesting evening discussion on ROVs and diving over the last 30 years took place. Martin Dane presented the history of diving in the North Sea this was followed by Jim Mann doing the same for ROV technology. Finally, Kongsberg took us into the future with developments in AUV technology.

January 2017 saw the informative Business Breakfast run again with talks over bacon, sausage and coffee. The talks centred around *Are we through the trough and heading out the other side with confidence in the market?* The speakers were James Hall from WoodMac and Mike Beveridge from Simmons & Co.

The February 2017 evening meeting focused on Key Subsea Projects and a general update was given regarding the redevelopment of the Schiehallion and Loyal fields west of Shetland. This project is otherwise known as Quad 204. Following that Apache presented on the Beryl Far North Terrace Project. FNT is a single well subsea tie-back 4km southwest of the Beryl Bravo platform with production and gas-lift flowlines, control

Aberdeen Branch *continued...*

umbilical, new standalone subsea control system and topside modifications on the host platform. Subsea 7 then gave an update on the Catcher project. A threefield development tied back to a central FPSO via pipeline bundles and riser system.

March 2017 saw the discussion change to Innovative Installation Techniques. The first presentation was from Ocean Installer and explained the heavy lifts undertaken in difficult conditions on the Total Moho-project. Bibby Offshore were up next with a case study on the considerations and complexities encountered during an umbilical extraction, using a combination of vessels in a challenging timeframe. Finally we had a retrospective presentation from Subsea 7 on the 81 bundles currently installed over the years.

In April 2017 the focus switched to Seabed Machines. Saab Seaeye discussed seabed resident robotic technologies across a range of markets. Canyon Offshore presented on the evolution of jet and mechanical trenchers. The evening was completed by Ecosse Subsea who presented the SCAR Seabed System for Pre-Cut Trenching, Boulder Clearance and Backfill Operations.

May 2017 was a film theme "Back to the Future". A key to maximising the economic recovery from the UKCS will be the exploitation and development of small pools and stranded assets. A one of the main technologies to enable this production may be the use of standalone facilities, particularly as the major hub infrastructure is decommissioned. The evening reflected on examples of what has been done and the lessons learned over the years, the current asset mix and road-mapping which technologies may fit and showcasing some of the new and innovative ideas. Presentations on BP SWOPs, the NSRI view on standalone facilities, the OPB production system, the SeaCaptur NUI production operating system. Finally, the OGTC gave a presentation on their setup as a catalyst for change.

The theme in June 2017 was Pipeline Management. A total of 37 people listened to three speakers discuss one of the oldest problems in pipeline management, with some innovations that testify to the industry's continuing inventiveness. The majority of subsea pipelines are silent, giving up information about their status only when inspected by internal pig or external survey. Sensors on wells and platforms at either end tell what's going on, but conditions inbetween must be inferred. So how do we improve matters so that we can reveal what we have only so far been able to guess at *i.e.* show whether internal corrosion and freespan are under control?

Other Events

The incredibly successful SUT Christmas Lectures for Schools took place once again in December 2016. Over 400 school kids attended each session and received interesting presentations from Macduff Marine Aquarium, the National Hyperbaric Centre and Jeremy Cresswell from the Press & Journal.

AGM & Dinner, December 2016, held at the Marcliff Hotel, had circa of 230 people attending, ranging from Operators, Contractors, Suppliers and Academia offering a balanced representation of the oil and gas subsea sector. The formal business of the Branch AGM took place before an excellent meal and was presented by Branch vice-chair, Richard Newby. A Head & Tails competition followed in aid of the Educational Support Fund (raised £1950) The evenings speeches were given by Colin Welsh, Head of International Energy Investment Banking for Simmons & Company and he reflected upon on the oil & gas market as it pertains to the subsea industry and the North Sea. Paul de Leeuw, Professor of RGU Oil and Gas Institute shared his thoughts on thoughts on 'What does the future hold for engineers?'

The Aberdeen Branch Award of Merit went to Martin Dane; well accredited within the subsea sector of the diving community.

Aberdeen Branch

continued...

In addition, there were SUT Fellowship Awards given to John Lawson and Richard Gibson.

In March 2017, a collaboration between the Society of Petroleum Engineers Aberdeen Section, the Energy Institute, the Society for Underwater Technology, TechFest and the Aberdeen Science Centre with support from numerous organisations and principal sponsor Statoil, brought a NASA astronaut and a NASA space scientist to Aberdeen. The objective was to inspire the next generation of engineers and scientists. Nearly 2000 school children and 1000 members of the public were engaged with a powerful message that science and technology is important, is essential, and is something they can do. Building on this success, we have jointly developed a 2020 Vision to “Inspire the Next Generation” by delivering a three-year programme of “energy linked” space events and school resources that are sustainable and inclusive.

The final event of the year in June was the SUT Annual Golf Day. The Society of Underwater of Technology annual golf event was 21 years old this year and provided an excellent opportunity for the Tigers and the Happy Gilmours of the subsea community to enjoy a quality social event. There were 45 players from across the industry and thoroughly day enjoyed by all, which was complemented by an excellent day of weather. The venue this year was Peterculter Golf Club, and excellent course for all abilities in a friendly atmosphere in beautiful surroundings surrounded by the Dee river. The golf was followed by a networking BBQ. The majority of the prizes were donated, including a donation of a 4 ball tee time, which was used to raise money for the education fund; £380 was raised overall.

www.sut.org/branch/australia-perth

Australia Perth Branch (incorporating Melbourne)

The local subsea market which is primarily oil and gas focused, is in common with the rest of the energy market, and proves to be cost conscious and challenging. A significant proportion of the committee time has been spent trying to find new efficiencies and solutions to help deliver our events and courses.

Notwithstanding these challenges, the Perth Branch, YES! sub-committee and OSIGp have successfully completed or established a number of new and interesting initiatives for the local membership.

The “SUT Golden Ticket” draw successfully raised additional revenue through sponsorship and ticket sales. These funds have been subsequently used to support the continued funding of local scholarships.

The Subsea National Engineering Registration sub-committee has continued to work with local industry to establish a set of competency profiles and framework for professional registration assessment as a Subsea Engineer. In addition, the work with APIA for the pipeline competency framework continues post launch of the material developed over the last two years.

Lastly we have established the Phoenix initiative, which aims to provide a forum where experienced engineers and scientists can unlock their increased availability outside the market to support opportunities of pro-bono work, mentoring or collaboration with their peers. I look forward to seeing how this exciting idea evolves in the coming year.

Perth Branch Committee

Committee members continue to provide enthusiastic, imaginative and creative support to the branch bringing in a fresh outlook with great ideas. We would like to thank all committee members for their efforts in enabling us to reach our goals. We are indebted to the 2016 and 2017 committee, and in particular wish to express our thanks to retiring committee members who gave very generously of their time, knowledge and support.

A modest rotation of committee members brings in fresh ideas and enthusiasm which are essential to maintaining a vibrant society; however it also allows us to retain a core of experience to ensure continuity of overall vision.

Current Perth Branch Sub-committees:

- **Advertising:** Paul Upjohn, Mark Casey & Terry Griffiths
- **AGM & Annual Dinner:** Giada Bufarale, Linden Blair, Sarah Elkhatib, Nick McNaughton & James Martin
- **AOG 2017:** Nick Brown, Sarah Elkhatib, Terry Griffiths, Rex Hubbard, Julie Morgan, Diederick Naude, & Chris Saunders
- **AOG 2018:** Nick Brown, Sarah Elkhatib, Terry Griffiths, Ali Mazaheri, Julie Morgan, Diederick Naude, Chris Saunders & Si Huai Yeaw
- **AUT 2017 Conference:** Shuhong Chai, Ben Hunt, Steve Duffield, Ian Hobbs, Pat Fournier, Nick Lake, Simon Tanner, Peter Wademan & Phil Wells
- **Engagement:** Enda O’Sullivan, Paul Upjohn, Nick Brown, Paul Farquharson, Sarah Madrigal & James Martin
- **Evening Technical Meeting:** Paul Upjohn, Mark Casey, Sarah Elkhatib, Rex Hubbard & Paul Farquharson
- **Finance:** Chris Saunders, Rex Hubbard, Sarah Elkhatib & Norman O’Rourke
- **Golf Day:** Chris Saunders, Ian Wilson, Obi Gjerde, Rodney Silberstein, Dan Pickering & Liam Thanh



Chair: Chris Saunders

Committee

C Saunders *Chairman*
 R Hubbard *Vice Chairman*
 N O'Rourke *Secretary*
 S Elkhatib *Treasurer*
 J Maninin *Events Manager*
 C Charles *Events Assistant*
 F Allan *Administrator*
 N Brown
 M Casey
 S Chai
 P Farquharson
 I Finnie
 A Galbraith
 S Gourvenec
 T Griffiths
 M Hemsted
 R Hendricks
 E Lindahl
 J Martin
 P Upjohn
 S Huai Yeaw

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Australia

Perth & Melbourne Branch

continued...

- **Membership:** Mark Casey, Nick Brown & Terry Griffiths
- **OSIG Perth:** Sarah Elkhatab (SUT Rep). See below for full 2016/17 summary.
- **Overseas Branch Support (SUT KL/Singapore/Melb):** Sarah Elkhatab, Norman O'Rourke, Enda O'Sullivan & Paul Upjohn. Includes liaison with Marin Abelanet (KL), Derek Donaldson (Singapore), Craig Ferguson (Singapore), Stefania Narum, (Melbourne)
- **Phoenix:** Terry Griffiths, Norman O'Rourke, Julie Morgan, Ian Wilson (SUT Reps). See below for full 2016/17 summary.
- **Scholarships:** Shuhong Chai, Mark Casey, Julie Morgan, James Martin, Nick McNaughton, Giada Bufarale & Nick Bardsley
- **Subsea Controls Down Under 2016 Conference:** Ross Hendricks, Julien Levadoux, Harry Mackay, Harvey Smith, Derek Thompson & Paul Upjohn
- **Subsea Engineering Registration:** Nick Bardsley, Nick Brown, Afton Galbraith, Rex Hubbard, Chris May, Chris Merrick, Julie Morgan, Norman O'Rourke, Terry Griffiths, Chris Saunders & Ian Wilson
- **YES!:** Nick McNaughton, Chris Saunders & Si Huai Yeaw (SUT Reps). See below for full 2016/17 summary.

SUT Perth Branch Events

SUT training courses, evening technical meetings and conferences continue to attract support from presenters and delegates.

This year we also introduced our Golden Ticket raffle to raise funds to contribute to SUT Scholarships, special interest groups such as YES! and community events they're involved in. The winner won a free year with the SUT Perth Branch which included Individual Membership for one year, an SUT gift pack and complimentary attendance to all our 2017 events. We are very thankful to Woodside Energy who very kindly sponsored the initiative.

Annual Dinner & AGM – 18 November 2016

Our 13th AGM was held this year prior to the Annual Dinner at the Hyatt Regency Perth. The Chairperson, Treasurer and Secretary's Reports were heard and the new 2017 Committee announced. Afton Galbraith and Ross Hendricks were presented with Fellowship Awards for their hard work and great contribution to the Perth Branch. Sincere thanks were also acknowledged for the members, sponsors, presenters, office bearers, committee, sub-committees and SUT Staff during the year.

Our Annual Dinner then kicked off decorated to celebrate SUT's 50th Anniversary. It proved yet again to be a very popular event with 258 guests in attendance. As everyone arrived two cartoonists walked the floor doing some fantastic caricatures of our attendees. During the Chairpersons speech the 2017 Scholarship Winners were announced, our new fundraising initiative, the Golden Ticket Raffle was drawn along with the Door Prizes. Then to acknowledge SUT's 50th Anniversary we had slides with events that occurred in 1966. Along with the musical entertainment during the evening we also had a table of photo props which proved very entertaining and produced some very funny photos. An enjoyable evening was had by all.

Dinner sponsors included Shell Australia, Australian Marine Complex, Subsea Engineering Associates, Atteris and NGI.

Australia Perth & Melbourne Branch

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Conferences

Subsea Controls Down Under, 19-20 October 2016

The Subsea Controls Down Under two-day conference is a bi-annual event and is aimed at those engaged in remote control and monitoring of subsea systems. The conference, provides a unique forum for the supplier and operators of subsea technology to exchange views and experiences.

The aim of this particular conference was to bring together the many diverse disciplines engaged internationally in Subsea Controls and Umbilical technology, to share experiences gained by discussing regional challenges, as well as new advances in global subsea technology. For this conference the theme was “Enhancing Value for the Future: Lessons Learned and New Technologies”, showcasing ways of bringing new ideas and technology to provide operational cost savings plus understanding from an operator’s viewpoint how we can learn from experiences locally and internationally

The Ice Breaker was held on board the MV River Bells which cruised along the Swan River. Delegates enjoyed canapés and refreshments while enjoying wonderful views of Perth from the water.

The conference was opened by Julie Morgan, the SUT Perth Branch Chairperson, followed by the Keynote address by Sean Salter, Woodside Energy Ltd. Presentations on Day 1 were made by Forsys Subsea, Schlumberger Software Integrated Solutions, OneSubsea, FMC Technologies, Siemens Subsea, Emerson Process Management, ClampON AS, Sonardyne International Ltd, Atteris Py Ltd and Aker Solutions. Session chairs were Harry Mackay, Woodside Energy Ltd and David Keilty, Chevron Australia. At the end of Day 1 drinks & canapés were laid on in the exhibition area where guests could network and view the exhibition.

On Day 2 the presentations were by Aker Solutions, Wittenstein Motion Control GmbH, WFS Technologies Ltd, Nexans Norway AS, Solartron ISA, The University of Western Australia, Sensorlink, Yokogawa Australia, GE Oil & Gas, Viper Solutions, SEAR consultant, Proserv Controls (UK) and FMC Technologies. A panel discussion was also held which provided the attendees the opportunity to ask questions of professionals from INPEX, FMC Technologies and Woodside Energy Ltd. Julie Morgan, SUT Perth Branch Chairperson made the closing address. Session chairs were Derek Thomson, Shell Australia and Helena Forsyth, INPEX.

We had a great attendance of 105 delegates over the two days. The event was sponsored by Woodside Energy Ltd, Shell Australia, Pressure Dynamics, Hydraulic Energy, Proserv, OneSubsea, C-Kore and GE Oil & Gas. An impressive exhibition included ATV Spa, C-Kore, pressure Dynamics, Sensorlink, Shell Australia and Woodside Energy Ltd. Huge thanks to the Conference Committee: Ross Hendricks, FMC Technologies; Harry Mackay, Woodside Energy Ltd; Julien Levadoux, OneSubsea; Derek Thomson, Shell Australia; Harvey Smith, Woodside Energy Ltd and Paul Upjohn, ATV Spa.

AOG (Australian Oil & Gas) Conference and Exhibition, 22-24 February 2017

This year’s Conference was free to attend and was held within the Exhibition area for the first time. Partnering with Diversified, SUT, Subsea Energy Australia (SEA) and Subsea UK, the AOG Subsea Forum focused on how the Australian Subsea industry could adjust to the evolving market. This year’s subsea sessions were:

- Provoking stimulation
- Subsea repairs and interventions
- Subsea Inspection, monitoring and life extension

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Australia

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- Subsea systems design optimisation
- Soils
- Collaboration and inspiration
- Subsea processing
- Norwegian subsea showcase
- Decommissioning
- Data measurement and monitoring
- Autonomous subsea operations

Nearly 1000 subsea professionals attended the Subsea Forum alone in 2017 and feedback for the new style of conference was very positive.

Courses & Site Visits

The following training courses and site visits were run:

- Flexible Risers & Flowlines Course, 24-25 August 2016
- Subsea Awareness Course, 19-23 September 2016 (including site visits to FMC Technologies and Oceaneering Australia)
- Achieving Reliable Subsea Systems Course, 15 February 2017
- Operating Subsea Production Systems Course, 29 March 2017
- Subsea Awareness Course, 8-12 May 2017 (including site visits to GE Oil & Gas and Oceaneering Australia)
- OSIGp: Offshore Geohazards and Geotechnics Course, 7 June 2017

Evening Technical Meetings

The following evening technical meetings were held in Perth:

- **Optimised In-Fill Projects, 10 August 2016**
Presentations by: Fiachra Gleeson, Woodside Energy Ltd; Hammam Zeitoun, Wood Group Kenny; Stephen Eyssautier, Subsea 7. Chaired by Liz Lindhal, Wood Group and co-sponsored by Wood Group and Woodside Energy Ltd.
- **RIGGS, DIGs and Safely Engineering Around Geohazards, 12 October 2016**
Presentations by: Sam Stanier, UWA; Stella Korekaas, Fugro AG; Alex Bandini-Maede, NGI Perth. Chaired by Kevin Day, Ten Point Interpretation and co-sponsored by Fugro AG and The University of Western Australia.
- **Shark Fest, 8 February 2017**
Presentations by: Miles Parsons, Curtin University; Lindsay Lyon, Shark Shield Pty Ltd; Richard Tamlage, Shark Mitigation Systems Ltd. Chaired by Terry Griffiths, Aurora Offshore Engineering and co-sponsored by The University of Western Australia and Shark Mitigation Systems.
- **Controls, Renewables & Shipwrecks, 12 April 2017**
Presentations by: Michael Lewis, Proserv Offshore Pty Ltd; Eoghan Quinn, New Energy Advisian; Si Huai Yeaw, Aker Solutions. Chaired by Paul Farquharson, GE Oil & Gas and co-sponsored by Advisian, INTECSEA, Proserv and Rosen.
- **Innovative Field Development, Pragmatic Riser Analysis and Connecting with Moorings, 14 June 2017**
Presentations by: Carolyn Thain, Woodside Energy Ltd; Celine Lanoelle, Atteris; Emily Carmichael, DOF Subsea. Chaired by Allison Selman, WISE (Women in Subsea Engineering) and sponsored by Atteris, DOF Subsea, WISE and Woodside Energy Ltd.

Australia Perth & Melbourne Branch

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Full post-event reports on all Evening Technical Meetings can be found at www.sut.org/events

The Committee is, as always, grateful to all presenters and chairpersons for their time and efforts in bringing our Evening Technical Meetings to fruition, and for those generous corporate members who support the evenings with their sponsorship.

Golf Day – 28 October 2016

Our Annual SUT Perth Branch golf day was held at Wembley Golf Course again this year with a total of 27 teams battling it out, a great day was had by all. We are very grateful for the sponsors who made this possible including: Subsea Engineering Associates, Applus RTD, OneSubsea, Viking Seatch, Energy Agencies, Wood Group and Castrol Offshore.

SUT Perth Sub-Committee Updates

Branch Administration

The Perth Branch continues to be effectively and efficiently managed by our three part-time personnel: Fiona Allan (Administrator: Finance/Branch/Membership), Corelle Charles (Events Assistant) and Jennifer Maninin (Branch & Events Manager). They all continue to take great pleasure in coordinating and organising all of our events, administration, membership and accounts for the society.

Finance

SUT Perth Branch ran at a deficit this financial year of approximately \$AUD 50,000. This was mainly due to fewer attendees at our courses due to the turndown in the current economic climate.

There has been significant cost cutting where possible. An audited Income and Expenditure Statement for the year will be forwarded to Council following the finalisation of the audit in September 2017. Next year's Budget Forecast of a deficit of \$AUD 27,000 has been forwarded to SUT in the UK.

Melbourne Snapshot

SUT Melbourne has maintained its membership levels this year. Local members have access to technical networking events, which has been made possible utilising administration and event support from Perth.

In November 2016, Melbourne held an Evening Technical Meeting titled "Recent Projects, New Technologies". Presentations were by Dr M Tran, JACOBS ANZ Buildings & Infrastructure; Adam Lowry, APAC-3DatDepth and Ben Healy, Thrust Maritime. Thanks to our Sponsors - AMOG Consulting, Thrust Maritime and Wood Group Kenny.

- Membership (Perth and Melbourne) as at 30 June 2017:
- Students: 113
- Individual: 180
- Corporate: 32
- Academic / Not for Profit: 4
- Global: 24

Membership continues at a stable level. There has been no increase in Membership pricing. A Membership committee vetting process is still in place to ensure only people and organisations truly involved in the underwater world are elected to the various membership categories.

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OSIG Perth Overview – including OSIGp events

OSIGp is the Offshore Site Investigation and Geotechnics Perth special interest group of the SUT covering the 4G's: Geology, Geophysics, Geomatics and Geotechnical Engineering.

Six years after its inception, the OSIGp Committee comprises 16 representatives of the 4G's including operators, consultants and research organisations that meet monthly to organise training courses, seminars and movie nights.

Over the past 12 months OSIGp has provided an impressive 930 Continuous Professional Development (CPD) training hours including:

- **Offshore Geohazards and Geotechnics:** Risks and Opportunities: a one day course explaining the interaction of geohazards, geology and geotechnical engineering on the North West Shelf of Australia and beyond.
- **OSIGp Selections of OTC 2017:** an evening seminar at the Indian Ocean Marine Research Centre (UWA) with the presentation of four papers from OTC Houston.
- **RIGSS, DIGs and Safely Engineering Around Geohazards:** an SUT Evening Technical Meeting describing the development of remote intelligent geotechnical seabed systems for data collection, the value of diagnostic integrated geosciences and approaches for mitigating the impact of geohazards on subsea infrastructure.
- **Harnessing Wave Energy:** an evening seminar held jointly with the Australian Geomechanics Society examining geotechnical aspects of two different wave energy converter projects being developed in Western Australia.

We have also contributed to (or continue to contribute to):

- **AOG 2017** conference where a technical session was organised and chaired by a member of the OSIGp Committee.
- **SUT Subsea Awareness courses** where presentations are given on positioning, geomatics, geophysics, geohazards and geotechnical engineering.
- **OSIG 2017** international conference in London by encouraging the submission of Australian papers and chairing technical sessions.
- **OSIG UK's** Pipelines Guidance Note with representation on the Subcommittee.
- **OSIG Houston** technical webinars by publicising these events to the community.
- **Autonomous Underwater Technology Conference 2017** organised by the Australasian Hydrographic Society and SUT, with representation on the organising committee.

Overseas relocations have resulted in several changes to the OSIGp committee over the year and thanks goes to all OSIGp committee members past and present (listed below) for their enthusiasm and hard work. Collaboration with SUT, OSIG UK and Houston has been positive and productive. Finally we would like to thank our speakers and sponsors without whose generous contributions these events would not have been possible.

- | | | |
|---|------------------------------------|---|
| • Alex Bandini-Maeder
(Vice Chairman 2016) | • Sarah Elkhatab | • Tim Pugh |
| • Antonio Borges Rodriguez | • Minne Faber (Secretary 2016) | • Peter Ramsay |
| • Paul Choate | • Pat Fournier | • Mark Simkin |
| • Fiona Chow
(Chairperson 2016 & 2017) | • Chris Haykin
(Secretary 2017) | • Sam Stanier |
| • Michael Cocjin | • Stella Kortekaas | • Damon Sunderland
(Secretary 2016 & Vice Chairman 2017) |
| • Kevin Day | • Laurent Langhi | • Asrar Taluker |
| • Gareth Edwards | • Sarah Madrigal | • Simon Tanner |
| | • Chris Meecham | • David White |
| | • Robert Mueller | |

Australia Perth & Melbourne Branch

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Overseas Branch Support

The Perth Branch formed a sub-committee this year specifically to assist other more local branches when/if necessary. From this the sub-committee has been somewhat involved and can report:

Kuala Lumpur Branch – The Kuala Lumpur SUT Branch has held a couple of lunch technical meetings whereby two technical presentations plus lunch being served has seen good numbers attending at the Twin Towers venue with more being planned for the future. In addition to this the introduction of a monthly social networking event within the city centre has been a great success with a mix of regular and new faces attending each month.

Singapore Branch – The Singapore branch have reintroduced their Evening Technical Meetings with a new venue in Boat Quay. It is hoped the central venue will attract new members and continue to see good numbers in attendance as was seen at the first of their ETM's, to which more are planned going forward.

Phoenix Overview

The Phoenix Committee has established a constitution to govern this exciting new Special Interest Group, and continues to meet monthly to progress opportunities in areas such as training, mentoring, and collaboration with peers to facilitate innovation in the subsea space.

Sub-Committee includes:

- | | | |
|--------------------|----------------------|----------------------|
| • Benjamin Ahani | • Pawan Gupta | • Rodney Silberstein |
| • Craig Black | • Tim Hart | • Scott Sneddon |
| • Paul Choate | • Charles Ludovico | • Paul Sutton |
| • Peter Clarke | • Julie Morgan | • Amir Tabei |
| • Allan Devlin | • Abdul Mueed | • Matt Tibbitts |
| • Philippe Goudeau | • Cornelius Nienaber | • Ian Wilson |
| • Terry Griffiths | • Norman O'Rourke | |

Scholarship Awards

SUT Perth branch has continued with our policy of supporting students studying relevant courses in Australia and displaying a strong interest in continuing into a career or further studies in underwater disciplines.

This year we awarded two scholarships and are pleased at the continued and positive uptake of scholarships by the student fraternity. Both scholarship recipients were from the University of Western Australia this year. The most worthy recipient was awarded the "Chris Lawlor" Scholarship.

Subsea National Engineering Registration

Since we resolved to utilise the Engineers Australia template earlier this year (thus avoiding the intellectual property issues with using APGA's framework) the work has been progressing well. The subcommittee regularly meets every 2nd Tuesday and we have now drafted 19 of the 49 proposed competency profiles. Woodside's in-kind contribution of resources to draft and peer review competency sheets has accelerated this process and is greatly appreciated.

YES! (Young Engineers & Scientists) Overview – including YES! Events

YES! was formed in 2013 to build a community of young subsea professionals, promoting collaboration and networking to ultimately drive the future of the subsea industry. SUT

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Australia

Perth & Melbourne Branch

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YES! aims to:

- Create awareness of the subsea industry amongst young engineers and scientists
- Develop young engineers and scientists within the subsea industry
- Provide networking opportunities to build relationships amongst young engineers and scientists within the subsea industry.

The past year has seen YES! taken to new heights through the hard work of an enthusiastic new committee. Building on the success of the previous 12 months, the committee set out to review the achievements of YES! from its inauguration, and to define new goals for the future. Through a variety of events (as highlighted below) we've been busy further promoting YES! and the local subsea industry to a wide audience, from primary school students through to young professionals. We have been striving to further relationships with local universities in order to engage with and inspire the next generation of subsea engineers and scientists. The YES! Committee also played an integral part in the launch of the SUT golden ticket, which provides support to the SUT scholarships.

The service provided by the YES! sub-committee members has been immense and their time and effort volunteered throughout the past year has allowed YES! to continue to thrive in the subsea community. These committee members are:

- | | | |
|---------------------------|--------------------------|-------------------------|
| • Nicholas Bardsley | • Thomas Friberg | • Matthew Moore (2017 |
| • Linden Blair | • Victoria Hann | <i>Chairman)</i> |
| • Giada Bufarale (2016/17 | • Peter Ingram | • Naomi Naveh (2015/16 |
| <i>Student Liaison)</i> | • Jatin Lodhia (2017 | <i>Student Liaison)</i> |
| • Daniel Causon | <i>Programme Leader)</i> | • Liam Salter (Student |
| • Kelsie Clark | • Ray Maujean | <i>Liaison 2017)</i> |
| • Alex Clifford | | • Ben Skeen |

The YES! Sub-Committee is excited about the year ahead in the subsea industry and looking forward to celebrating their five-year anniversary in 2018.

YES! events

The Young Engineers & Scientists (YES!) Sub-Committee ran the following YES! Evening events over the last financial year:

- **UWA O-Tube Site Visit, 1 September 2016**
Lead by Terry Griffiths, University of Western Australia (and the O-tube team) and Ray Maujean, Fugro AG. Sponsored by The University of Western Australia.
- **YES!/EA/APGA Event: Offshore Pipeline Engineering, Subsea Engineering, and the NER, 6 October 2016**
Presentations by: James Westcott, Engineers Australia WA; Eric Jas, Australia Pipelines and Gas Association; Ian Wilson, SUT. Chaired by Nick Bardsley and sponsored by APA.
- **Quiz Night, 10 November 2016**
Lead by Ray Farrier, Ray Farrier Consulting and Linden Blair, Woodside Energy. Sponsored by Rosen.
- **Casual Catch Up, 2 March 2017**
Informal evening catch up, buy your own drinks and nibbles evening.
- **Cyber Security in Oil & Gas, 25 May 2017**
Presentations by: Loai Khalayli, Woodside Energy Ltd; David De Lima, Cisco Systems; Nathan Formby, GE Digital and Mirel Sehic, Honeywell. Chaired by Kelsie Clarke, Woodside Energy Ltd and Sponsored by Woodside Energy Ltd.

Australia Perth & Melbourne Branch

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Full post-event reports on all YES! events can be found at www.sut.org/events

On top of the above, YES! Committee members also volunteered at the following industry/community event: **PCWA Next Generation Expo, 2 September 2016**

With the previous few years primarily focussing on ensuring the sustainability of the SUT in Perth, the focus for 2017/18 has shifted slightly to look at some of the medium to long term initiatives which will support the growth of the society and membership base going forward:

- In 2018 we aim to establish a mentoring program to aid the development of up and coming subsea engineers. This will importantly draw on the significant experience that we have in the society to provide 1:1 mentoring capabilities.
- We will be reviewing our line-up of courses and training materials to build on the successful subsea awareness course and competency frameworks. Courses and training continue to be the SUT's most significant source of revenue and ensuring we can offer an evolving range of materials will be an important factor in the SUT's success.
- Expanding the membership base of the local SUT branch beyond our core oil & gas base to include new areas such as alternative energy and marine science.

I expect 2017/18 will be another difficult year for the SUT but with the work put in place by previous committees and the generous support of our local membership base, I believe it will be another positive year for SUT Perth.

Brazil
Branch

www.sut.org/branch/brazil



Chairman: Prof Segen Estefen

Committee

- Prof SF Estefen *Chairman*
- Prof M Vaz *Secretary*
- T Netto *Treasurer*
- VC Santos *Executive Manager*
- C Bonfim Silva
- P Couto
- E Labanca
- E Nakagawa
- C Paulo
- M Teixeira

Contact

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- t** +55 21 2562 7790
ext. 217

The SUT Rio Branch has continued to promote seminars on technologies and activities related mainly to offshore oil & gas sector. In the period 2016-2017 there was a strong involvement of the Branch in participating and promoting the Brazil-Japan Cooperation in Naval Architecture and Ocean Engineering.

Seminar: The Future of the Pre-Salt Reservoirs in Offshore Brazil

The Seminar was held at COPPE Auditorium, Federal University of Rio de Janeiro, on 25 July 2016, with the participation of more than 200 people from academy, industry and government. The presenters exploited three main points: Economic Perspectives of the Pre-Salt Reservoirs, Modifications of the Brazilian Petroleum Law, and Technology and Local Content.

Brazil-Japan Academic and Research Cooperation

The Branch has provided support for different events in Brazil and Japan aiming at this cooperation agreement and helped promoting the joint distance learning courses with the participation of students from different Universities of both countries. The following offered courses had 45 hours of lectures each: Risers and Pipelines, Ocean Renewable Energy, Subsea Well Construction and Petroleum Production Systems, Ocean Fluid-Structure Dynamics, Economics of Marine Natural Resources, and Systems and Control Technology.

www.sut.org/branch/china

China Branch

The year of 2016-2017 has seen another active programme of SUT branch activities in China. Our successful programme of meetings, seminars and reports continues.

SUT Technical Conference 2016

The Underwater Technology Technical Conference (SUTTC 2016) is the major symposium in China for scientists, engineers and practitioners all around the world to present their latest researches, results, ideas and applications in subsea areas, especially in the developments of subsea production system as well as exchange minds on the deepwater oil and gas industry in the South China Sea. This Conference was held in Beijing, China, on 26-30 September 2016. It was hosted by SUT China and China University of Petroleum, Beijing, and also endorsed by the International Ship and Offshore Structure Congress, Chinese Society of Theoretical and Applied Mechanics, and Chinese Ocean Engineering Society, etc. The subjective of the conference was “New Generation of Subsea Production System”. There were around 100 attendees, and 43 papers presented at the conference.

Seminars and Reports

- Report focused on **Research on Application of Internet of Things in Marine Engineering Structural Integrity Management**, organised by SUT China and China University of Petroleum, 3 March 2017, China University of Petroleum. Audience: 30 people.
- Academic report emphasised on **Structural Integrity Monitoring for Oil and Gas Industry**, organised by SUT China and China University of Petroleum, 17 March 2017, China University of Petroleum. Audience: 40 people.
- Discussions about the plan of conference **SUT China 2017** – organised by SUT China, 10 April 2017, China University of Petroleum, Beijing. Audience: 15 people.
- Report focused on **Advances in Marine Energy Safety and Well Control Technology**, organised by SUT China and China University of Petroleum, 18 April 2017, China University of Petroleum. Audience: 30 people.
- Academic report emphasised on **Mining Technology and Equipment for Marine Combustible Ice**, organised by SUT China and China University of Petroleum, 13 June 2017, China University of Petroleum. Audience: 40 people.



Chairman: Menglan Duan

Committee

ML Duan *Chairman*
 SW Zhou and HY Zeng
Hon. Chairmen
 LB Zhang *President*
 JJ Gu *Treasurer*
 Y Zhang *Secretary*
 WL Dong
 YH Gu
 Y Huang
 XJ Jin
 GH Li
 HJ Li
 WH Li
 XZ Li
 ZG Li
 Y Liang
 BP Lu
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Houston
Branch

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Chairman: Zenon Medina-Cetina

Committee

- Z Medina-Cetina *Chairman*
- J van Smirren *Secretary*
- D Schlater *Treasurer*
- J Allen *Education Committee Chair*
- M Ancheril *Subsea Engineering and Operations Committee Chair*
- S Williamson *OSIG Committee Chair*
- A Haigh *School Touring Committee Chair*
- L Brant
- C Curran
- E Doyle
- D Duron
- K Faulk
- A Haigh
- C Heins
- C Johnston
- S Johnson
- J Jondle
- P Jukes
- M Kirk
- R Osborne

Contact

e communications@southouston.com

SUT US is comprised by an Executive Committee; three technical committees, Offshore Site Investigation and Geotechnics (OSIG), Subsea Engineering and Operations (SEO), and the newly established Group on Environmental Forces (GEF) officially launched on 10 August 2017; by two non-technical committees, the Young Professionals and Education Committees; and by three student chapters, Texas A&M University (SUT-TAMU), the University of Houston (SUT-SES-UH), and the Texas A&M University – Galveston (SUT-TAMUG) established in January 2017. All are active groups that meet regularly and have active memberships.

SUT US’ staff is comprised by Mrs Patsy Rhymes who assumes the coordination of all events; Ms Araceli Lopez who is responsible for the coordination of communications.

We recently received two new additions to the team. Mrs Natalie Zielinski, Ph.D. student in the Department of Ocean Engineering at Texas A&M University. She leads the launching of SUT US’ three new technical committees:

- Renewable Energy
- Environmental Forces (Metocean)
- Underwater Robotics

Natalie will also be supporting to produce monthly financial reports, and with the coordination of the BMT/NOAA proposal for SUT US.

As Ms Anna Heller stepped down from the team after a year of work as SUT US’ Journalist, Mrs Rachel Kokel has taken over the role of public relations. Rachel will be essential on reporting experiences of our students, administrators, speakers, and members.

Below is a summary of the key activities held at the SUT US branch for the period of July 2016 to June 2017.

Networking Meetings

Attendance

- 4 August 2016 49
- 8 September 2016 45
- 6 October 2016 41
- 3 November 2016 33
- 1 December 2016 43
- 13 January 2017 (Whisky Tasting) 20
- 2 February 2017 28
- 2 March 2017 26
- 27 April 2017 (PRE-OTC) 53
- 1 June 2017 25
- 13 July 2017 31

Average attendance per networking event: 35 people

Scholarship fundraisers

SUT US’ was not able to organise any fundraiser events during the past year due to low attendance. A skeet shoot event is scheduled for 13 April, 2018.

AGM

SUT US’ Annual General Meeting was held on 1 December 2016. During this meeting, the executive committee introduced the new elected board members:

Houston Branch

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- Kim Faulk, FORUM GEMS
- Andrew Haigh, Gardline Surveys Inc.
- Logan Brant, Geosyntec Consultants, Inc.

Don Schlater, retired, and Jan Van Smirren, BMT Global, remained as Treasurer and Secretary respectively.

OSIG Committee

OSIG is comprised of the following subcommittees: Short Courses, Student/Faculty Research, Mentoring and Innovation, Learning Seminars & Webinars, School Touring, and Communications. 44 active volunteers form OSIG.

OSIG's activities for the 2016/17-year have included learning luncheons, courses, and school touring programs.

Learning Luncheons & Webinars

- **15 September 2016 - Finite Element Analysis for Geophysics and Site Investigation Specialists**
Dr. Jack Templeton, SAGE USA Inc.
Seminar: 29 attendees Webinar: 10 attendees
- **2 March 2017 - Stress, Deformation and Pressure Prediction Near Salt**
Dr. Maria A. Nikolinakou, University of Texas at Austin
Seminar: 17 Webinar: 24 attendees
- **22 June 2017 - Geomagnetic Storms in Marine Magnetometer Data at Low Latitudes**
Brandi Carrier, BOEM
Webinar: 7 attendees
- **11 July 2017 - Reliability-Based Design of Offshore Foundations**
Dr. Farrokh Nadim, NGI Oslo
Webinar: 25 attendees

Short Courses

- **14-16 November 2016 - Introduction to Integrated Marine Site Characterisation**
Presented at Bureau of Safety and Environmental Enforcement (BSEE) in New Orleans. 38 attendees
- **17 February 2017 - Free Course: Frontiers in Underwater Technology**
Texas A&M University at Galveston. 35 attendees

OSIG's School Touring sub-committee is one of the most active groups in the SUT US' branch. Thanks to the dedication and passion of the 38 active volunteers, it was possible to reach 9,483 students from K-12th in the 2016/17 year; this represents 33% more students reached in comparison to the previous year.

- **June - August, 2016 - 10-week program Arch 101, Extreme Machines**
Houston Museum of Natural Sciences (HMNS) Xplorations
400 students reached
- **15 October 2016 - Nautical Archaeology**
HMNS International Archaeology Day
430 students reached
- **24 October 2016 5th Grade – Seeing with Sound**
CSISD Oakwood Intermediate
452 students reached

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Houston Branch

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- **2 October 2016 - 5th Grade – Seeing with Sound**
CSISD Cypress Gover Intermediate
508 students reached
- **31 October 2016 - 12th Grade-Geochemical Engineering**
CFISD Cy-Fair High School
80 students reached
- **29 November 2016 - 6th Grade – Geology Rocks**
CFISD Thornton Middle School
465 students reached
- **10 January 2017 - 8th Grade-Seeing with Sound**
CFISD Opal Hamilton Middle School
513 students reached
- **14 January 2017 - 6th, 7th & 8th Grade Science Fair Judging**
Spring Branch St. Jeromes Middle School
105 students reached
- **17 January 2017 - 6th Grade – Geology Rocks**
CFISD Opal Hamilton Middle School
493 students reached
- **27 January 2017 - 6th Grade – Geology Rocks**
CFISD Salyards Middle School
532 students reached
- **31 January 2017 - 8th Grade – Seeing with sound**
CFISD Salyards Middle School
564 students reached
- **16 February 2017 - 7th & 8th Grade – Design & Destroy, Are we there yet?**
Spring Branch St. Jeromes Middle School
58 students reached
- **18 February 2017 - Educational Outreach Booth**
HMNS Girls Exploring Math & Science
1744 students reached
- **23 February 2017 - 5th & 6th Grade Geology Rocks & Ocean Robots**
Spring Branch St. Jeromes Middle School
49 students reached
- **8 March 2017 - 12th Grade – Seeing with Sound & Opportunities**
CFISD Cy-Creek High School
74 students reached
- **9 March 2017 - 12th Grade – Seeing with Sound & Opportunities**
CFISD Cy-Creek High School
81 students reached
- **April 2nd, 2017 - Robotic Ocean Exploration**
AAPG Teacher Symposium
100 students reached
- **4 April 2017 - 7th Grade – Are We There Yet?**
CFISD Thornton Middle School
461 students reached

Houston Branch *continued...*

- **7 April 2017 - 6th Grade – Geology Rocks**
Katy ISD McDonald Jr. High School
381 students reached
- **13 April 2017 - 12th Grade – Seeing with Sound/Underwater Robotics**
Humble ISD Science Center
20 students reached
- **21 April 2017 - 8th Grade - Seeing with Sound**
Katy ISD McDonald Jr. High School
385 students reached
- **28 April 2017 - 7th Grade – Are We There Yet?**
Katy ISD McDonald Jr. High School
368 students reached
- **5 May 2017 - 2nd Grade – Fossils Natures Time Machines**
CFISD Moore Elementary
190 students reached
- **12 May 2017 - 7th Grade – Are We There Yet?**
CFISD Opal Hamilton Middle School
465 students reached
- **19 May 2017 - 6th Grade – Are We There Yet?**
CFISD Salyards Middle School
565 students reached

There were a series of notable events for the school touring program during the past year of activity such as the participation of the SUT US-OSIG volunteers supporting an outstanding science outreach event “Girls Exploring Math & Sciences Event” at the Houston Museum of Natural Sciences on 18 February 2017; Mr. Andrew Haigh, Chair of the School Touring Program, and Kim Faulk, Chair-Elect of the OSIG Committee, were present at the event.

On 2 April 2017, the school-touring program formed part of the American Association of Petroleum Geologists (AAPG) Teacher Symposium where they presented to 100 middle and high school teachers from Harris County and beyond. It was a great way to reach educators who can then take the knowledge and experience back to classrooms to pass onto students. SUT US -OSIG had the highest presentation feedback score (96/100).

In April, the school-touring program achieved a first engagement with two new school districts, Katy ISD and Humble ISD. In Katy ISD, the group was able to provide three days of presentations to over 1,000 students. This effort was partly supported by BP volunteers. In Humble ISD, a series of presentations were given to 12th grade classes on “Seeing with Sound and Underwater Robotics”. BP professionals have showed continuous interest in supporting the program in the 2017/18 school year.

Furthermore, on 19 May 2017 at CFISD Salyards Middle School, the school-touring volunteers made an important achievement by providing 22 presentations and reaching 565 students in one day.

Among other efforts, the committee is presenting new topics in the upcoming year including “Fossils, natures time machines” for 2nd grade, and “Underwater Robots,” perfect for robotic engineering classes at a middle and high school level.

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Houston Branch

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Upcoming Events for OSIG 2017:

- **7 September 2017** Webinar: Experience in pipe-soil interaction: physical testing and modeling, and design analysis
- **26 September 2017** Learning Luncheon & Webinar: MASW for Offshore Wind Turbine Site Characterisation
- **29 September 2017** Workshop: Integrity and risk assessment of pipelines and SCRs
- **November:** Metocean Awareness
- **November:** Marine Archaeology
- **4-6 December 2017** Short Course: Introduction to Integrated Marine Site Characterisation

SEO Committee

SEO is comprised of 9 members. SEO's activities for the 2016/17 year have included learning luncheons, webinars and its flagship subsea course:

Learning Luncheons & Webinars

- **21 September 2016 - Subsea Wireless Technologies**
Mike Baker, OTM Consulting, Christopher Curran, CJC Enterprises
Seminar: 27 attendees
- **16 February 2017 - Subsea Electric System: Past, Present and Future**
Andrea Rubio, OneSubsea
Seminar: 34 attendees; Webinar: 7 attendees
- **20 April 2017 - Reeled Pipelay in the Gulf of Mexico**
Michael Firmian, Subsea7
Seminar: 23 attendees; Webinar: 7 attendees
- **13 June 2017 - Keys to Maintaining Blockage-Free Subsea Tiebacks**
Melissa Gould, Stress Engineering Services Inc.
Seminar: 15 attendees; Webinar: 4 attendees

Short Courses

- **12 October 2016 - Flow Assurance**
Wood Group; 14 attendees
- **7-10 November 2016 - Subsea Awareness**
Technip, BP, FMC & Oceaneering; 11 attendees
- **26 January 2017 - Subsea Production Controls**
Don Schlater, Retired, Christopher Curran, CJC Enterprises; 6 attendees
- **21 March 2017 - SUT Workshop: Key Elements of Subsea Tiebacks**
Don Schlater, Retired, Christopher Curran, CJC Enterprises; 35 attendees
- **5-8 June 2017 - Subsea Awareness Course**
Technip, BP, FMC & Oceaneering; 6 attendees

The Subsea Awareness Course (SAC) continues to be one of the main income generators for SUT US. The SEO committee and staff members continue to invest efforts to improve the learning experience of this course, and reaching out to more professionals throughout the industry. The leading hosting companies for the course have been Technip, BP America, FMC and Oceaneering.

The staff has been conducting surveys after every course to learn more about the participants' experience and to receive feedback in order to improve the course in

Houston Branch *continued...*

future editions in terms of logistics and presentations material.

Dr. Medina-Cetina, SUT US' Chair & President, closed an important agreement with the Instituto Tecnológico del Petróleo y Energía (ITPE) from Mexico, to secure 15 seats for the upcoming course on 11-15 September 2017. This group in particular, will participate in an extra visit to Texas A&M University to visit research labs and attend risk assessment presentations.

SEO's Upcoming Events include:

- 31 August 2017 - Next Generation of Subsea Vehicles
- 11-14 December 2017 - Subsea Awareness Course

GEF Committee

The Group on Environmental Forces (SUT US-GEF) was officially launched on 10 August 2017. Jan Van Smirren was elected Chair and Rob Smith, Vice Chair. Currently, 19 volunteers form part of this committee.

GEF will be dedicated to advancing the understanding of meteorological-oceanographic investigations and improving the assessment of the corresponding environmental forces required for the proper design of offshore structures.

As part of GEF's first efforts to take the group forward, the committee has organised a two-day workshop by Mexico's Research Consortium for the Gulf of Mexico (CIGoM): "Emerging Data and Models from the Gulf of Mexico. Mexico's Integrated Baseline Development of Atmospheric, Oceanographic, Geological, and Ecological Processes, for Future Natural and Anthropogenic Threats."

The College of Geosciences, the Departments of Ocean and Civil Engineering, the Center for Geospatial Sciences, Applications, and Technology (GEOSAT) and the Stochastic Geomechanics Laboratory (SGL) from TAMU are co-sponsoring this event.

The workshop will take place on 7-8 September, in Houston and College Station respectively: Emerging Data and Models from the Gulf of Mexico.

Underwater Robotics Committee

SUT US' is working to establish a new Underwater Robotics Technical Committee, and it is expected to launch on September of the present year.

John Allen with the support of Natalie Zielinski, are coordinating the activities to launch the committee on September of the present year through an AUV workshop by the Subsea Systems Institute SSI at Rice University.

The University student branches have significant activity with AUV/ROV and Natalie Zielinski will be helping grow this activity.

Education Committee

Four members comprise the Education Committee, chaired by John Allen. This committee is responsible for reviewing SUT US' annual scholarship applications. This year, six students will be awarded \$3,000 USD each in the form of scholarships.

The scholarship recipients will be awarded during the Scholarship Awards Ceremony on 3 November 2017.

Additionally, the committee has been leading efforts to establish other student chapters including Rice University and the University of Texas. It is expected to launch the Rice University student branch in September in a coordinated effort with Fathi Ghobel, faculty sponsor.

Steve Hall, SUT CEO, is looking to support globalisation of student branches in collaboration with the SUT US' branch.

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Houston Branch

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Student Chapters

The SUT-TAMUG student chapter was formally established in January 2017. The SUT US' branch awarded its leadership \$3,000 to support their spring and fall activities for the year. Marissa Malinoski currently chairs this student branch.

Spring Events

- **19 January 2017** - Organisations Night
- **20 February 2017** - Half Day Short Course by SUT US-OSIG
- **21-23 February 2017** - Topsides Platform-Hull Conference
- **21-23 March 2017** - Subsea Tiebacks
- **April 2017** - Cardboard Boat Race

Similarly to Galveston, the SUT-TAMU student chapter was involved in series of activities and events including an ROV competition sponsored by the Subsea Tieback Foundation, and a tailgate event where students had the opportunity to spend time with current members and learn more about the Texas A&M SUT chapter.

Under its new leadership, SUT-TAMU plans to hold another ROV competition and tailgate during the fall semester as well as a series of seminars by companies like LGL-Ecological Research Associates, Seabird, Fototerra- Innovo works, Horizon Marine, and Fugro.

For more information about SUT-TAMU student chapter visit: www.sut-tamu.org

SUT-SES-UH student chapter have also had an active year, organising a series of talks, resume critique event, and an annual cocktail reception.

- Resume Critique - 16 September 2016
- First General Meeting - 21 September 2016
- Second General Meeting - 7 April 2017
- 3rd Annual Cocktail & Networking Reception - 17 May 2017

For more information about SUT-SES-UH student chapter visit: www.subseaeng.org

Financial Report 2015-2016 and Budget 2016-2017

Find attached the financial report for the 2016/17 fiscal year and the proposed Budget for 2017-2018.

www.sut.org/branch/malaysia-kuala-lumpur

Kuala Lumpur Branch

The 2016-2017 year has been a consolidation year for the Kuala Lumpur branch. Our monthly networking evenings have been regularly organised and attended by a wider group of individuals. They are a huge success despite the fact there are fewer subsea projects in the region. However, we are still looking for more local subsea engineers to participate, and the committee will continue its effort to market and promote the networking events.

This year we have managed to organise two of lunch and learn sessions housed in the prestigious Petroleum Club located on the 42nd floor of the Petronas Towers. The first session was held on 18 March 2017 with the topic 'Subsea Pipelines Accessories'. The speakers were Mr Paul Upjohn from ATV Valves who gave us the manufacturer's viewpoint on subsea valves, and Mr Marian Copilet from Oceaneering International who presented the tooling perspective for subsea pipelines intervention. The second session was held on 18 July 2017 with the theme of "Subsea Monitoring Solutions". The speakers were Mr Chee Keong Lee from Kongsberg Maritime who presented the challenges and opportunities of a subsea monitoring modular design and Mr Syahrom Shah from Fugro who introduced us the latest advancement in subsea monitoring systems.

Both sessions were well received by the subsea community and reasonably well attended. We hope that the perceived recovery of the oil and gas market will allow service providers and operators to be more enticed to participate, sponsor these events and allow their employees attend SUT events for knowledge sharing.

With the recovery in the oil and gas market, we hope to bring the opportunity to restart our training and awareness courses on various subsea engineering topics. This is an area where the KL Committee will focus in the future.

We have started to connect with the other Asia Pacific SUT branches as Australia, Singapore and more recently with China. For an organisation that is still in growing mode such as the KL branch, this is a good opportunity to share the technical session themes and potentially presenters to be able to increase the frequency of events.

Understanding that we are today in a difficult market situation, the SUT KL Branch is quite honoured with what was achieved last year. The current SUT organisation is looking to take advantage of the integration of some new committee members. This will help us continue to encourage the participation of the subsea engineers in Kuala Lumpur in knowledge and innovation sharing for the benefit of the individuals and the underwater community.



Chairman: Marin Abelanet

Committee

M Abelanet *Chairman*
 A Das *Vice-Chairman*
 Dr Ir J Ramasamy *Secretary*
 TBA *Treasurer*
 F Alhady
 M Bagnall
 M Copilet
 C Ferguson
 R Gregson
 J Lim
 R Marjohan
 S Natarajan
 D Sidhu
 A Zain

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London and South of England Branch

www.sut.org/branch/london



Chairman: Brian Jones

Committee

- B Jones *Chairman*
- K Broughton *Vice Chairman*
- G Taylor *Hon Treasurer*
- R Binks *Hon Treasurer*
- C Ashcroft
- D Baker
- D Brown
- M Calverley
- C Cross
- B Green
- P Hayward
- S Hems
- T Jee
- I Knight
- A Low
- Dr G Lyons
- P Metcalf
- U O'Donnell
- T Walters

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The London and South East Branch has had a good year holding a number of meetings and a successful summer reception.

The concept of the Branch is to promote co-ordination between individuals, disciplines and organisations from the Energy (Oil, Gas & Wind), Legal, Insurance and Marine sectors. This is quite unique within the Society as it brings together parties from the international markets who have significant interest in underwater technology but normally have little contact with industry.

The committee membership is well represented by members from the legal and insurance sectors who bring with them their own perspective and ideas.

A 'Young Professionals Group' has been established led by very positive individuals, several events have been held including 'Women in Marine', Careers Day etc plus social events.

The Branch held a BBQ in June on the HQS Wellington on the Thames with a range of members and guests. The weather was balmy and everyone had a most pleasant evening.

Events are held both in the evening and lunchtime. The lunchtime events are of interest in that personnel in the City engaged in legal and insurance prefer that arrangement.

The Branch holds 'Lunch & Learn Events' as this best suits the requirements of the City sector including:

- Douglas Westwood – outlook
- Recovery of the Costa Concordia
- Decommissioning by the OGA
- Offshore Floating windfarms
- The Evening Meetings included
- TechnipFMC
- ATV HPHT
- Cranfield students
- Infield Forecast

Future events which are being considered include Maritime EOD, ROVs by SeaEye, decommissioning, moorings, Arctic, pipelines and AUV gliders.

www.sut.org/branch/ north-of-england

North of England Branch

The North of England Branch meets on a bi-monthly basis, and has organised five technical sessions, seven planning sessions and a Student Event over the period. The technical sessions have been well supported with average attendance being 40 knowledgeable students and subsea practitioners. The audiences have been, without exception, enthusiastic in their questions and comments – a testament to the breadth and depth of experience and enthusiasm residing in the North of England.

The branch continues to be hosted by Newcastle University's School of Marine Science and Technology, their recent refurbishment has added to the fantastic facilities they offer. Being based within the University, we continue to be well supported with student attendance.

Committee

The committee of the North of England Branch has diminished somewhat over the period, after all we are not immune to the fallout from the global oil price reduction. The current, enthusiastic, members of the committee are as follows and represent a cross section of the local subsea businesses and Newcastle University.

Activities

Evening Meetings

In September 2016, 34 people attended an evening meeting hosted by the School of Marine Science at Newcastle University. The theme of the meeting was Subsea Trenching and the technical talks were ably chaired by Steve Pace, Senior GIS Engineer from DeepOcean;

The topic 'Latest development in subsea trenching vehicle Health, Usage and Monitoring' was delivered by Stephen Wilson, Innovation Manager, SMD. Stephen introduced the latest in SMD's digital strategy – a system to monitor the overall performance of an asset to maximise both its lifetime productivity and economic value to the asset owner. Stephen was unable to attend the meeting in person, however through the wonders of Skype, the Branch broke new ground in achieving a successful virtual presence.

Sam Franklin, GIS Manager for Lloyd's Register, presented 'A case study of enhanced trenching operational oversight through the delivery of an innovative real-time, project management solution'. This represented a response to the challenge set 18 months prior – to make live trenching data available and easy to access to the project team onshore and to be able to map the asset position on the seabed in real time.

A detailed meeting report for the evening can be found on the SUT website, courtesy of Thai Truong, Engineer from PDL Solutions (Europe) Ltd.

In November 2016, Dr Andrew Pople, in his final official capacity as Chairman for the North of England branch outlined the financial position of the branch during our AGM. The evening proceeded through the following three topics;

The technical talk of the evening was kindly proved by Proserv; Dave Gibson, a Technical Authority in friction welding for the company and Stuart Harvey, the Global Product Leader for friction welding gave an overview of their welding system with supporting case studies. The talk spanned multiple sectors of interest to the Branch, being applicable to renewables (wind farm piles) and oil & gas recovery (subsea pipelines).

We were joined by Dr Bob Allwood, Chief Executive of the SUT, again in one of his final activities for the Society. Dr Allwood provided his 'Reflections on 50 years of the SUT'.

Elizabeth Waterman, Senior Engineer from PDL Solutions (Europe) Ltd, provided an update on the activities of the SUT+ group. The evening, again hosted by Newcastle University, was attended by 50 people.

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Chairman: Michael Williams

Committee

M Williams *Chairman*
M Bingham *Vice Chairman*
Dr J Baker *Hon Secretary*
Dr I Frazer *Treasurer*
P Allen
Dr S Benson
J Greenwood
Dr A Pople
A Roberts
E Waterman
M Zwanenberg

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North of England Branch

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In January 2017, Elizabeth Waterman chaired a meeting at Newcastle University titled 'The Design & Analysis Challenges for Advanced Service Valves', which was attended by 26 people. We had talks from a number of speakers as follows:

Lee Brimer, Senior Engineer, PDL Solutions (Europe) Ltd discussed 'Advanced Engineering Analysis as a Valve Design Verification Tool'.

Malcolm Hay, Project Engineer, BEL Valves Ltd gave an overview into 'Design Challenges and Verification of Valves to Keep Pace with Oil Field Development Rate'

James Brierley, Graduate Project Engineer, BEL Valves Ltd provided his outlook on 'Expected Challenges and Design Verification of HP/HT Valves Developed for Subsea Service'.

A meeting report for the evening can be found on the SUT website, courtesy of Eugenie Warden and Nick Brown, Engineers from PDL Solutions (Europe) Ltd.

In March 2017 we were educated and entertained in equal proportions on the subject of 'Challenges in the Design of Large Marine Pipelay Structures & it has to last for 25 years!'

Michael van Zwanenberg chaired the evening where we heard from;

- Martin Bingham – Engineering Director, IHC Engineering Business Ltd
- James Hoy – Senior Engineer, IHC Engineering Business Ltd

Martin and James provided a comprehensive background on the underlying need for pipelay vessels, the types of lay systems that can be adopted and the structural assessment undertaken to validate these structures under offshore loads.

50 people were packed into the Newcastle University lecture hall and made good use of the opportunity to pose probing questions to the IHC team. A meeting report for the evening can be found on the SUT website, courtesy of Michael van Zwanenberg, Principal Engineer from SMD Curvetech.

Our May 2017 evening meeting was entitled: 'Marine Renewables, Challenges and Opportunities' and was chaired by Michael van Zwanenberg. The talks were as follows:

- 'Opportunities & Challenges of Wave Power: If I could tell you one thing' by Beth Dickens, (Senior Engineer, Quocean)
- 'Anchoring – Getting the foundations right!' by Andrew Hunt (Engineering Manager, Sustainable Marine Energy)

Beth provided an insightful talk on the subject of the Pelamis wave energy device and gave us a number of pieces of advice – (i) develop your strategy early, (ii) assume you don't really know your load data, (iii) hydraulics leak, monitor them and (iv) at the beginning you don't know, so you can be optimistic!

Andrew's talk related the technical solution to the problem of anchoring the 'PLAT-O device' which is a subsea turbine that was designed to operate in "the Goldilocks zone" - a sufficient height off the sea bed for the current to be significant but below the unpredictable surface waves. The solution avoided the reliance upon a costly (in monetary and environmental terms) gravity base and instead relied upon an old piece of technology but with a modern twist – the screw anchor pile. Andrew and his team developed a pile design that incorporated a tapering shaft – thus providing a solution to effectively resist uplift whilst maintaining sufficient shear capacity.

44 people attended this event, which was held at Newcastle University. A meeting report for the evening can be found on the SUT website, courtesy of Thomas Pallister, Engineer from PDL Solutions (Europe) Ltd.

North of England Branch *continued...*

SUT+

Our SUT+ committee continues to go from strength to strength, under the watchful eye of Elizabeth Waterman, having successfully delivered the September 2016 Schools Event which was held at the Great North Museum (Hancock). The event was titled "Engineering under the waves" and gave local school and college students from Dame Allen's, the Royal Grammar School and St. Cuthbert's High School among many others, the opportunity to engage with our subsea community. The event would not have been viable without the help of five local companies (TDR Training, Technip, SMD, GE Oil & Gas, Royal IHC) – their sponsorship was gratefully received.

After the success of last year, the group will be repeating the event on the 19 October at Northumbria University. We are again indebted to five local companies for their sponsorship (TechnipFMC, SMD, PDL and Royal IHC) as well as the support provided by our branch sponsors.

Our branch SUT Plus committee have had a busy year; they have continued their knowledge transfer site visits by holding company visits to Royal IHC Port of Blyth, GE Oil and Gas, PDL, GE PII and BEL Valves. In addition, they have had social activities such as 'high ropes' and meeting for drinks in Newcastle. They are always looking for new members, so please get in touch if you would be interested.

Finances

The North of England Branch finances are reported through the Aberdeen Branch P&L account. Our activities have been funded by membership fees and sponsorship received from speakers and local companies throughout the year.

Recognising the effect of the current economic climate on a number of the companies and individuals involved in our local subsea community, we have continued our initiatives to reduce costs whilst still meeting the objectives of the branch.

With this climate in mind, the contribution from our local sponsors is particularly acknowledged; Baker Hughes, a GE Company, DeepOcean, IHC Engineering Business, MODUS Seabed Intervention, Newcastle University, Osbit, PDL Solutions, Soil Machine Dynamics and TechnipFMC.

Future Plans

We will continue to have technical meetings bi-monthly over the next year with a recess over the summer, when we will have a committee planning meeting but no evening event. The focus of the committee in the coming months will be to attract additional members to the committee – we have a fantastic pool of exciting companies and personnel in the North of England and wish to gain maximum benefit for the Society from that pool.

In the short term, our September 2017 meeting is titled: "Subsea Infrastructure; Introduction & Virtualisation" and the subject of the following meeting will be the recovery of the Costa Concordia.

Our October Schools Event is sure to build upon the good work initiated by our SUT+ committee in 2016, we also look forward to seeing the SUT+ develop their group in the North of England over the coming year.

Norway Branch

www.sut.org/branch/norway



Chairman: Nils Vågen

Committee
N Vågen *Chairman*
V Fondevik
O Hagesaether
GA Johansen
RD Skre
I Westervik
Manager
T Eriksen

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The Norwegian Branch of SUT has an ongoing evaluation of the situation in the oil and gas market. The SUT/SAC course has suffered as the companies have been cutting costs. Training courses have been reduced to a minimum. The investment rate in the Norwegian Oil and Gas industry was down to its lowest in 2016. The 2017 will also be though, but we believe we will see an upturn in 2018. To meet the challenges with a difficult market and cancellation of the SUT/SAC courses, the board has engaged Tom Eriksen as a new Manager of SUT Norway. His main task is to follow up the SUT/SAC course.

The plan was to have a Subsea Awareness Course (SAC) in the Autumn of 2017. We have reduced participation fee, but still there was too few attendees, and we had to cancel also this course. The cancellation of SAC courses the last years has been the main concern of the SUT Norway. The courses represent main income for the Norway Branch, and we have reduced costs in our organisation to a minimum.

In earlier years the courses were extremely popular, and we strongly believe it must be possible get the courses up and running again

SUT Norway also attended Underwater Technology Conference in Bergen in the middle of June.

We also like to welcome our new board member Ingmar Westervik from FMCTechnip.

The Norwegian Branch of SUT was established in 2009. SUT Norway is set up to provide a focal point for members of the SUT in Norway. The Programme for the Subsea Awareness Courses are compiled by the Norwegian Branch committee and are designed to fulfil the requirements of the Society’s diverse membership.

**www.sut.org/branch/
singapore/**

Singapore Branch

As the year 2016/17 and our third year as the Singapore branch draws to a close, it is safe to say that it has been a difficult year for the Singapore section. Sadly, as a result of the depressed market conditions a number of the founding members have moved away from Singapore resulting in a bit of a loss in momentum for the section.

After making some excellent progress over the first couple of years where we settled on a regular venue for our technical and our social events and establishing a strong member following along with setting our sights on an increased number of technical / social events it has been difficult to translate the initial enthusiasm into making things a reality.

With the continued challenges experienced in the oil and gas market It has been challenging for the remaining committee members to juggle the daily pressures of their own work commitments with the voluntary commitments to the SUT branch, sadly despite adding new committee members it has been difficult to get more than a small nucleus of those together at any one time.

As such the initial plans to host an increased number of technical sessions has sadly not materialised in 2016.

On a plus note, we have been able to replicate our 2016 performance and have hosted three technical sessions at the time of writing.

Our final event for 2017 is planned as a social evening to coincide with IMCA annual seminar which will be in Singapore from the 27-30 November.



Chairman: Derek Donaldson

Committee

D Donaldson *Chairman*
M Colbridge *Vice Chairman*
A Gleeson *Treasurer*
C Campbell *Secretary*
H Gu
A Horsfield
CK Lee
W Lee
X Liu
G Rawlinson
J Vaughan
R Zwinkels

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Education and Training

Education and Training is a key part of SUT's role and the primary justification in the eyes of the Charity Commission for our continued Charitable Status. As such our engagement in a wide range of education and outreach activities both through Headquarters and our branches and technical interest groups is important and provides one of the most visible aspects of SUT to the outside world.

During 2017 the role of Chair transitioned from Stephen Hall, who is now SUT's Chief Executive, to Sue John – an experienced educator who is also a personal member of SUT and brings extensive knowledge to the role. New members of the Committee include Laila Sadler, a professional communicator formerly of the Scottish Association for Marine Science who also has strong links to the Naval community, and Dr Fiona Crouch, chair of the European Marine Science Educator's Association. The Committee also now has members from our international network, with John Allen providing detailed input from our Houston branch.

Steve Hall writes:

In a period of transition for SUT education and outreach activities had fallen largely to the Branches, with Headquarters staff primarily focussing on outreach through Social Media and the sales of our book '*Can a Lobster be an Archaeologist?*' which was available from headquarters, some international branches and via Amazon to UK customers. Our @SUT_news Twitter feed steadily gained followers through the year, the Facebook presence was streamlined and effort was put into joining up social media feeds from the global SUT 'family', including 'SUT Plus' for younger members in the UK, SUT YES! in Australia, and the network of Student Chapters at Texas A&M, Houston University and the new chapter that launched at Rice University.

Aberdeen branch again provided a very well-attended Schools event in time for Christmas 2016, and our Houston USA branch engaged with a large number of schools in Texas reaching hundreds of students throughout the year. Houston's vigorous Student Chapters are also engaged in outreach to the student community, and have a high profile in their region. Perth Branch have a Committee member who has a schools liaison remit, but our China, Singapore & Malaysia branches do not currently have active education and outreach programmes – something to be addressed in future.

Training courses suffered from the downturn in the oil and gas industry, with a substantial reduction in demand for our flagship 'Subsea Awareness Course' that had a significant impact on the income to the Society. The SAC course has been brought up to date, and has been redesigned so that it can be offered in a variety of configurations to suit different audiences. This includes a shorter version designed for delegates who work from land-based offices rather than offshore, and versions designed for the insurance, legal and financial professions in the City of London and elsewhere.

For the future, SUT needs to develop new courses that reflect areas of growth in our sector such as sustainable deep ocean mining and marine robotic systems, we hope to be able to roll these out in coming years.

Sue John adds:

I am the new chair of the Education and Training Committee, and have the daunting task of following Steve in this role and I hope that my past experience will do it justice. I have been involved with the Society for Underwater Technology for a number of years either



Chairman: Sue John

Committee

S John *Chairman*
 S Hall *Secretary*
 E Boddy *Clerk*
 Prof L Boswell
 F Crouch
 L Davis-Smith
 JAT Grant
 R Harrington
 D Havard
 Prof S Huang
 G Jackson
 E Kinghan
 Dr B MacKenzie
 M Palmer
 Dr J Potts
 D Prosser
 Dr D Purdie
 L Sadler
 P Smith

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Education and Training

continued...

through hosting Christmas lectures and through the CREST awards scheme for schools.

My academic background is in earth and planetary sciences and I have spent much of my career working in schools and universities supporting and encouraging pupils into taking sciences further than GCSE levels. I fully support the Society's work to highlight the importance of the technology that our members use every day in below the ocean's surface.

However, my most important role was recruiting and supporting volunteers from industry as STEM (Science, Technology, Engineering and Mathematics) Ambassadors. I know the hard work that members of this Society do in its name. It is one of my aims to highlight the work that our members do outside of the "9-5" routine.

The other main aim is to deliver our lecture series. This is proving to be more difficult than it used to be, with significant challenges in attracting schools to attend external events. There are a number of reasons for this, including: a) the secondary school timetable is so packed so a SUT lecture has to be worthwhile for to bring a class or year group out of school and b) we have no money to pay teacher cover costs, and often too the cost of hiring venues. Unfortunately, universities are beginning to charge for the hire of lecture theatres, but fortunately we have friends at Institutes and companies across the UK who are willing to offer suitable venues at low or no cost.

I am planning to run a lecture series during Science Week in March 2018 when secondary schools in particular designate 1, 2 or 3 days for National Science Week activities, so I am asking our members if their organisation, university or company would either sponsor, or provide space for a SUT lecture during Science Week. I am not expecting them to do it alone, as I and our Education Committee members will provide as much input as we can.

Educational Support Fund Management

The SUT’s Education Support Fund has supported almost 300 undergraduate and postgraduate students since it was established in 1990. Initially only available to UK-based students, applications are now accepted from students studying at bona-fide educational institutions across the world, though the majority tend to come from our well-established links with a core group of engineering, oceanographic and technology universities in England, Wales and Scotland, and the current group are all studying within the UK.

The quality of the students remains very high with most of the undergraduates leaving with a 1st or Upper Second Class honours degree, and as far as our follow up investigations are able to ascertain all of our students remain within the ocean science, technology and engineering sector. Increasingly we call upon them to provide the public face of SUT at events such as lectures for schools, and they provide a pool of individuals favourably predisposed to SUT as they work through their careers across the world.

The ESF is managed via the Education and Training committee, an international SUT committee now chaired by Sue John. Applications for awards are assessed by a panel comprising the SUT Chief Executive, a Member of Council, and members of the Education Committee. The assessment criteria are weighted in such a way that students studying subsea engineering and technology have the highest chance of success, but we often fund outstanding students from associated marine science areas who have shown an intention to work within industry upon graduation.

The number of students we are able to support depends upon the level of income secured by SUT from year to year. With the ongoing downturn in our financial support from the offshore energy sector it has only been possible to maintain the existing cohort of students, with just two new undergraduates added from the 2017 pool of applicants, and none were added in 2016. As finances begin to recover, we intend to ramp-up numbers again to former levels, and to review the way in which students associated with our overseas branches are able to access the ESF to ensure fair allocation of resource.

For the 2017-2018 Academic year the continuing students are studying Mechanical Engineering at the University of Bristol, Oceanography at Southampton, and Marine Science at the Scottish Association of Marine Science /University of Highlands and Islands.

The two new students are studying Marine Biology at the University of Liverpool and Marine Technology at the University of Plymouth.

Undergraduates receive £2000 per academic year, postgraduates receive £4000.

From a gender balance perspective, we note that four out of the current group of five students are female.

Summary of Undergraduates graduating in 2017		
SAMS	Marine Science and Arctic Studies	1st
Liverpool	Marine Biology	2:2
UEA	Meteorology and Oceanology (MSci)	1st
Southampton	Geology with Physical Geography	1st
Liverpool	Marine Biology and Oceanography	1st
Summary of Undergraduates continuing in 2017-2018		
Southampton	Oceanography	
Bristol	Mechanical Engineering	
SAMS	Marine Science	

International



Chairman: Dr David Kirkley

Committee

- Dr DW Kirkley *Chairman*
- S Hall *Secretary*
- L Ayling
- R Binks
- J Cattanach
- C Dudgeon
- B Green
- B Jones
- D Jordan
- Dr WD Loth
- G Lyons
- P Metcalf
- J Roberts
- M Witton

The International Committee has not been very active during the last twelve months. In large measure this has been due to the financial head-wind that the Society has faced. Cost-cutting and consolidation has been main focus and ideas for further growth internationally or new initiatives were put on hold. Activity was also inhibited by the impending retirement of Dr. Bob Allwood as Chief Executive and the appointment of his successor. As described elsewhere, the consolidation stage has largely been completed and Steve Hall took up his position as the new Chief Executive in April. Since then, we have seen that opportunities exist for international expansion by way of new branch formation, or pre-branch activity. Largely, this is because there are members in areas not yet served by a branch that are enthusiastic about setting up a local SUT activity. Since the Society can no longer afford to employ a separate Business Development Executive, the Chief Executive and other members of the Committee will take opportunities to encourage initiatives, including visits to these locations and existing SUT branches when travel is justified by other duties such as chairing conference sessions, participating in exhibitions, or other business responsibilities.

Areas where new SUT activity could commence and discussion has taken place are Atlantic Canada, South Africa, and possibly Nigeria. In the latter case, however, previous experience merits caution. Also, although local SUT activity depends critically on the motivation of key individuals, it is thought that there needs to be an adequate nucleus of signed-up SUT members before a new branch should be sanctioned. We now look forward to the year ahead with a more positive view on what might be achieved.

Policy Advisory

The SUT Policy Advisory Committee meets on an ad-hoc basis to respond, as required, to new situations or consultation opportunities that can benefit from input by SUT's wide network of expert members. For example in the past we provided input to the UK government's inquiries into 'observing the ocean' – which led to SUT staff providing oral & written testimony to the Parliamentary Science & Technology Committee. We also took part in the development of the Marine & Coastal Access Act and Marine (Scotland) Act and their associated marine spatial planning and licensing systems, and we have provided policy advice regarding the use of marine autonomous systems, and input to the technical and economic viability of the proposals to construct a tidal energy lagoon in Swansea Bay.

SUT also provided some input to the development of industry guidelines on the use of autonomous surface vehicles, based on our long involvement in the development and use of sub-surface systems.

As SUT grows overseas we intend to provide policy advice on request and on a proactive basis to administrations and industry groups in territories that can benefit from the knowledge we have amassed over the last 51 years, helping establish SUT as a respected independent expert voice in global marine science policy.

This will become increasingly important as new marine technologies facilitate activities such as deep ocean mining in areas beyond national jurisdiction, and other areas of growth in the future international 'blue economy'.

SUT also has Observer Status at UNESCO's Intergovernmental Oceanographic Commission, enabling us to provide advice on behalf of our Members and industry in support of the UN's Sustainable Development Goals, Knowledge Exchange and Capacity Development. Our new CEO has extensive experience in global ocean policy including a period as Vice Chair of the IOC, and we hope to benefit from his background and network of contacts in growing this important and influential role for our Learned Society.



Chairman: Steve Hall

Committee

S Hall *Chairman*

R Barrett

DA Brookes

ST Culshaw

Dr R Gatliff

S Hall

Dr DW Kirkley

Dr WD Loth

Lt Cdr RJ Rogers

Publications



Chairman: Dr Martin Sayer

Committee

Dr MDJ Sayer *Chairman*
 E Azzopardi *Secretary*
 L Ayling
 E Boddy
 M Broadbent
 Prof G Griffiths
 S Hall
 Dr R Rayner

The Publications Committee meets approximately twice a year to consider and direct the publications originating from, or supported by, the Society. These include the publication of the academic journal, *Underwater Technology*; the Society's magazine, *UT2* and the online version *UT3*; books or conference proceedings originating from the Society's special interest groups; and the Society's website: www.sut.org.uk.

The 2016-17 reporting period saw a significant development for the Society's academic journal. As a result of demonstrating consistent publication, and the steady increase in the number of citations our published articles are receiving, the journal was accepted into the Thomson Reuters / Clarivate Analytics Emerging Sources Citation Index (ESCI) on 7th April 2017. This means that the journal is now under formal consideration for regaining its Impact Factor and, after two years of coverage in ESCI, will be evaluated for re-entry into the flagship indexes, including the Science Citation Index Expanded (SCIE).

Journals indexed in the ESCI do not receive Impact Factors. However, the citations from the ESCI are now included in the citation counts for the Journal Citation Reports and, therefore, contribute to the Impact Factors of other journals. The Journal will now be discoverable via the Web of Science with an identical indexing process to any other indexed journal. This includes full citation counts and author information. Therefore, because *Underwater Technology* articles are now indexed in ESCI, they will contribute to an author's H-Index calculation and be included in any analyses conducted on Web of Science data or related products such as InCites. This means that, from this year onwards, publishing in *Underwater Technology* carries all the benefits to authors that would be expected in an official Impact Factor journal.

At this time, the Society for Underwater Technology is continuing to make the journal completely and instantly open access with no article publication charges. The Journal is hosted in electronic format by Ingenta Connect (www.ingentaconnect.com/content/sut/unwt), it is available in e-reader format (issuu.com/sut7), and all articles are provided with DOI (digital object identifier) numbers. The Journal is now licensed under a Creative Commons Attribution 4.0 International License (CC-BY). As such the Society for Underwater Technology encourages authors to make their full articles freely available as soon as they are published, both online on their personal and/or institutional websites and on research social media sites such as, for example, ResearchGate.

As part of revising some elements of the Journal for its ESCI assessment, there has also been a reassessment of the structure of its Editorial Board. This is being enlarged to incorporate representation of a broader representation of the disciplines published by the Journal in recent years. The membership of the revised Editorial Board should be published in the November 2017 issue of the journal.

Since becoming open access in 2014, and with no author charges, the rate of citing articles in *Underwater Technology* has increased markedly. The Journal's CiteScore for 2016 was 1.11 compared with scores of 0.58 and 0.22 for the years 2015 and 2014, respectively. This ranks the journal in the 64th percentile in the Scopus "Ocean Engineering" category (ranked number 29 out of 82 journals). Likewise, the 2016 ScimagoJR two-year citations per document rating (similar to the Thomson-Reuters Impact Factor) has increased to 1.529, compared to 0.964 and 0.400 for years 2015 and 2014, respectively.

2017 included the quinquennial publication of the proceedings of the conference of the Offshore Site Investigation and Geotechnics (OSIG) special interest group. Publishing these proceedings is always a significant undertaking for the SUT and for this year's publication there were over 140 papers finally accepted. Great praise must go to Emily

Publications

continued...

Boddy, Publications Officer, who organised and managed the peer-review of all the submissions as well as type-setting both volumes. For this year's OSIG, the proceedings are also being published online and with open access on the SUT's Ingenta Connect site. This will ensure a much wider readership but will also generate DOI numbers for each paper; this affords academic value to these publications. Past SUT conference proceedings continue to be published online at www.onepetro.org.

The SUT magazine *UT2*, which is a joint venture between the SUT and Dr John Howes, was published six times in 2016-17. The magazine continues to receive good feedback from the membership; *UT3* is the online version of *UT*².

The Publications Committee is also acting on behalf of the SUT as the dissemination partner for the EU-funded BRIDGES project (Bringing together Research and Industry for the Development of Glider Environmental Services). This project is funded for four years; more information can be found at: www.bridges-h2020.eu/

Our children's book 'Can a Lobster be an Archaeologist?' continues to sell well via the SUT website and Amazon.co.uk and always generates enthusiasm at events and conferences. Plans to use the book's content for other projects are in the pipeline, including a poster presentation at the 2017 EMSEA conference in Malta, a colouring book for younger readers, talks at the 2018 National Science week, a series of Youtube videos and eventually a follow-on 'volume two' publication.

The Publications Committee continues to receive excellent, enthusiastic and highly organised support from the SUT. Elaine Azzopardi provides editorial assistance for the Journal while based at the Scottish Association for Marine Science in Oban. Emily Boddy continues as Publications Officer and works on all other SUT publications plus the website.

Diving and Manned Submersibles



Chairman: Dr John Bevan

Committee

- Dr J Bevan *Chairman*
- S Hall *Secretary*
- E Boddy *Clerk*
- G Anthony
- Cdr A Bax
- K Bazeley
- R Bull
- M Caney
- T Caton
- B Cole
- M Dunkley
- P Evans
- P Faulding
- Dr O Firth
- A James
- G Laden
- S Marine
- A Marshall
- G Momber
- R Pirie
- Dr MDJ Sayer
- M Seares
- DR Shiers
- J Tetlow

Our committee met as usual three times during the year, 14 September 2016, 25 January 2017 and 17 May 2017. We transferred the venue of our meetings from the security of The Old Bank of England to a challenging, floating facility on HQS *Wellington* on the Thames.

It has been reassuring to see the diving industry weathering the trials and tribulations of a stubbornly low oil price throughout the year. Other sectors appear to be fairing reasonably well. Media diving continues to prosper mainly through the busy commitments at the Underwater Stage at Pinewood studios. The Human Submarine Races held at QinetiQ in Haslar, Gosport were another international success story.

Significant issues considered by the committee have included topics as varied as decommissioning operations of offshore North Sea structures, the updating of the ACOP guidelines by the HSE, concern over the possible closure of hyperbaric treatment chambers as the NHS cuts costs, the introduction of a new ISO standard on annual cylinder inspections, a new British Standard for demand regulators used deeper than 50m and the reduction of police diving units around the country.

Special presentations to the committee were provided by Peter Faulding of Specialist Group International on the subject of search and forensic diving and Operation Tadpole, the anti-sabotage diving operations in Gibraltar during WW2 by John Bevan.

Ms Judith Tetlow is replacing Chris Sherman as Chief Inspector of Diving HSE on the committee. Ms Taira Caton is likewise replacing Roger O’Kane as ADC CEO on the committee.

Environmental Forces

The SUT Group on Environmental Forces held two events during the year 2016/7, both in collaboration with external research groups. The first event (109th Meeting), held in London during January, was in conjunction with the EPSRC project meeting on ‘Fully Nonlinear Simulation of Two Vessels in Launch and Recovery’. The meeting heard presentations relating to multiphase modelling with an overset mesh, hydrodynamic interactions of multiple vessels in a known wave field and on progress in the development of hybrid models. Speakers were Zhihua Ma, Pedro Martinez, Nan Xie, Shiqiang Yan and Jinghua Wang from Manchester Metropolitan and City (London) Universities.

The second event of the year (110th Meeting), held at the University of Manchester during May, was in conjunction with the EPSRC funded project on New Simulation Methods for Multi-Scale Two-Phase Wave-Structure Interaction. The study involves the modelling of wave hydrodynamics and wave-body interaction using a combination of finite element modelling (QALE) and smoothed particle hydrodynamics (QALE-SPM) with particular focus on the problem of wave slam on decks. Presentations were made by Benedict Rogers, Georgios Fourtakas, Steven Lind and Shiqiang Yang from the University of Manchester and City University.

As in previous years, SUTGEF continues to provide a forum for vigorous debate between members and guests from academia and industry. Meetings are well attended and give young graduate and undergraduate scientists and engineers a valuable introduction to the work of SUT.



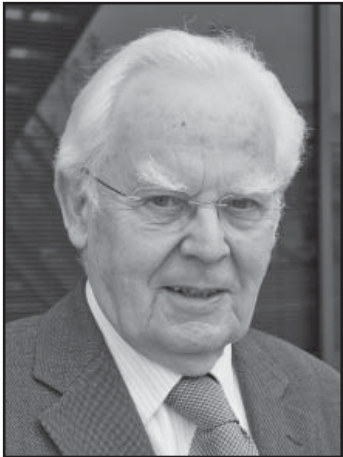
Chairman: Prof Qingwei Ma

Committee

- Prof QW Ma *Chairman*
AN Moore *Secretary*
Prof T Adcock
R Addlesee
Dr R Ahilan
Prof N Barltrop
Dr WJD Bateman
Prof PW Bearman
F Beiboer
Dr M Birkinshaw
Dr E Buldakov
D Carter
Prof DM Causon
Prof JR Chaplin
Dr M Christou
RL Davies
Dr KR Drake
Prof R Eatock Taylor
AJ Fyfe
Dr R Gibson

Prof D Greaves	I Leggett	Dr R Standing	A Watson
G Grewal	Dr A Raby	Prof P Stansby	W Tan
S Hall	Dr R Sheikh	Prof C Swan	R Webb
Dr J Hamilton	Dr E Spentza	Prof P Taylor	Dr G Weymouth
Dr G Jeans	Dr J Spinneken	Dr P Tromans	Dr J Zang
M Johnson	R Sproson	T van den Bremer	

Marine Renewable Energies



Chairman: Prof John Sharp

Committee

- Prof J Sharp *Chairman*
- S Hall *Secretary*
- E Boddy *Clerk*
- K Buckle
- S Cheeseman
- J Colby
- P Davies
- D Flood
- P Fraenkel
- INL Gallett
- D Goncalves Collins
- J Grant
- J Griffiths
- J Hulm
- D Kerr
- M Lumsden
- Dr B MacKenzie
- Dr S Merry
- N Morgan
- M Murphy
- N Murphy
- Dr R Norman

The committee has held its usual four meetings during the past year with presentations from Charles Reynard (Eversheds, Financing the Renewables Sector), Peter Fraenkel (Bigger Tidal Machines), Dujon Goncalves-Collins (Renewable UK activities), John Sharp (Review of European and Canadian tidal sites). As a regular item the committee has reviewed recent conferences relating to marine renewable energy, both in the UK and abroad. Several participants outside the UK provided either written input to the Committee or participated by telecom; this is welcome given the committee’s aim to engage more fully with the several international developments in the marine renewables area.

The annual plan of action was reviewed and updated at the January meeting. Some topics were highlighted which had not been fully addressed in the past year and the committee agreed to focus on these in the coming year.

The annual All Energy Conference was held in Glasgow in May; SUT is the learned Society which is formally linked to this event. The committee assisted with the selection of the proposed contributions to the sessions of the wave and tidal programme and members of the Committee chaired relevant sessions at the conference.

The Lennard-Senior award, initiated in 2011, was given in 2017 to Tim Cornelius (CEO of Atlantis Resources Ltd) in recognition of his leadership of the Meygen tidal energy project in the Pentland Firth. Committee members nominated candidates for the award and then voted on those put forward.

J Patten MBE	D Reid	R Sykes
G Plant	T Sawyer	S Wilson
A Reddon	Dr M Stanley	M Wright

Ocean Resources

Once again, this Committee did not meet during the reporting period July 2016 to June 2017. However, it is recognised that the ocean’s resources (other than offshore hydrocarbons and renewables) continue to become increasingly important to our well-being and ultimately perhaps the sustainability of life. It is planned to re-convene the meeting of this important Committee in the very near future.

The most recent review exercise undertaken by this Committee had seen the following subjects being the focus of its work in the future:

- Methane hydrates
- Mariculture
- Fishing
- Marine genetic resources
- Marine aggregates
- Marine archaeology/wrecks
- Law of the Sea
- Marine policy
- International Ocean Drilling Programme
- International Maritime Organisation
- OSPAR
- International Hydrographic Organisation
- Undersea mining

Committee

TBA *Chairman*
S Hall *Secretary*
Dr N Auchterlonie
C Carleton MBE
Prof D Cronan
J Hind
Dr Q Huggett
Dr P Jackson
Dr R Kirby
N Langhorne
Dr B MacKenzie
N Macpherson
G Plant
J Riby
S Shastri
Dr PA Verlaan
Dr K Whitelaw
J Wolfe

Offshore Site Investigation and Geotechnics



Chairman: Andy Barwise

Committee

- A Barwise *Chairman*
- G Wood *Secretary*
- P Allan
- J Adams
- J Arthur
- P Baggailey
- M Baker
- A Benson
- E Boddy
- M Brown
- N Carey
- T Carrington
- S Cashmore
- E Cauquil
- W Cleverly
- M Cook
- C Cotterill
- K Dalton
- M Finch
- I Gallett
- K Games
- S Gooding
- S Hall
- A Harrison
- R Hobbs

The past twelve months have been very busy and successful for the OSIG committee which has worked very hard to maintain the momentum of previous years. The main focus for the OSIG committee in 2017 has been the 8th International Conference titled “Smarter Solutions for Future Offshore Developments”. This event is always very demanding upon resources from both the committee and the SUT. This was a very successful event with approximately 400 delegates. This could not have been possible without a great deal of support from the committee and SUT. This is considered the OSIG flagship event that is hosted every five years. The venues have already been booked for 2022. The other highlights of the past year are summarised below.

Short courses for industry and students

In June 2017, a one-day masters course was held at Imperial College, London, for the eight successive year. The course was attended by approximately 50 MSc students from Imperial College and other institutions. The committee would like to thank Richard Jardine of Imperial College London and Tim Carrington of Fugro for organising the event. The event has become a regular event for the committee and fulfils one of our key aims of attracting students into industry.

A very successful Geoforum was hosting in Bristol with a focus on renewables in the South West, over 100 delegates attended this event.

Guidance notes and standards

The final version of, ‘Guidance notes for Geophysical and Geotechnical Ground Investigations for Offshore Renewable Energy Developments’ that was published in 2014 and is now available for download from the SUT website and is becoming an important reference document in the growing offshore renewables market sector.

The final version of, ‘The Top Hole Well Engineering Guidelines’ is now published in was launched at the OSIG conference and is now available for download from the SUT website.

Work on updating the other SUT-OSIG Guidance Notes has also progressed with sub-committees continuing work on the following documents.

- Geotechnical Investigations for Marine Pipelines
- Geotechnical Investigations for Subsea Structures

The other two guidance notes are expected to reach draft status in 2018.

Members also continue to actively participate in the following international standards:

- ISO Standard ‘Marine Soil Investigations’
- ISO Standard ‘Geophysical Site Investigation’
- OGP-D ‘Guidelines for the Conduct of Offshore Drilling Hazard Site Surveys’

Houston and Perth Branches of the OSIG Committee

The Houston and Perth OSIG Committees continue to develop their programme of events to strengthen their ties between industry and academia. With regular exchanges of meeting minutes, there is a greater alignment and understanding of s global OSIG community.

Closing comments

The OSIG committee has continued to work hard on the short courses and guidance notes and will be running a number of short courses and two-day events through 2018.

D Huws	M Lawrence	N Morgan	J Powell	R Santos
A Ivanovic	D Lloyd Jones	A Muir Wood	T Powell	A Searle
R Jardine	A Maconochie	R Orren	O Ruden	G Xu
P Larkin	R Metters	J Osborne	R Salisbury	

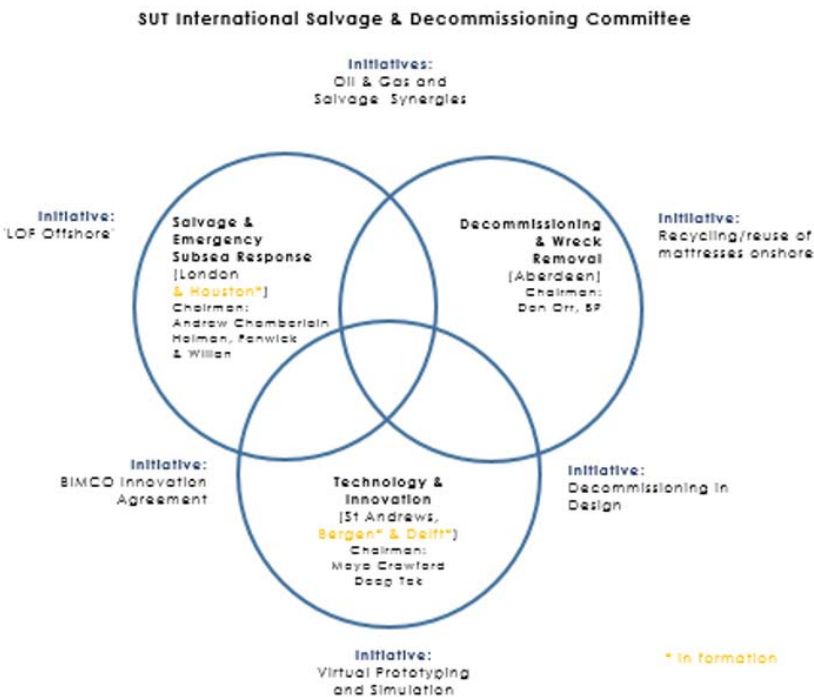
Salvage and Decommissioning

This past year has been one of change and capacity building for the Committee. It was with sincere thanks that goodbyes were said to a number of members who had taken part from the very beginning. Thanks is due also to the new members that have agreed to help drive the next phase of growth.

In order to add depth, as well as breadth, the planned, three sub-committees of Decommissioning and Wreck Removal; Salvage and Emergency Subsea Response and Technology and Innovation were formed. This has spread the burden of work and also the geographic location, with centres of activity being based in Aberdeen, London and St Andrews, respectively.



Chairman: Moya Crawford



all about people!

Composition:
including, but not limited to:
Oil & Gas Operators, Salvors, Lawyers,
Insurers/P&I Clubs/ Marine
Scientists/Manufacturers/ MoD, DNV GL,
International Salvage Union, American
Salvage Association, Decom North Sea

Committee

- M Crawford *Chairman*
- R Aspden
- B Browne
- K Broughton
- K Campbell
- A Chamberlain
- Prof M Elliott
- M Hoddinott
- C Falconer
- S Hall
- C Hume
- NJames
- J Lanting
- D McGeorge
- S McKenna
- D Orr
- Prof N Owens
- Prof D Paterson
- J Noble
- K Seath
- H Shaw
- B Twomey
- W Thornton
- J Ward
- Prof B Wilson

In order to address the demands of this wider group, and also build relationships with young engineers and scientists in Aberdeen, Perth and Houston, in particular, a modest amount of resource has been allocated by SUT Head Quarters. This has been used to partially remunerate Karen Seath, former acting CEO of Decom North Sea for her time and effort; both the support and Karen’s energy and organisational skills are much appreciated.

The SUT/MASTS Annual Workshop continues to be a great success and increasingly becomes one of the crucial meeting places for engineers and scientists to meet and discuss the very contemporary issue of decommissioning offshore installations. Don Orr has done

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Salvage and Decommissioning

continued...

a fantastic job in bringing people these two very different sectors together and dealing openly and transparently with what are very sensitive issues.

Andrew Chamberlain, too, has put significant weight behind the key initiative for the Salvage and Emergency Subsea Response Sub-Committee for what is termed 'LOF Offshore'. This slight variant of the internationally accepted salvage agreement to seen by the salvage industry as necessary to respond to rapidly to 'subjects of salvage' in the oil and gas sector, such as FPSO's, MODUs and drillships, where there may be large quantities of hydrocarbons flowing into the marine ecosystem, over which they have no direct control. This important initiative has the support of the American Salvage Association and will be progressed over the coming months.

Technology and Innovation is perhaps the glue. Being based in St Andrews, which is also has the Executive of MASTS (Marine Alliance for Science & Technology Scotland) promises a very strong dynamic. The aim is for this Sub-Committee to specifically address the North Sea as a regional sea and continue to develop strong relationships industry/academic in Norway, The Netherlands and Denmark in over the next couple of years.

One last important achievement this year was the presentation of a Keynote address at Australia Oil and Gas 2017. This international interaction will be further developed in 2017/18.

Subsea Engineering and Operations

This has been another tough year for those working in the subsea oil and gas industry. The hoped for slow and steady increase in the price oil was replaced by a nasty dip in May/June; the price is now back to where it was at the start of this year. The mantra of 'lower for longer' has been replaced by an acceptance that the datum has been reset and that we need to make projects economically viable at these reduced oil prices.

The Subsea Engineering and Operations Committee (SEOC) continues to form part of the London and South of England Branch and supports the organisation of events in this growing branch. It is probable that this relationship will be maintained with the SEOC stood down as a standalone technical committee.

The SEOC together with the London and South of England had arranged the following evening presentations to reflect the diversity of interests and the challenges being faced by our members.

September 2016 – “Subsea Umbilicals” by Ian Probyn (Global Technology Lead) for Technip Umbilicals. Ian’s presentation provided an overview of umbilical design and the key decisions which impact cost; he also highlighted some options for value engineering in the umbilical design to achieve the same functionality at lower costs

October 2016 – “Integrity Management and Life Extension of Flexible Risers and Jackets” – The first presentation was on “FlexIQ”, a complete offering for understanding condition of Flexible Risers, was provided by Kirsten Oliver, Brownfield and Asset Management Lead for INTECSEA. The second presentation “Cost Effective Methods to Extend Jacket Platform Life” was presented by Hassan Salaeh, Senior Engineer at 2H Offshore. This meeting was held at a new venue in Woking in an attempt to reach out to new members who live outside London; from the encouraging level of support, we should plan to hold more meetings outside southwest London.

November 2016 – “Floating wind turbines: a large range of engineering disciplines into a single system” by Ricard Buils Urbano at DNV GL. The presentation provided an overview of the industry and the particular technical challenges related to the numerical dynamic coupled analysis of floating wind turbines.

January 2017 - “Global Offshore Prospects” by Matt Cook (Analyst), Matt Adams (Analyst) and Steve Robertson (Director) from Douglas Westwood. The speakers presented Douglas Westwood’s outlook for the next five years and considered both the near-term macroeconomic outlook and specific sector drivers for a variety of offshore energy business services and equipment lines. Specific sector focus included offshore CAPEX and OPEX, offshore drilling, subsea production and associated services and technology.

February 2017 – “Subsea Field Architecture and Enabling Technologies” by Michael Green, Senior Field Development Engineer at TechnipFMC. Michael’s presentation included an in depth view of the subsea arena using a 3D simulator that allows the user to fly around the underwater environment.

April 2017 – “Recent Developments in the Technology of Subsea Valves for Critical Applications” by Enrico Sanguineti, General Manager at Advanced Technology Valve Spa. Valves are key components of subsea production and subsea pipeline transportation systems and manufacturers have been tasked to extend the capabilities of their products to cover larger sizes and more severe operating conditions. Enrico’s presentation discussed recent developments at ATV Spa with large bore valves and valves for HPHT and HIPPS applications, including valves supplied to Shell Appomattox and Exxon Julia.

All these presentations were well received by the members and with good levels of attendance at most meetings. Regretfully, some meetings had to be cancelled at short notice



Chairman: Iain Knight

Committee

I Knight *Chairman*
 S Hall *Secretary*
 M Avent
 D Bruton
 Dr R Chandwani
 C Cross
 P Ferguson
 S French
 P Hawthorn
 M Hudson
 A Hunt
 Dr R Jain
 P Jordan
 R Luff
 J McGrail
 J Robson-Brown

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Subsea Engineering and Operations

continued...

due to uncertainty on the number of attendees; whilst we always anticipate some people turning up on the night, advance registrations help considerably in planning these events.

As well as the formal presentations, an important part of the evening meetings is the opportunity for networking and meeting ex-colleagues and old friends. I am pleased to report that this was successfully achieved. On behalf of the SEOC and the London and South of England, I would like to thank all those who have contributed their time and effort to support these activities.

Panel on Underwater Robotics (formerly Underwater Robotics Group)

The SUT/ECOR Panel on Underwater Robotics held two meetings during this reporting period.

The first meeting was held in Tokyo, Japan, on 10 October 2016 during the Autonomous Underwater Vehicles 2016 conference. It was hosted by the Institute of Industrial Science, University of Tokyo with support from Ms. Harumi Sugimatsu. The IEEE Oceanic Engineering Society AUV conference series is one of the premiere underwater vehicle conferences. The SUT was a Technical Co-sponsor for the AUV 2016 Conference; the foundation for this collaboration was initiated at the previous Panel meeting held in Southampton, 2015. A highlight of the Panel meeting in Tokyo was the participation of officers from IEEE OES. Plans to establish the SUT as a regular Technical Co-sponsor of the AUV Conference were discussed and as well as other future collaborative opportunities on underwater robotics such as AUV competitions and conferences. Working together with other active organizations in the international underwater robotics community is important if the impacts of resources are to be maximized and scheduling of events is coordinated effectively for the global community.

On 6 April 2017, the Panel held another meeting during the Ocean Business event at the National Oceanography Centre, Southampton, United Kingdom. Mr. Stephen Hall represented the SUT Executive at this meeting and was given an update on the initiatives of the recently rejuvenated Panel on Underwater Robotics and ongoing collaborations with the IEEE/OES. Dr. Mario Brito shared his Personal View article with the Panel, which will be appearing in a future issue of the Society’s journal.

Although a video conference may be planned for early 2018, the next scheduled meeting is planned to coincide with AUV 2018 in Porto, Portugal. A 2019 meeting is tentatively being considered for the next Ocean Business conference in Southampton, United Kingdom

Committee

N Bose *Chairman*
Dr R Lewis *Secretary*
R Mills *Vice Secretary*
K Birch
Dr M Brito
Prof. G Griffiths MBE
D Hook
J Jamieson
C Kaminski
A Lubbes
Dr G Meinecke
Dr J Opderbecke
Dr A Phillips
Prof. A Wählin
Dr Jingjing Xu

Underwater Science Group



Chairman: Dr Martin Sayer

Committee

- Dr MDJ Sayer *Chairman*
- S Hall *Secretary*
- P Baker
- Dr I Gibb
- Dr Q Huggett
- Dr A Jensen
- N Langhorne
- Dr B MacKenzie
- S Marine
- G Momber
- H Powell
- R Powell

The Underwater Science Group has a large and varied membership. Although it has not met over the past 12 months, the facility provided by the SUT continues to afford a forum for discussion of underwater science, the review of diving technologies employed for the delivery of science and the appraisal of underwater scientific methods. One of the continuing strengths of the group is that it provides an opportunity by which academia and industry can cooperate on and discuss issues of common scientific interest but from differing operational perspectives. This is very much reflected in the membership of the group which has representatives from the university, research council, charity, industry and military sectors. In addition, the group has membership with scientific and archaeological interests. The group maintains its broad membership mainly through the addition of corresponding members to those who regularly attend the meetings and through links with other underwater science groups in Europe, the United States, India, Australia and New Zealand.

The raising of the scientific profile of the Society’s journal *Underwater Technology* remains a key area for the underwater science group. The USG is working to generate a more consistent stream of submissions to include topical review articles that are pertinent both to the fields of underwater science and underwater technology, and through topical special issues. The group continues to support the editorial board of the Society’s journal by maintaining a membership with a broad inter-disciplinary range of scientific knowledge which helps to underpin the formal peer-review framework for journal submissions.

**Society for Underwater Technology
Report and Consolidated Financial Statements
for the year ended 30 June 2017**

**Company Number 932590
Registered Charity 256659
Scottish Charity Number: SCO43942**

Society for Underwater Technology
Consolidated Financial Statements for the year ended
30 June 2017

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Society for Underwater Technology
Consolidated Financial Statements for the year ended
30 June 2017

Legal and Administrative Information

The Council Members, who are the Trustees for the purpose of Charity Law, and also the Directors and Members for the purpose of Company Law, present their Report together with the Financial Statements for the year ended 30 June 2017.

President:	Dr D W Kirkley
Chairman and Vice President:	P Metcalf
Hon Treasurer:	M R Cook
Hon Secretary:	D A Brooks
Chief Executive (CEO):	S Hall
Registered Office:	LG07 Quality Court London WC2A 1HR
Registered Charity:	256659
Company Number:	00932590
Auditors:	Nunn Hayward LLP Sterling House 20 Station Road Gerrards Cross Buckinghamshire SL9 8EL
Principal Bankers:	Barclays Bank plc and Bank of Scotland plc
Solicitors:	Hart Brown 2 Jenner Road Guildford Surrey GU1 3PW

**Society for Underwater Technology
Chairman's Report
30 June 2017**

2016/17 has been a pivotal year in the future development of the Society for Underwater Technology with a new CEO, Steve Hall, taking over on the retirement of Bob Allwood in April 2017. Bob Allwood's pending retirement triggered a detailed review by a Council working group of the attributes needed to meet the new challenges faced by the Society. The appointment process attracted a number of very strong candidates and Council was pleased to appoint Steve Hall to the role with his wealth of knowledge, contacts and experience in the area of underwater science. Steve joins us from a long career at the National Oceanographic Centre and he is a long standing member and supporter of the Society. Bob was appointed CEO in 2009 and during his time in the role had seen significant changes to world of underwater technology. Council would like to thank Bob for his unstinting devotion to duty and wish him well for a long retirement.

During the year significant progress has been made towards returning the Society to surplus. Council set a target to halve the deficit of 2015/16 during 2016/17 and return to a positive result in 2017/18. This year, whilst still posting a deficit, shows a big improvement over last with the deficit of being reduced from £352k to £125k, thereby beating Council's target for the period. This is in no small part due to the combined efforts and diligence of the London Secretariat and the Branch Committees to both cut costs and to look at new ways of increasing revenue.

Finance

The 2016/17 financial outcome is a deficit of £125k. This figure includes £16k for the support of the ESF students which comes from the ESF restricted fund.

The Society has, over the surplus years, accrued sizeable reserves to cover such eventualities as the dramatic loss of revenue from courses seen in 2015/16. Despite eating into the reserves last year, the Society remains in a strong position with comfortable reserves of £392k, of which £197k are the ESF restricted funds. During the past year much effort has gone into cutting costs, some elements of which provided an immediate return such as the major reduction of business development costs to the tune of a saving of £71k. Longer term savings include the relocation of the London office to Chancery Lane which will realise significant savings in a full year. New measures have been put in place by the Finance Sub-Committee working closely with the CEO to better manage and further reduce costs whilst acknowledging the need to maintain the services to the membership as a learned society.

Revenue from membership fees has shown a small but significant decline whereas the income from the Journal and other publications has remained static. Council, having simplified the individual membership fee structure last year, has reluctantly increased the fees by 5% noting that this is the first increase since 2012. Corporate membership fees remain unchanged as they were recently completely restructured. Inevitably there has been a turnover of both individual and Corporate members with most of the new members coming through the Branches. It is pleasing to note that the strong interest from student and young engineers following initiatives in Aberdeen, London, Houston and Perth continues unabated. Council encourages all the Branches to continue to look at opportunities to provide local initiatives to further the interests of the Society among students and young engineers. They are the Society's future members and will guarantee the long term future of the Society.

It is interesting to note that despite the downturn in the market almost all the UK evening meetings and courses have produced a net contribution to Society funds. This is a reflection on the rigour imposed on the initial planning of an event and the ongoing monitoring of expected financial outcome. In this way early decisions can be made to cancel an event if necessary without exposing SUT to losses.

Whilst the accounts presented relate to UK and Norway the situation in Perth and Houston demonstrate a similar trend of increasing efficiency and tailoring expenditure to meet the challenges which the oil and gas industry continues to face. Council continues to encourage them in their quest to diversify their underwater technology activities.

Council

A new 5 year strategic plan is being developed to take the Society forward in the current constrained climate. In the new age of globalisation this plan will reflect the wishes and needs of the Branches. In parallel Council is reviewing the services and benefits it offers members with a view to improving the effectiveness of the offering. Council is indebted to those members of Council in faraway places who give of their time beyond the normal call of duty by dint of the diverse time zones between Houston and Perth.

**Society for Underwater Technology
Chairman's Report Cont/d
30 June 2017**

Committees of Council

The Committees of Council continue to support Council in the key areas Education and Training, Publications and International Development. It is important that the Branches, particularly those overseas, are adequately represented on these Committees. To better facilitate this, the Chairmen are tasked to seek nominations for Committee membership from the Branches.

On the Education and Training front the Society continues to offer a number of student bursary schemes around the world and it is timely to review the scope of these schemes to develop best practice going forward. In particular the future scope of the ESF needs to be reviewed in view of the increasing difficulty in attracting external funding. There are also many examples of good practice of what the SUT should be doing to support schools and career development at a local level and this should be shared for the benefit of all. Council has recommended that a limited number of awards be made from the ESF fund for this financial year together with the honouring of all existing awards.

Technical Committees

The Technical Committees continue to be the lifeblood of the Society with each Committee growing organically over the life of SUT. The time has come to review the remits and scopes of each Committee to reflect more closely the needs of the members in today's changing environment. There are many opportunities for the Society to become more prominent in new areas of underwater technology. Where appropriate some committees may elect to set up regional sub committees in association with a local branch and Council would encourage more dialogue between Technical Committees and the Branches.

By the time this report is published OSIG will have hosted OSIG 2017, a world class conference held every five years. Planning for this event started many years ago and congratulations are in order to the OSIG Committee and all those supporting them for staging such a successful event.

Branches

The worldwide spread of the Society remains unchanged with established overseas branches in Houston, Rio de Janeiro, Perth, Melbourne, Kuala Lumpur, Beijing, Bergen and most recently Singapore. Future geographical expansion opportunities will continue to be explored as and when opportunities present themselves and funding becomes available. In the UK, Aberdeen continues to go from strength to strength with the North of England Branch based in Newcastle and the London and South of England Branch now firmly established.

All the Branches have been very active with local events. The mainstay of Branch activities remains the technical presentations and courses, many of the awareness courses now being tuned to meet local requirements

SUT Staff

Thanks must be given to the small group of hardworking staff in London and Aberdeen. In London the staff has endured all the headaches which go with moving offices and in Aberdeen the staff have been tirelessly supporting the build up to OSIG 2017 in addition to their day job. In addition we need to thank the those in our Houston and Perth Branches. Between them all, they have kept the daily activities and events of the Society on track during the year. I would also like to thank all the Committees, particularly their Chairmen, as well as those of the Branches for all their hard work and the enthusiasm that they bring to the SUT. Without their enthusiasm and dedication the Society would not be what it is today.

In conclusion despite the current financial situation, Council believes the Society remains in a strong place to meet the challenges which lie ahead. SUT has been through difficult times in the past and each time has grown stronger through the resolve of its members and Council looks forward to 2017/18 as the next step back to surplus and future success.

**Society for Underwater Technology
Educational Support Fund Report
30 June 2017**

The SUT's Education Support Fund has supported almost 300 undergraduate and postgraduate students since it was established in 1990. Initially only available to UK-based students, applications are now accepted from students studying at bona-fide educational institutions across the world, though the majority tend to come from our well-established links with a core group of engineering, oceanographic and technology universities in England, Wales and Scotland, and the current group are all studying within the UK.

The quality of the students remains very high with most of the undergraduates leaving with a 1st or Upper Second Class honours degree, and as far as our follow up investigations are able to ascertain all of our students remain within the ocean science, technology and engineering sector. Increasingly we call upon them to provide the public face of SUT at events such as lectures for schools, and they provide a pool of individuals favourably predisposed to SUT as they work through their careers across the world.

The ESF is managed via the Education and Training committee, an international SUT committee now chaired by Sue John. Applications for awards are assessed by a panel comprising the SUT Chief Executive, a Member of Council, and members of the Education Committee. The assessment criteria are weighted in such a way that students studying subsea engineering and technology have the highest chance of success, but we often fund outstanding students from associated marine science areas who have shown an intention to work within industry upon graduation.

The number of students we are able to support depends upon the level of income secured by SUT from year to year. With the ongoing downturn in our financial support from the offshore energy sector it has only been possible to maintain the existing cohort of students, with just two new undergraduates added from the 2017 pool of applicants, and none were added in 2016. As finances begin to recover, we intend to ramp-up numbers again to former levels, and to review the way in which students associated with our overseas branches are able to access the ESF to ensure fair allocation of resource.

For the 2017-2018 Academic year the continuing students are studying Mechanical Engineering at the University of Bristol, Oceanography at Southampton, and Marine Science at the Scottish Association of Marine Science /University of Highlands and Islands.

The two new students are studying Marine Biology at the University of Liverpool and Marine Technology at the University of Plymouth.

Undergraduates receive £2000 per academic year, postgraduates receive £4000.

From a gender balance perspective, we note that 4 out of the current group of 5 students are female.

Society for Underwater Technology
Educational Support Fund Report Cont/d
30 June 2017

Educational Support Fund Table 2016-2017

Summary of Undergraduates graduating in 2017

Liverpool	<i>Marine Biology and Oceanography</i>	1st
Liverpool	<i>Marine Biology</i>	2.2
Southampton	<i>Geology with Physical Geography</i>	1st
UEA	<i>Meteorology and Oceanology (MSci)</i>	1st

Summary of Undergraduates continuing in 2017-2018

Southampton	<i>Oceanography</i>
Bristol	<i>Mechanical Engineering</i>
SAMS	<i>Marine Science</i>

**Society for Underwater Technology
Council Members' Annual Report including Strategic Report
30 June 2017**

STRUCTURE, GOVERNANCE AND MANAGEMENT

The Society's governing document is the Memorandum and Articles of Association and its full name is the Society for Underwater Technology Limited. The Society is a registered company limited by guarantee and a registered charity.

Council Members and their Interests

The Members serving on the Council throughout the year were as follows:

Dr D W Kirkley	Prof Gwyn Griffiths	C J Curran
P Metcalf	T A Powell (Resigned Dec'16)	D M Saul
Dr W Loth	D J Pliszka (Resigned Dec'16)	D W Baker (Appointed Dec'16)
Dr M D Sayer	M M Crawford (Resigned Dec'16)	C Milner (Appointed Dec'16)
D A Brooks	A Barwise	Prof R F Rayner (Appointed Dec'16)
S P Hall (Resigned Mar'17)	R Farrier	R A Binks (Appointed Dec'16)
M D Jordan (Resigned Dec'16)	M R Cook	
J Mann	R A Macdonald	

None of the Members of the Council has any financial interest in the Society that requires disclosure under the Companies Act 2006. For Related Party transactions please see notes 12 and 24.

Council Members are appointed for three years by a ballot among members of the Society (members comprising the classes of Fellow, Individual Member and Corporate Member), and are drawn from among these Members. Candidates must be proposed and seconded by any two other Members. Ballot forms must be sent to Members twenty-eight days before the election, which is by simple majority, and this shall take place seven days before the Annual General Meeting. Those elected shall hold office from the conclusion of this Annual General Meeting. At the end of three years, a Council Member may stand for re-election, but no Member of Council may serve for more than six consecutive years.

New Council Members are not provided with a formal induction pack following their election, but are briefed verbally at the first meeting.

Organisational Structure

A Board of Trustees (The Council) of up to or similar to 18 members, who meet quarterly, administer the Society. A Chief Executive (CEO), who's not a trustee, is appointed by The Council to manage the day to day operations of the Society.

Branches of the Society are established under the authority of Council in accordance with the Memorandum and Articles of the Society. They will have their own organising committee with elected officers.

The results of branches of the Society whereby the UK charity either has control, or the branch is not deemed to be administratively autonomous are consolidated in the Financial Statements.

OBJECTIVES AND ACTIVITIES

The Society is principally engaged in the promotion of awareness in all aspects related to underwater technology. Its Mission and Strategic Vision are described as follows:

Mission

The Society for Underwater Technology (SUT) is an international body actively promoting the development, dissemination and exchange of ideas, information and technology arising from or related to the underwater environment.

Strategic Vision

To maintain and develop SUT as the foremost society worldwide focusing on underwater technology, building on a reputation for high standards in publications, conferences and training courses; having a growing membership in the UK and abroad; and having significant influence with government and industry in relevant policy areas, and encouraging people to attain suitable qualifications and enter the field of underwater technology.

Society for Underwater Technology
Council Members' Annual Report including Strategic Report Cont/d
30 June 2017

Public Benefit

In keeping with the Charity Commission's key principles that there must be an identifiable benefit to the public or a section of the public, the Society has undertaken the following activities during this financial year:

- Through its Educational Support Fund (ESF), it has supported 8 undergraduate students on relevant courses at a total cost of £16,000 (2016: £26,000).
- Through its Educational Support Fund (ESF), it has not supported any postgraduate students on relevant courses this year (2016: £17,000), however, it hopes to do so again soon.
- Provided free of charge the most highly acclaimed on-line magazine in the field of underwater technology and sub-sea engineering, entitled UT³.
- Has organised free of charge Christmas Lecture Programmes in underwater technology for Schools in London, Portsmouth, Cardiff and Aberdeen.
- Provided numerous high quality subsidised training courses for industry.

Grant Making Policy

Grants are awarded to high-quality students at either undergraduate or postgraduate (one-year taught MSc) level undertaking courses relevant to the area of interest of the Society with the aim of encouraging more entrants to the marine disciplines.

STRATEGIC REPORT

Achievements and Performance

We have referred to the guidance contained in the Charity Commission's general guidance on public benefit when reviewing our aims and objectives and in planning our future activities.

The Unrestricted Funds of the Group made a deficit of £119,141 after allowing for £18,503 in gains on investments, £416 for grants and awards and a transfer to the Educational Support Fund of £nil. The Restricted Funds (The Educational Support Fund) shows a deficit for the year of £5,984 including £2,143 in gains on investments and making grants and donations of £16,000. Overall the Group made a net deficit of £125,125 for the year. Please also refer to the Chairman's Report.

Financial Review

Reserves Policy

Free reserves are established and reviewed to ensure that the Society retains a level of funds to meet its forward obligations and to ensure it can reasonably maintain a level of service in line with its objectives. The Council Members consider this to be approximately 50% of average annual expected expenditure.

Educational Support Fund

The Educational Support Fund is a restricted fund in accordance with the Statement of Recommended Practice. The Members of the Council feel this name to be more appropriate given the purpose of the fund.

Investments

There are no formal restrictions on the investments made by the Society.

Currently, the primary objective of holding fixed assets investments is the security they offer rather than the income that is generated. Investment income is shown in note 7 of the accounts and totalled £9,959 for the year (2016: £11,681) and a gain of £20,646 (2016: £2,430) was recognised on revaluation. Given this primary objective, the Members are satisfied with the returns the investments have provided in the period.

Plans for Future Periods

Please refer to the Chairman's Report for future plans and developments.

Principal Risks and Uncertainties

The Council Members actively review the major risks which the charity faces and confirm that they have established systems to mitigate the significant risks.

Operational Risk

These systems are being put into a more formalised structure and are designed to reduce the likelihood of the risk and to lessen the impact on the Society should those risks materialise. Key risks at present are assessed as being associated with the Society's necessary global expansion and the concomitant development of IT structures to support this. However, no reason is seen to amend further the Reserves Policy as detailed above.

**Society for Underwater Technology
Council Members' Annual Report including Strategic Report Cont/d
30 June 2017**

Principal Risks and Uncertainties continued

Financial Risk

The Members remain cautious in terms of the Society's investment strategy and are satisfied they have taken appropriate steps to ensure that reserves are not placed at any undue risk. During the period and at the Balance Sheet date, the majority of balances held at bank were held in either current or deposit accounts with High Street banks. The make-up of fixed asset investments is given in note 16 of the Financial Statements. The majority of these investments are placed in two Charities Official Investment Funds.

Going concern

The Members have given due consideration to the ability of the Society to continue as a going concern. Following the implementation of significant cost control measures, the increase in uptake for subsea events as compared to the 2015/16 year, the continued support of its membership and the relative improvement in the oil industry, the Members are satisfied that the going concern basis remains appropriate. Further, the Society believes that although reduced from prior years, the level of unrestricted funds held remains sufficient to support the activities going forward.

FUNDS HELD AS CUSTODIAN TRUSTEE ON BEHALF OF OTHERS

No funds are held as custodian trustee on behalf of the others.

STATEMENT OF COUNCIL MEMBERS' RESPONSIBILITIES

The Council Members are responsible for preparing the Report and the Financial Statements in accordance with applicable law and regulations.

Company Law requires the Council Members to prepare financial statements for each financial year. Under that law the Council Members have elected to prepare the financial statements in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards and applicable law). Under company law the Council Members must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Society and of the surplus and deficit of the Society for that period. In preparing these financial statements, the Council Members are required to:

- observe the methods and principles in the Charities SORP;
- select suitable accounting policies and then apply them consistently;
- make judgements and accounting estimates that are reasonable and prudent;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Society will continue its activities.

The Council Members are responsible for keeping adequate accounting records that are sufficient to show and explain the Society's transactions and disclose with reasonable accuracy at any time the financial position of the Society and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Society and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

STATEMENT AS TO DISCLOSURE OF INFORMATION TO AUDITORS

So far as the Council Members are aware, there is no relevant audit information (as defined by Section 418 of the Companies Act 2006) of which the Society's auditors are unaware, and each Council Member has taken all the steps that he or she ought to have taken as a Council Member in order to make himself or herself aware of any relevant audit information and to establish that the Society's auditors are aware of that information.

AUDITORS

A resolution proposing that Nunn Hayward LLP be reappointed as auditors of the Society will be put to the Council Members.

On behalf of the Council

P Metcalf
Chairman of the Council

D A Brooks
Honorary Secretary

Dated: 21 September 2017

LG07 Quality Court, London WC2A 1HR

**Independent Auditors' Report to the Trustees of
Society for Underwater Technology
30 June 2017**

Opinion

We have audited the consolidated financial statements of The Society for Underwater Technology and its subsidiary (the group) for the year ended 30 June 2017 which comprise the consolidated statement of financial activities, the group and parent company balance sheet and related notes. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102, The Financial Reporting Standard applicable in the UK and Republic of Ireland (United Kingdom Generally Accepted Accounting Practice).

This report is made solely to the parent company's members (who are also the trustees for the purposes of charity law and the company's members and directors for the purposes of company law and are known as council members), as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006, and to the charity's trustees, as a body, in accordance with regulations made under section 154 of the Charities Act 2011. Our audit work has been undertaken so that we might state to the council members those matters we are required to state to them in an auditors' report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the parent charitable company and the parent charitable company's council members as a body, for our audit work, for this report, or for the opinions we have formed.

In our opinion the consolidated financial statements:

- give a true and fair view of the state of the group and parent charitable company's affairs as at 30 June 2017 and of the group's incoming resources and application of resources, including its income and expenditure, for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Companies Act 2006, the Charities Act 2011, the Charities and Trustee Investment (Scotland) Act 2005 and regulations 6 and 8 of the Charities Accounts (Scotland) Regulations 2006 (as amended).

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the group and parent charitable company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the council members' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the council members' have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the group's and parent charitable company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

Other information

The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The council members are responsible for the other information. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon. In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

**Independent Auditors' Report to the Trustees of
Society for Underwater Technology Cont/d
30 June 2017**

Opinions on other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Trustees' Annual Report, including the Strategic Report, for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Trustees' Annual Report, including the Strategic Report, has been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of the knowledge and understanding of the group and parent charitable company and its environment obtained in the course of the audit, we have not identified material misstatements in the Trustees' Annual Report including the Strategic Report.

We have nothing to report in respect of the following matters where the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept or returns adequate for our audit have not been received from branches not visited by us;
- the financial statements are not in agreement with the accounting records and returns;
- certain disclosures of trustees' remuneration specified by law are not made;
- we have not received all the information and explanations we require for our audit; or

Responsibilities of council members

As explained more fully in the Statement of Council Members' Responsibilities Statement, the council members (who are also the directors of the charitable company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the council members determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the council members are responsible for assessing the group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the council members either intend to liquidate the group or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Tom Lacey (Senior Statutory Auditor)
for and on behalf of Nunn Hayward LLP, Statutory Auditor
Nunn Hayward LLP is eligible to act as an auditor in
terms of Section 1212 of the Companies Act 2006

Date : 22 November 2017

**Sterling House
20 Station Road
Gerrards Cross
Buckinghamshire
SL9 8EL**

Society for Underwater Technology
Consolidated Statement of Financial Activities
(Incorporating the Income and Expenditure Account)
For the year ended 30 June 2017

	Note	Unrestricted Funds £	Restricted Funds £	Total 2017 £	Total 2016 £
Income					
Donations and legacies	3	280	7,206	7,486	4,966
<i>Income from charitable activities:</i>					
Memberships, conferences and events	4	321,933	-	321,933	394,896
<i>Income from other activities:</i>					
Other incoming resources		540	-	540	-
Investment income	7	9,292	667	9,959	11,681
Total income		<u>£ 332,045</u>	<u>£ 7,873</u>	<u>£ 339,918</u>	<u>£ 411,543</u>
Expenditure					
<i>Expenditure on charitable activities:</i>					
Charitable activities	8	469,689	16,000	485,689	765,747
Total expenditure		<u>£ 469,689</u>	<u>£ 16,000</u>	<u>£ 485,689</u>	<u>£ 765,747</u>
Net income / (expenditure) before gains / (losses) on investments		(137,644)	(8,127)	(145,771)	(354,204)
Net gains / (losses) on investments	16.3	18,503	2,143	20,646	2,430
Net income / (expenditure)		<u>(119,141)</u>	<u>(5,984)</u>	<u>(125,125)</u>	<u>(351,774)</u>
Transfers between funds		-	-	-	-
Net Movement in Funds		<u>(119,141)</u>	<u>(5,984)</u>	<u>(125,125)</u>	<u>(351,774)</u>
Reconciliation of funds					
Total funds brought forward		312,983	203,428	516,411	865,562
Gains/(losses) on foreign fund balances		1,122	-	1,122	2,623
Total funds carried forward		<u>£ 194,964</u>	<u>£ 197,444</u>	<u>£ 392,408</u>	<u>£ 516,411</u>

Net income is derived from continuing operations for the above two financial years.

All gains and losses recognised in the year are included above.

The notes on pages 2-9 to 2-19 form part of these financial statements

Society for Underwater Technology
Consolidated Balance Sheet
As at 30 June 2017

	Note	£	2017	£	£	2016	£
Fixed assets							
Tangible assets	15		14,021			10,203	
Investments	16		248,323			247,416	
			<u>262,344</u>			<u>257,619</u>	
Current assets							
Publications stock	17	17,672		27,878			
Debtors	18	147,416		131,608			
Cash at bank and in hand		141,554		175,704			
		<u>306,642</u>		<u>335,190</u>			
Creditors: Amounts falling due within one year	19	176,578		76,398			
Net current assets			<u>130,064</u>			<u>258,792</u>	
Net assets			<u>£ 392,408</u>			<u>£ 516,411</u>	
Funds of the charity:							
Restricted income funds	22		197,444			203,428	
Unrestricted income funds			<u>194,964</u>			<u>312,983</u>	
			<u>£ 392,408</u>			<u>£ 516,411</u>	

Total funds as stated above include a Revaluation Reserve of £152,455 (2016: £131,809) (see note 22) and a Foreign Currency Translation Reserve of £(9,153) (2016: £(10,275)).

Approved by the Council on 21 September 2017 and signed on its behalf by:

P Metcalf
Chairman of the Council

M R Cook
Honorary Secretary

Company Number: 00932590
Registered Charity Number: 256659

The notes on pages 2-9 to 2-19 form part of these financial statements.

Society for Underwater Technology
Balance Sheet
As at 30 June 2017

	Note	£	2017 £	£	2016 £
Fixed assets					
Tangible assets	15		14,021		10,203
Investments	16		248,323		247,416
			<u>262,344</u>		<u>257,619</u>
Current assets					
Publications stock	17	17,672		27,878	
Debtors	18	148,550		126,825	
Cash at bank and in hand		115,883		149,690	
		<u>282,105</u>		<u>304,393</u>	
Creditors: Amounts falling due within one year	19	174,770		73,931	
Net current assets			<u>107,335</u>		<u>230,462</u>
Net assets			<u>£ 369,679</u>		<u>£ 488,081</u>
Funds of the charity:					
Restricted income funds	22		197,444		203,428
Unrestricted income funds			<u>172,235</u>		<u>284,653</u>
			<u>£ 369,679</u>		<u>£ 488,081</u>

Total funds as stated above include a Revaluation Reserve of £152,455 (2016: £131,809) (see note 22).

Approved by the Council on 21 September 2017 and signed on its behalf by:

P Metcalf
Chairman of the Council

M R Cook
Honorary Secretary

Company Number: 00932590
Registered Charity Number: 256659

The notes on pages 2-9 to 2-19 form part of these financial statements.

Society for Underwater Technology
Notes to the Consolidated Financial Statements
For the year ended 30 June 2017

1. Accounting policies

The principle accounting policies adopted, judgements and key sources of estimation uncertainty in the preparation of the financial statements are as follows:

a) Basis of preparation

The financial statements have been prepared in accordance with Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102 – effective 1 January 2015) - (Charities SORP 2015), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102), Charities Act 2011, Companies Act 2006, the Charities and Trustee Investment (Scotland) Act 2005 and the Charities Accounts (Scotland) Regulations 2006 (as amended).

Society for Underwater Technology meets the definition of a public benefit entity under FRS 102. Assets and liabilities are initially recognised at historical cost or transaction value unless otherwise stated in the relevant accounting policy note(s).

The legal and actual status of affiliated operations is periodically assessed by the charity. As a result the charity concludes that the operations in Perth (Australia), Houston (USA), Melbourne (Australia), Nigeria, Rio de Janeiro (Brazil), Kuala Lumpur (Malaysia) and Beijing (China) do not qualify as subsidiaries under the Companies Acts 2006 or as branches under the guidance laid out by the Charities SORP (FRS 102). The detailed review of the constitutions and operations concluded that they are administratively autonomous and should therefore not be consolidated. The Society for Underwater Technology Norway NUF was established as a Norwegian branch of a foreign enterprise (NUF). The constitution of this operation varies from those mentioned above and it qualifies as a branch under the Charities SORP (FRS 102) as a result Consolidated Accounts have been prepared.

The presentation currency is £ Sterling rounded to nearest £1.

b) Preparation of the accounts on a going concern basis

The Members have given due consideration to the ability of the Society to continue as a going concern. Following the implementation of significant cost control measures, the increase in uptake for subsea events as compared to the 2015/16 year, the continued support of its membership and the relative improvement in the oil industry, the Members are satisfied that the going concern basis remains appropriate. Further, the Society believes that although reduced from prior years, the level of unrestricted funds held remains sufficient to support the activities going forward.

c) Group financial statements

The financial statements consolidate the results of the Society and its Norwegian branch, the Society for Underwater Technology Norway NUF, on a line by line basis. A separate Statement of Financial Activities and Income and Expenditure Account for the Society has not been presented because the Society has taken advantage of the exemption afforded by section 408 of the Companies Act 2006.

d) Fund accounting

The principles of fund accounting, as described in the Statement of Recommended Practice, Accounting and Reporting by Charities: the Charities SORP (FRS 102), have been applied in the preparation of these financial statements.

Funds held by the charity are either:

Unrestricted general funds

These are funds which can be used in accordance with the charitable objects at the discretion of the Trustees.

Restricted funds (The Educational Support Fund)

These funds can only be used for this purpose within the objects of the charity. The income from investments held under restricted funds is itself restricted.

Society for Underwater Technology
Notes to the Consolidated Financial Statements Cont'd
For the year ended 30 June 2017

1. Accounting policies – cont'd

e) Tangible fixed assets

Assets are capitalised at cost when the economic benefit of ownership will spread over a number of years.

Depreciation is provided on tangible fixed assets at rates calculated to write off the cost less estimated residual value of each asset evenly over its expected useful life as follows:

Office furniture and equipment	20% reducing balance
Computer	33% straight line

f) Publications stock

Stock is valued at the lower of net realisable value and cost.

g) Investments

Investments are valued at the prevailing market price as at the Balance Sheet date. Realised and unrealised gains (or losses) are reflected in the Statement of Financial Activities in the year in which they occur. No distinction is made between realised and unrealised gains in the Statement of Financial Activities as the Trustees consider that the disclosure of total gains/losses show a truer and fairer view.

h) Voluntary income

Voluntary income is recognised on receipt.

i) Events Income

Events income is included when receivable.

j) Subscriptions

Membership subscriptions are accounted for on a receivable basis.

k) Grants Payable

Grants payable are charged against income upon approval of the grant, in so far as the grant is payable from current resources.

l) Expenditure

Charitable activities represent all costs incurred by the Society in meeting its charitable objectives.

Governance costs are incurred in connection with the management and administration of the charity. These include central management and administration costs, organisational costs and costs incurred to ensure compliance with constitutional and statutory requirements.

Each natural category of costs is considered individually and allocated on a percentage basis by function.

m) Operating Leases

Operating lease rentals are charged to the profit and loss account as incurred.

n) Foreign Currencies

Assets and liabilities denominated in foreign currencies are translated at the rate of exchange ruling at the Balance Sheet date. Transactions are translated at the rate of exchange ruling at the date of the transaction. All exchange differences are reflected in the Statement of Financial Activities.

o) Legal Status of the Charity

The charity is a company limited by guarantee and has no share capital.

p) Cashflow Statement

The Trustees have taken advantage of the exemptions given by Financial Reporting Standard 102 and have not prepared a Cashflow Statement.

Society for Underwater Technology
Notes to the Consolidated Financial Statements Cont/d
For the year ended 30 June 2017

2. Results of the Society for Underwater Technology NUF

The Society operates a Norwegian branch, the Society for Underwater Technology Norway NUF. The branch is a separate legal entity with no share capital operating under the control of the Society for Underwater Technology in the UK. A summary of the results of the Norwegian branch are shown below:

	2017 £	2016 £
Income	-	13,283
	-	13,283
Expenditure on charitable activities	1,221	6,112
Governance costs	5,502	4,602
	6,723	10,714
Net incoming resources before gains/(losses) on investment assets	(6,723)	2,569
Net gains/(losses) on investment assets	-	-
Net (deficit)/surplus	£ (6,723)	£ 2,569

3. Income from donations and legacies

	2017 £	2016 £
Donations	280	540
ESF Donations	7,206	4,426
	£ 7,486	£ 4,966

4. Income from charitable activities

	Note	Unrestricted Funds £	Restricted Funds £	Total 2017 £	Total 2016 £
Membership subscriptions	4.1	186,493	-	186,493	216,089
Conferences and seminars	5	118,318	-	118,318	142,648
Fees for services	6	2,500	-	2,500	25,500
Publications, journals, newsletters and educational products		14,622	-	14,622	10,659
		£ 321,933	£ -	£ 321,933	£ 394,896

4.1 Membership subscriptions

	2017 £	2016 £
Corporate members	133,892	162,938
Individual members	52,601	53,151
	£ 186,493	£ 216,089

Society for Underwater Technology
Notes to the Consolidated Financial Statements Cont/d
For the year ended 30 June 2017

5. Conferences and seminars

	2017			2016		
	Fees	Direct	Surplus/	Fees	Direct	Surplus/
	£	Costs	(Deficit)	£	Costs	(Deficit)
		£	£		£	£
Courses						
Subsea Awareness – Kuala Lumpur	-	-	-	-	-	-
Subsea Awareness – Singapore	-	-	-	-	-	-
Subsea Awareness China	-	-	-	-	-	-
Subsea Technical Flexible Risers – Kuala Lumpur	-	-	-	1,282	217	1,065
Offshore Site Investigation & Geotechnics - Courses	-	475	(475)	4,750	4,847	(97)
Subsea Awareness - Norway	-	-	-	-	-	-
Qualification of New Technology	5,596	4,501	1,095	-	-	-
Flow assurance	-	-	-	2,300	520	1,780
Conferences and workshops						
Subsea Metrology	-	-	-	-	-	-
Offshore Site Investigation and Geotechnics	-	3,115	(3,115)	-	-	-
Research						
BRIDGES	21,992	903	21,089	20,680	63	20,617
Branch activities						
London & South England						
Evening Meetings	7,371	4,906	2,465	6,339	6,929	(590)
Other events	7,389	3,211	4,178	7,389	81,218	(73,829)
OSOA	1,600	2,218	(618)	-	-	-
Aberdeen						
Subsea Awareness	21,000	5,656	15,344	38,590	8,306	30,284
Offshore Marine Operations Awareness	-	975	(975)	-	-	-
Sponsorship of events	21,350	-	21,350	25,000	-	25,000
Introduction to Subsea Facilities	-	375	(375)	3,850	1,992	1,858
Introduction to Subsea Positioning	-	-	-	1,400	107	1,293
THSIS/SUT Seminar	-	-	-	3,106	3,157	(51)
Flexible Risers	-	-	-	-	-	-
Golf Day	2,663	751	1,912	3,480	3,696	(216)
Evening Meetings	7,929	5,681	2,248	4,501	5,497	(996)
Annual General Meeting	9,204	9,011	193	6,800	12,390	(5,590)
Breakfast Meeting	2,575	1,633	942	1,667	3,108	(1,441)
SUT+	12	2	10	2,714	2,317	397
Newcastle						
Evening Meetings	1,792	1,014	778	2,125	3,936	(1,811)
Other events	1,921	1,176	745	-	-	-
Other events						
Annual General Meeting	4,300	5,667	(1,367)	5,275	5,748	(473)
Christmas Lecture	1,624	7,906	(6,282)	1,400	7,601	(6,201)
	<u>£118,318</u>	<u>£ 59,176</u>	<u>£ 59,142</u>	<u>£142,648</u>	<u>£151,649</u>	<u>£ (9,001)</u>

Society for Underwater Technology
Notes to the Consolidated Financial Statements Cont/d
For the year ended 30 June 2017

6. Fees for services

	2017 £	2016 £
All Energy Conference	2,500	2,500
Oceanology International	-	18,000
Offshore Europe	-	5,000
	<u>£ 2,500</u>	<u>£ 25,500</u>

7. Investment income

	Unrestricted Funds £	Restricted Funds £	Total 2017 £	Total 2016 £
Charities Official Investment Fund				
Dividends received	6,122	654	6,776	6,789
Government Securities				
Interest received	1,690	-	1,690	1,690
Listed investments				
Dividends received	-	-	-	-
NSB Investment Account				
Interest received	261	13	274	340
Bank interest				
Interest received	1,219	-	1,219	2,862
	<u>£ 9,292</u>	<u>£ 667</u>	<u>£ 9,959</u>	<u>£ 11,681</u>

8. Analysis of expenditure on charitable activities

	Note	Unrestricted Funds £	Restricted Funds £	Total 2017 £	Total 2016 £
Direct charitable expenditure					
Grants payable	9	416	16,000	16,416	53,196
Other direct charitable expenditure	10	469,273	-	469,273	712,551
		<u>£ 469,689</u>	<u>£ 16,000</u>	<u>£ 485,689</u>	<u>£ 765,747</u>

9. Grants payable

	Unrestricted Funds £	Restricted Funds £	Total 2017 £	Total 2016 £
Under graduates	-	16,000	16,000	26,000
Post graduates	-	-	-	17,000
Awards	416	-	416	4,981
Subsea grants (Norway)	-	-	-	5,215
	<u>£ 416</u>	<u>£ 16,000</u>	<u>£ 16,416</u>	<u>£ 53,196</u>

Society for Underwater Technology
Notes to the Consolidated Financial Statements Cont/d
For the year ended 30 June 2017

10. Other direct charitable expenditure

	Unrestricted Funds £	Restricted Funds £	Total 2017 £	Total 2016 £
Accountancy	7,014	-	7,014	10,040
Auditor's remuneration	6,500	-	6,500	6,500
Bad debts	12,880	-	12,880	27,576
Bank charges	6,607	-	6,607	6,186
Branch admin	-	-	-	1,019
Conferences and seminars (Note 5)	59,176	-	59,176	151,649
Publications, journals and newsletters	43,430	-	43,430	72,709
Committee expenses	4,616	-	4,616	8,506
Computer maintenance	10,937	-	10,937	11,790
Depreciation	10,965	-	10,965	9,576
Exchange rate differences	(447)	-	(447)	1,238
Insurance	1,826	-	1,826	1,496
Lease of equipment	748	-	748	618
Marketing and advertising	14,270	-	14,270	85,258
Norwegian taxes payable	-	-	-	(13,283)
Postage	1,528	-	1,528	5,834
Professional fees	12,875	-	12,875	4,015
Professional fees, consultancy and administration (Norway)	5,178	-	5,178	(817)
Rent, rates, light and heat	48,111	-	48,111	46,983
Staff recruitment and training	613	-	613	5,765
Salaries	203,891	-	203,891	244,139
Stationery and office expenses	9,813	-	9,813	15,736
Subscriptions	867	-	867	1,392
Telephone	7,875	-	7,875	8,626
	<u>£ 469,273</u>	<u>£ -</u>	<u>£ 469,273</u>	<u>£ 712,551</u>

Included in accountancy above is £5,750 (2016: £8,140) payable to the auditors for non-audit services.

11. Analysis of support and governance costs

The charity initially identifies the costs of its support functions. It then identifies those costs which relate to the governance function. The table shown overleaf details the analysis of these support and governance functions.

Society for Underwater Technology
Notes to the Consolidated Financial Statements Cont/d
For the year ended 30 June 2017

11. Analysis of support and governance costs (cont.)

	General Support	Governance Function	Total	Basis of apportionment
	£	£	£	£
Auditor's remuneration	-	6,500	6,500	Governance
Accountancy	-	7,014	7,014	Governance
Bank charges	6,607	-	6,607	Wholly attributable
Committee expenses	462	-	462	
Computer maintenance	3,281	-	3,281	
Depreciation	3,290	-	3,290	
Insurance	548	-	548	
Lease of equipment	224	-	224	
Postage	153	-	153	Usage allocation
Professional fees	12,875	-	12,875	Wholly attributable
Rent, rates and heat and light	14,433	-	14,433	Wholly attributable
Staff recruitment and training	184	-	184	
Salaries	61,167	-	61,167	Allocated on time
Stationery and office expenses	1,963	-	1,963	Usage allocation
Subscriptions	434	-	434	Apportioned equally
Telephone	2,362	-	2,362	
Marketing	7,135	-	7,135	Wholly attributable
Exchange rate differences	(447)	-	(447)	Wholly attributable
Bad debts	12,880	-	12,880	Wholly attributable
	<u>£ 127,551</u>	<u>£ 13,514</u>	<u>£ 141,065</u>	

Where not otherwise stated, support costs as shown above have been calculated on a pro rata basis in line with the staff salaries allocation.

12. Staff costs

	2017 £	2016 £
Staff costs:		
Wages and salaries	178,607	209,089
Social security costs	14,855	18,393
Other staff costs	11,042	22,422
	<u>£ 204,504</u>	<u>£ 249,904</u>

The average number of employees, analysed by function was:

	2017	2016
Direct charitable activities	3	4
Management and administration of the charity	3	3
	<u>==</u>	<u>==</u>

The Trustees did not receive any remuneration or reimbursed expenses during the year (2016: £nil).
Total employee benefits of key management personnel amounted to £70,053 (2016: £69,798).

Employees earning more than £60,000 during the year:

	2017	2016
£60,001 - £70,000	-	1
	<u>==</u>	<u>==</u>

13. Taxation

The Society is a registered charity and, therefore, no tax liability arises on the results for the year to the extent that income and gains are applied to the Society's charitable objects.

Society for Underwater Technology
Notes to the Consolidated Financial Statements Cont/d
For the year ended 30 June 2017

14. Financial performance of the Society

The Consolidated Statement of Financial Activities includes the results of the Society's wholly controlled Norwegian Branch, the Society for Underwater Technology Norway NUF. The summary financial performance of the Society alone is:

	2017 £	2016 £
Income	339,892	410,972
	<u>339,892</u>	<u>410,972</u>
Expenditure on charitable activities	478,940	767,745
Total expenditure	<u>478,940</u>	<u>767,745</u>
Net income before transfers	(139,048)	(356,773)
Net gains/(losses) on investment assets	20,646	2,430
Total funds as at 1 July 2016	(118,402) 488,081	(354,343) 842,424
Total funds as at 30 June 2017	<u>£ 369,679</u>	<u>£ 488,081</u>
Represented by:		
Unrestricted income funds	172,235	284,653
Restricted income funds	197,444	203,428
	<u>£ 369,679</u>	<u>£ 488,081</u>

15. Tangible fixed assets

	Office furniture and equipment £	Computers £	Total £
Cost			
As at 1 July 2016	14,887	56,718	71,605
Additions	135	14,648	14,783
Disposals	-	-	-
As at 30 June 2017	<u>15,022</u>	<u>71,366</u>	<u>86,388</u>
Depreciation			
As at 1 July 2016	13,611	47,791	61,402
Charge for the year	282	10,683	10,965
On disposals	-	-	-
As at 30 June 2017	<u>13,893</u>	<u>58,474</u>	<u>72,367</u>
Net book value at 30 June 2017	<u>£ 1,129</u>	<u>£ 12,892</u>	<u>£ 14,021</u>
Net book value at 30 June 2016	<u>£ 1,276</u>	<u>£ 8,927</u>	<u>£ 10,203</u>

No fixed assets are owned by the Norwegian Branch.

Society for Underwater Technology
Notes to the Consolidated Financial Statements Cont/d
For the year ended 30 June 2017

16. Fixed assets investments

There are no fixed asset investments held by the Norwegian Branch, the notes below relate to the UK Society only.

16.1 Summary

	2017		2016	
	£ Cost	£ Valuation	£ Cost	£ Valuation
a) Government stock	19,859	19,564	19,859	21,244
b) Charities Official Investment Fund	50,141	204,528	50,141	182,348
c) NSB investment account	23,763	23,763	43,502	43,502
d) Listed investments	2,106	468	2,106	322
	<u>£ 95,869</u>	<u>£ 248,323</u>	<u>£ 115,608</u>	<u>£ 247,416</u>

16.2 Concentration of investments

	Unrestricted Fund %	Restricted Fund %	Total %
The concentration of investments may be analysed as follows:			
a) Government stock	8	-	8
b) Charities Official Investment Fund	74	8	82
c) NSB investment account	10	-	10
	<u>92</u>	<u>8</u>	<u>100</u>

16.3 Movements on investments

	2017 £	2016 £
Market value at 30 June 2016	247,416	244,664
Transfers/Disposals	(20,000)	-
Gains/(losses) on revaluations	20,646	2,430
Interest on NSB	261	322
Market value at 30 June 2017	<u>£ 248,323</u>	<u>£ 247,416</u>

17. Publications stock

	Group		Society	
	2017	2016	2017	2016
Books for resale	<u>£ 17,672</u>	<u>£ 27,878</u>	<u>£ 17,672</u>	<u>£ 27,878</u>

Society for Underwater Technology
Notes to the Financial Statements Cont/d
For the year ended 30 June 2017

18. Debtors

	Group		Society	
	2017	2016	2017	2016
	£	£	£	£
Trade debtors	86,801	51,329	85,367	43,962
Prepayments and accrued income	43,857	51,537	43,857	51,537
Other debtors	16,758	28,742	19,326	31,326
	<u>£ 147,416</u>	<u>£ 131,608</u>	<u>£ 148,550</u>	<u>£ 126,825</u>

19. Creditors: Amounts falling due within one year

	Group		Society	
	2017	2016	2017	2016
	£	£	£	£
Trade creditors	8,376	18,254	7,761	15,787
Deferred income	142,067	6,008	142,067	6,008
Social Security and Other Taxes	11,289	10,738	11,289	10,738
Accruals	12,328	39,496	12,328	39,496
Other creditors	2,518	1,902	1,325	1,902
	<u>£ 176,578</u>	<u>£ 76,398</u>	<u>£ 174,770</u>	<u>£ 73,931</u>

Deferred income included in creditors due within one year

	Group		Society	
	2017	2016	2017	2016
	£	£	£	£
Opening balance as at 1 July 2016	6,008	12,891	6,008	12,891
Deferred in the year	142,067	6,008	142,067	6,008
Released in the year	(6,008)	(12,891)	(6,008)	(12,891)
Closing balance as at 30 June 2017	<u>£ 142,067</u>	<u>£ 6,008</u>	<u>£ 142,067</u>	<u>£ 6,008</u>

20. Limited liability of members

In accordance with the Memorandum and Articles of Association, Fellows, Individual Members and Corporate Members (but not Associate Members and Student Members) are deemed to be Members of the Society within the context and as such have a limited liability of £5 per member in the event of the Society being wound up.

21. Restricted funds

	Balance	Incoming	Movement in Fund	Balance
	30 June 2016	Resources	Expenditure and Gains/(losses)	30 June 2017
			Transfers	
Society for Underwater Technology				
Educational Support Fund	<u>£ 203,428</u>	<u>7,873</u>	<u>(13,857)</u>	<u>197,444</u>

The above fund was set to provide educational grants to students. The amounts received as stated in the Statement of Financial Activities represent amounts donated by corporate and other members of the Society.

Society for Underwater Technology
Notes to the Financial Statements Cont/d
For the year ended 30 June 2017

22. Analysis of group net assets between funds

	Unrestricted Funds £	Restricted Funds £	Total Funds £
Fund balances at 30 June 2017 are represented by			
Tangible fixed assets	14,021	-	14,021
Investments	228,559	19,764	248,323
Current assets	128,962	177,680	306,642
Current liabilities	(176,578)	-	(176,578)
	<u>194,964</u>	<u>197,444</u>	<u>392,408</u>
Total net assets	<u>194,964</u>	<u>197,444</u>	<u>392,408</u>
Unrealised gains included above on investment assets	<u>138,753</u>	<u>13,702</u>	<u>152,455</u>
Reconciliation of movement in unrealised gains on investment assets			
Unrealised gains at 30 June 2016	120,250	11,559	131,809
Total gains/(losses) in year	<u>18,503</u>	<u>2,143</u>	<u>20,646</u>
Unrealised gains at 30 June 2017	<u>138,753</u>	<u>13,702</u>	<u>152,455</u>

23. Operating leases

At 30 June 2017, the Society was committed to making the following minimum payments under non-cancellable operating leases expiring:

	Group		Society	
	2017	2016	2017	2016
Within one year	-	34,455	-	34,455
Between 2 and 5 years	<u>70,046</u>	<u>38,018</u>	<u>70,046</u>	<u>38,018</u>
	<u>£ 70,046</u>	<u>£ 72,473</u>	<u>£ 70,046</u>	<u>£ 72,473</u>

24. Related party transactions

There are no related party transactions in the current and prior year requiring disclosure in the financial statements.