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Pieter Schelte Heerema: the spirit of invention

27 April 2008 marks the 100th anniversary of the birth of Pieter Schelte Heerema. With the help of former colleague Ab Schreuders and the *OE* archives, David Morgan looks back over the life and times of this legendary offshore industry figure.

Variouly described as 'complex', 'inspirational', 'aloof', 'generous', 'patient', 'charismatic', 'impulsive' and 'sometimes rather difficult', Pieter Schelte Heerema (PSH) was clearly something of an enigma. The Dutch entrepreneur may not always have courted popularity, but his ability to make things happen combined with the occasional flash of brilliance in a prodigious stream of ideas earned him widespread respect and admiration.

'Thinking out of the box' and 'can do' could well have been phrases coined for this Delft-trained civil engineer with a keen eye for a business opportunity. PSH had, as one early commentator put it, 'a seven-league imagination' and used it to ride roughshod over the engineering and business conventions of his day. To him, boundaries were there to be broken. No challenge was too big; no idea too extreme. And for his funeral in Wassenaar in 1981, the movers and shakers of a grateful international oil & gas community turned out in force to pay homage to a man many had come to regard as 'King of the North Sea'.

So where did it all begin?

There aren't too many close contemporaries still around to ask these days, but in Ab Schreuders *OE* found an articulate former colleague whose recollection of PSH goes back 70 years. He also, as it happens, played a small but crucial part in the creation of what would become the Heerema marine contracting and fabrication group – by acting as guarantor for PSH's first, modest barge purchase.

Now 88 but still razor-sharp, Schreuders says he first encountered PSH in the Dutch West Indies in the 1930s. Amsterdam-born PSH, already well established in the classically Dutch engineering specialism of port and harbour work, was working in the Curaçao branch office of Netherlands Harbour Works, whose biggest client in the former Dutch colony was the Shell oil refinery.

With some 25% of Holland's labour force unemployed at the time, the young Ab Schreuders was looking to kick-start his career abroad. In 1936, he also headed for Curaçao and found work with another of the refinery's Dutch contractors.

A little later PSH and



Pile driving barge Rotterdam handling a 36in prestressed concrete pile in Lake Maracaibo in the 1950s.

Schreuders ventured 'upstream' together, as employees of a contracting consortium engaged in offshore infrastructure work associated with Shell's latest oil finds in Lake Maracaibo, Venezuela, and the crude's transportation to Curaçao. [Shell would not be served by its own refinery in Venezuela until some years later, following the Second World War, and again PSH was involved in its construction.]

'He was a really exceptional man, I can tell you,' recalls Schreuders today at his home in Wassenaar, an affluent suburb of The Hague. 'I knew him quite well – he was the boss in Venezuela. He was a very good civil engineer but on top of that he had a tremendous feeling for the practical side of these jobs.'

'He was not always easy to get on with, and some of his political views were unpopular with many of his colleagues, myself included,' adds Schreuders.

'Technically, I learned a lot from him and had the greatest respect for him, but he was not an easy-going man and could sometimes be very difficult. He either liked you very much, or he didn't like you at all, there seemed to be no in-between. I could get along with him but many didn't.'

'In Curaçao, and then working together in Venezuela for a year and a half just before the war, he was pro-German at that time. He admired the achievements of their engineers. He was very worried about the rise of world Communism and believed the Germans would be able to halt this. He got involved with a Dutch political movement with German leanings and talked about it often, but the rest of us weren't much interested – we had left Holland years before and were all just trying to make a living.'

The German invasion of Holland in May 1940 brought an abrupt end to their relationship and it was to be another ten years before Schreuders and PSH met again. Their experiences in the interim were in stark contrast.

On his return to a now occupied homeland, PSH linked up with a military civil engineering outfit attached to the German army's foreign service. Midway through the war he is known to have recanted his pro-German sympathies. For the crime of joining a foreign army, however, he would be incarcerated for several months by the post-war Dutch authorities before standing trial, whereupon he was acquitted and quickly released.

Schreuders meanwhile – then still only 20 – had been sent to Surinam as a militarised civilian and spent a year and a half working on loading jetties and other infrastructure for strategically important bauxite mines before joining the forces proper and heading to the US

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for training. In December 1943 he was one of 15,000 men shipped on the *Queen Mary* from New York to England, where he worked initially on the concrete caissons for the invasion forces' Mulberry Harbour facility before taking part in the Normandy landings. He stayed militarised for a while to assist with post-war reconstruction of the port of Rotterdam before rejoining his old firm, Nederhorst.

The company still had operations in Curaçao, which Schreuders continued to visit every six months or so. 'In the early 1950s, unbelievable as it seems, I came down for breakfast at my Curaçao hotel one morning and noticed Pieter Heerema sitting quietly in the corner,' he says. 'I was flabbergasted.'

Starting over

In conversation it transpired that PSH, seeing no immediate future in his homeland, had decided to build a new life elsewhere. In 1947, with a thousand dollars to his name, he had headed back to Venezuela and set up a small construction company near Lake Maracaibo. 'That to me symbolises the courage of the man,' observes Schreuders today. 'He was very stubborn, a real fighter.'

The early going was very hard, though. Recalling those days in an interview with *Offshore Engineer's* John Irish some years later (*OE* June 1976), PSH admitted: 'It was a bad time, a bad social climate. I had

very little money, and for many years I could barely feed my family.'

The family on his return to Maracaibo consisted of his wife Erna and two young sons: Ruurd, the eldest, who was destined to become a Delft University mining professor and has now retired, and Edward, who has enjoyed business success in his own right with Allseas, the offshore pipelay company he established in 1985. Two more successful sons – Pieter, who runs the Heerema group today, and Hugo, who heads up Bluewater Energy Services – came along later, as did a daughter, Anneke, who died five years ago. A fifth son, Erik, was born after PSH had left Venezuela.

Schreuders' chance reunion with PSH in the early 1950's came while the latter was in Curaçao trying, without much success, to raise funds to buy a small, flat-bottomed barge from the local harbour company and put it to work in Lake Maracaibo. 'It was only a 60t barge, typical of the area, but he couldn't raise the 6000 guilders needed and the local banks wouldn't help,' recalls Schreuders. 'I took him to my company's bank and the loan was secured with my personal guarantee. He paid it off in six months; he was a man of his word.'

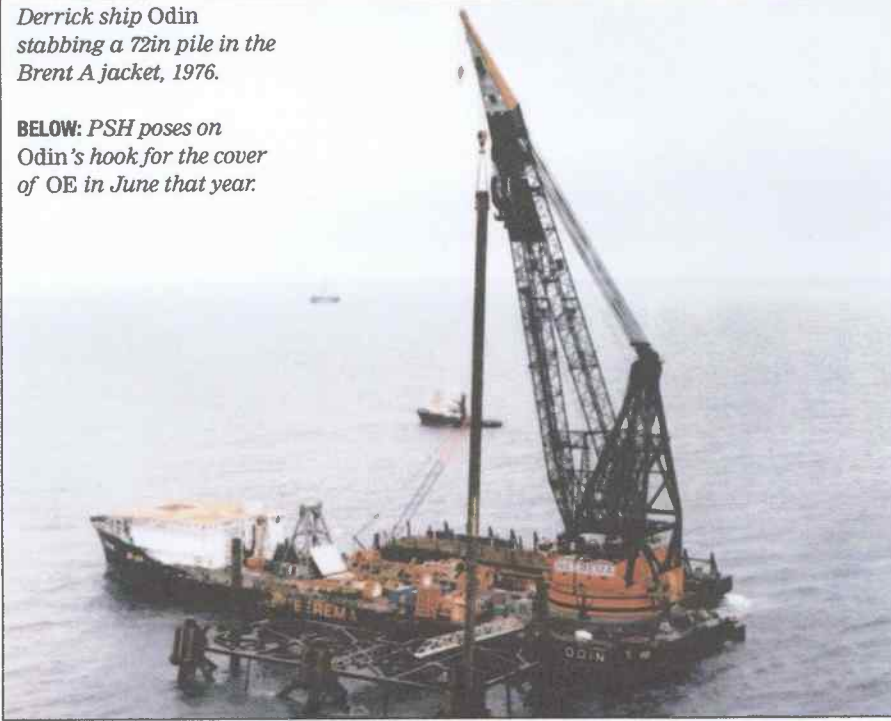
In the late 1950s, buoyed by a growing reputation among the Maracaibo oil community for getting their tougher jobs done efficiently and with the minimum of fuss, the fledgling Heerema company started looking around for bigger



Crane ship Thor setting a 2000t lift on Forties FA platform in the North Sea, 1974.

Derrick ship *Odin* stabbing a 72in pile in the Brent A jacket, 1976.

BELOW: PSH poses on *Odin's* hook for the cover of *OE* in June that year.



challenges and prizes. It had become apparent to PSH and others that steel foundations were generally inadequate for the corrosive waters of Lake Maracaibo; concrete was the way forward. While US specialist Raymond International, working with Brown & Root, developed hollow prestressed concrete piles that were composed of short sections strung together, PSH came up with his own monolithic hollow prestressed concrete pile design that was incomparably strong and would penetrate as deep as 70m into the soil.

He successfully developed and marketed the system and these long piles quickly found favour among Maracaibo oil companies. Over the years, his company installed hundreds of drilling and production platforms in Lake Maracaibo, founded on his concrete piles. His biggest coup at the time, however, came in persuading a contracting consortium about to build a 9km bridge over Lake Maracaibo – still today the 12th longest in the world – that they should use his reinforced concrete pile design, his floating equipment and his steam hammers (to be acquired from Menck) for the installation of the 1000 or so large foundation piles required.

PSH was making limited headway trying to persuade engineers arriving for early site inspection work that he was ready for this huge step-up, but the people he really needed to influence were their bosses back at head office in Frankfurt. He made a call to an old acquaintance in Holland.

Ab Schreuders takes up the story again. 'The company I worked for was at that

time leading the consortium working on the first big tunnel under the IJ canal in Amsterdam, and we brought in two German companies, Philip Holzmann and Wayss & Freitag, for their expertise in large bored piles and compressed air working. I got to know them quite well and it so happened that they were the same two companies leading the Maracaibo bridge consortium.

'Having made the necessary introductions, I went with PSH to Frankfurt so that he could put his case to the lead engineers and senior board members of all five participating contractors. His presentation was unbelievable. He started at 10am and, speaking in fluent German, carefully mapped out every detail of how he would handle this crucial sub-contract. By 2.30pm, following a break for lunch, he already had the job in his pocket. Quite remarkable.'

Homecoming

In the early 1960s PSH returned to Holland, while maintaining his company active in Venezuela. It was the time of huge gas discoveries around Groningen. The Heerema business antenna was up and very much tuned in to the North Sea, although he could scarcely have imagined then just how big a prize was on offer.

Installation barges around in those days were based on early Gulf of Mexico designs, but he saw 'ship-shape' as the way to go in the rough North Sea conditions, at least at that point in time. He entered into a joint venture with Brown & Root and in 1963 built the *Global*

Adventurer – acknowledged as the world's first ship to be converted into a crane vessel (330t lifting capacity).

Paradoxically, his first entrepreneurial venture on the Dutch continental shelf had nothing whatsoever to do with hydrocarbons. Working alongside two partners, one of whom was the shipbuilder Cornelis Verolme, he installed a fixed platform which in 1964 served briefly as the base for Dutch 'pirate' radio and TV broadcasts before the authorities shut it down.

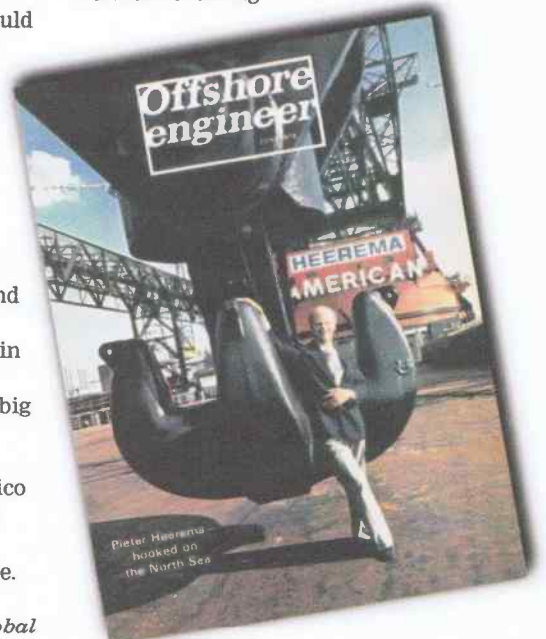
His joint venture with Brown & Root lasted only until 1966 at which point PSH really got into his North Sea stride, starting to assemble his own distinctive fleet of vessels – each more capable or versatile than the last. For the best part of two years, he worked up increasingly sophisticated designs for ship-to-barge conversions.

Then, in 1969, he unveiled *Challenger* – a converted 30,000dwt tanker with its beam widened for stability – explaining that it was so-named 'because we challenged the idea of flat-bottom barges'. This was the first unit to boast an 800t revolving crane.

Two years later he put *Champion* into service with a lifting capability up to 1200t.

In 1974 *Thor*, a 50,000dwt tanker conversion, lifted a 1900t module at 32m radius on BP's fast-developing Forties field on the UKCS.

In 1976 he raised the bar again with *Odin*, converted from a 53,000dwt tanker with its beam widened from 31m to 43m. For this magazine's front cover in June that year, *OE* photographer Mike Lawn created a telling and enduring image of PSH resting on the hook of *Odin's* record-setting 3000t American Hoist & Derrick revolving





The giant semisubmersible crane vessels – Balder (left) and Hermod (right) – in their North Sea prime. Balder is pictured installing two modules simultaneously on the Ninian Northern platform, 1979.

crane. Cutting its teeth on Brent Alpha installation work for Shell Expro that summer, the vessel would also bring into play what for a time was the world's largest piling hammer, with a maximum rated energy of 1.5 million ft-lbs.

Semi conscious

Just a year later, details emerged of what is widely acknowledged as the PSH masterstroke, personally conceiving and then ordering two giant semisubmersible crane barges (*OE* June 1977) that would revolutionise offshore installation practice and make PSH a very wealthy man indeed. Asked why he was virtually putting his existing fleet out of business in North Sea terms, he replied: 'We thought it better to do this ourselves than let our competitors do it for us.'

Getting in first was a clear imperative, but nonetheless building the semis at that time represented a very stern test of nerve. Business in the North Sea boomed after the 1973 oil crisis, but it was not exactly brisk when the first of the semis, *Balder*, became available in 1978, followed by the nearly identical *Hermod* in 1979. But PSH never wavered in his belief that the semis' time had come and the two held sway over a burgeoning North Sea steel platform installation market for years to come, breaking heavy lift record after record in the process.

One of them alone would have made very substantial inroads into that sector; having two meant PSH could pretty well dominate it. Typical of the man's impulsive nature and bold decision-making was the fact that even his closest colleagues had no inkling that he was contemplating a second barge until they were sitting around the negotiating table with Japanese fabricator Mitsui. 'They quoted 250 million guilders for *Balder*; then, out of the blue, he asked for – and got – a 10% discount for ordering two,' says Schreuders, who was among the guests at *Balder*'s christening – 'a hell of a party' – in Flushing.

With the more stable semisubmersible hull shape, the new derrick barges offered hitherto undreamt of workability and lifting and piling capabilities. They were able to work at two pile clusters at a time and each had a dual-lift capacity of 5000t. Locating the heavy, IHC/Gusto-designed cranes in the corners made a big area of deck available to carry payloads up to 8000t.

Following various upgrades the two vessels now have lift capacities varying from 6300t to 8100t. After PSH died, two subsequent arrivals on the semisubmersible heavy lift scene – McDermott's *DB 102* (now Heerema's *Thialf*) and rival Saipem's *S7000* – would make lifts of 11,000t, but *Balder* and

Hermod had long since secured their place in offshore history. With their impact on module size, module support frame layout and piling design, they expanded the horizons of offshore platform designers at a crucial evolutionary stage for the North Sea.

Throughout all this, Ab Schreuders says he stood back and watched in awe. He retired almost 30 years ago from Nederhorst, which was subsequently taken over by HBG and is now part of the BAM group, and accepted a Dutch waterways ministry invitation to chair a joint commission overseeing the construction of tunnels and other infrastructure, a role to which he was to devote the next 12 years. Schreuders nonetheless stayed in regular touch with PSH, and indeed was one of the last people to speak to him before he died.

Like father . . .

When Allseas came into being, Schreuders agreed to serve on its advisory board, becoming in the process a business mentor to the PSH son who, by common consent, inherited the old man's engineering gene. 'Edward Heerema has done a terrific job with Allseas,' says Schreuders, who belies his age by turning up for advisory board meetings even today. 'I admire him just as I admired his father, and of course he followed PSH into



'I never met a civil engineer with a more practical streak and such a capacity for new ideas – a really exceptional man.'

Ab Schreuders

Delft's civil engineering school and became his right-hand man for many years. Engineering-wise and business-wise, he fits exactly in the picture of his father.'

Edward Heerema clearly shares the PSH love of scale too. The Allseas fleet already boasts the world's largest pipelayer, *Solitaire*, and his latest mega-project is a Euro1.3 billion multi-role newbuild set to dwarf all others in the offshore marketplace (*OE* June 2006).

The vessel will be named *Pieter Schelte* and he is determined that it should live up to his father's name when it goes to work around 2011. 'My father was an immensely creative engineer, always full of ideas – a lot more than was physically possible to realise,' he says. 'I was determined to build up Allseas in that style: taking on technical challenges, doing things other people can't do, keeping ahead of the competition.'

Schreuders adds: 'I never met a civil engineer with a more practical streak and such a capacity for new ideas than Pieter Schelte Heerema. And just like his father, Edward spends many hours in his company's design office with his designers working over ideas he has sketched out at home the previous weekend.'

Back in 1976, Pieter Schelte Heerema described himself as 'basically a designer', happy to 'just invent, to develop, to go beyond the frontiers of knowledge'.

He also maintained that he was 'too impulsive, too optimistic to be a businessman', a rare misjudgement in light of his subsequent achievements! **OE**



The PSH name will live on through Allseas' next newbuild, due in service around 2011. The proposed mega-vessel Pieter Schelte will combine installation, decommissioning and pipelay capabilities and is pictured (top to bottom) in jacket lifting, topside removal and jacket skidding mode.



Pieter Schelte Heerema in celebratory mood with Ab Schreuders (above) and son Edward in 1978.