

Chapter 3

Before the disaster

Ownership and management:

The two “limited partners”- companies Stavanger Drilling (I and II) contracted the two identical Pentagon rigs *Alexander L. Kielland* and *Henrik Ibsen* - both delivered by the French shipyard CFEM in 1976. Stavanger Drilling I A/S & Co (Ibsen) and Stavanger Drilling II A/S & Co (Kielland) were established in April 1974. The goal for the owners was to contract two floating drilling rigs for operation in the North Sea.

It was the shipping company *Brødrene Olsen AS (The Olsen Brothers Ltd.)* that ordered Ibsen and Kielland through the shipping limited company *Solvang* in 1973. In addition to this limited company, the company *A Gowart-Olsen & Co* functioned as the management company, with Sverre Bjørn-Nielsen as executive manager.

1 ***What background and expertise did the owners and managers of Stavanger Drilling have in relation to the operation of mobile facilities?***

The **French report** describes the company as follows:

"1. Before "Henrik Ibsen" and "Alexander L. Kielland" were ordered, the management of SD²⁶ (Stavanger Drilling) had no experience with oil extraction at sea. They then acquired capital to start this new business. Each of the platforms²⁷ legally belonged to different companies, and the company "Stavanger Drilling II A/S & CO" was created exclusively to operate P-89 (ALK).²⁸ Companies that start up and operate only one ship are generally regarded as inexperienced within the maritime industry.

²⁶ The French report often uses the abbreviation SD – Stavanger Drilling

²⁷ In this context, an oil platform is the same as an oil rig

²⁸ The French report often uses the abbreviation ALK for Alexander L. Kielland

2. *The technical department in Stavanger Drilling had only one engineer, Janssen.*²⁹ *He worked for the first time on marine platforms and assumed responsibility for two of them.*

3. *... SD's managing director Sverre Bjørn-Nielsen (was) recently convicted of tax evasion (he had concealed an income of approximately 200,000 francs). Phillips then noted on August 9, 1984 (document P-4-7) that this judgment had no connection with the accident. Nevertheless, it is the case that SD's managing director was found guilty of lying to the court. One can therefore wonder how honestly he answered the experts (see point 4.1.1.1.4 above)."*³⁰

The shipping company *Brødrene Olsen AS* was an established and professional shipping company and had the function of management company for Kielland and Ibsen.

There are two factors that weaken this professional competence:

Firstly, *Gowart-Olsen*³¹ entered the rig market for the first time. Ibsen and Kielland were designed as semi-submersible floating rigs and were therefore classed as vessels. Such rigs, however, pose completely different operational challenges than traditional ships, and here the shipping company had no experience from previous operations. This applied to several Norwegian shipping companies at time. The French experts point to and criticize the shipping company's *"lack of experience when it came to platform operations"*.³²

They also criticize the understaffing of the rig and many other errors in the operation of the rig.

Secondly, there are reasons to question whether this form of ownership – “limited partnership”³³ – was suitable to ensure proper operation. This form of ownership came about so that it would be attractive for shipowners to invest in the oil business through very favourable tax rules. The capital requirement was significantly greater than when building ships. An established shipping company relies on technical and maritime expertise. But a limited partnership with financial owners?

²⁹ Janssen – here they refer to the technical director Christen Magne Jensen

³⁰ The French report, 4.2.4.1

³¹ *Gowart-Olsen* – part of the shipping company *Brødrene Olsen AS*

³² The French report 3.4.3.4.8.2

³³ “Kommandittselskap” - “Limited partnership” is not the same as “Limited company”

Even though the insurance company *Storebrand* had a significant stake in the rig, it was nevertheless *Storebrand* that brought the two rigs into the Norwegian Oil Insurance Pool as insurance objects.

In addition to *Gowart-Olsen* (20%) and *Storebrand* (20%), the shipping companies *Brøvig*, *Mosvoll*, *Klaveness*, *Selvig*, *Jebsen* and the shipbroker company *K. S. Platou* participated.³⁴

This meant that several recognized shipping companies were represented on the board of *Stavanger Drilling*. Here there was solid shipowner expertise. But it doesn't help much when the company understaffs both the rigs and its own technical department.

New management company

Sverre Bjørn-Nielsen established *Stavanger Drilling AS* on 29 February 1980 - four weeks before the accident - as a separate management company for the two rigs, with himself as managing director and the former telegraph operator Alf Kaasen as deputy managing director. The operations of the new management company *Stavanger Drilling AS* were thus directly in competition with the *Gowart-Olsen* system, according to Carsten *Gowart-Olsen*.³⁵

When the board of *Gowart-Olsen AS* discovered what Sverre Bjørn-Nielsen was up to, he was fired from the shipping company on 9 June 1980. He nevertheless continued as head of *Stavanger Drilling AS* until the end of the 80s, when the company was liquidated.

There are good reasons to ask why Sverre Bjørn-Nielsen established the new operating company, just four weeks before the accident, contrary to the shipping company's interests. This move led to the two rigs losing a recognized shipping company as management company.

The new contract with Shell meant that *Kielland* would switch to drilling assignments in the British sector, with much higher day rates. Ibsen was to take over the flotel assignment for Phillips on the *Ekofisk* field.

It must be investigated in more detail whether the establishment of a new operating company had a direct connection with the Shell contract. *Kielland's* assignment for Shell was to start on 1 April. Just four days before, the rig broke down.

³⁴ Smith-Solbakken m.fl., *CRUDE OIL 1*, p 227

³⁵ Tungland, *Rederidynastiet / The Shipping Dynasty*, Jæren Publishing House 2018

2

How was this competence / lack of competence assessed by the operating company Phillips Petroleum Company Norway (PPCN)?

The accommodation platform (often called “flotel”) Alexander L. Kielland was leased throughout its short lifetime by the operating company **Phillips Petroleum Company Norway** (hereafter Phillips) and used as a flotel in several locations on the Ekofisk field, in the southern Norwegian sector of the North Sea. Most of the approximately eighty drilling and service installations in the Norwegian sector were located in this area in 1980. The last location of Kielland, as of August 1979, was at the fixed drilling platform *Edda 2/7 C*. Kielland was connected to the Edda platform by a footbridge.

The operator Phillips was and is basically responsible for everything that happens in their area of operation. When other actors are hired to take care of various tasks related to the activities, the overall responsibility still lies with the operator. This responsibility thus also applied to operations and safety at Kielland.

28

It is so far not known whether the operating company Phillips specifically assessed the competence - or lack of competence - of Stavanger Drilling. Apparently, no such assessments were made. It is also important to remember that the entire offshore business at this time was characterized by haste and limited expertise.

Floating rigs fell under different legislation than fixed installations, and there are many indications that the operator took little or no statutory responsibility for the operation of such rigs. Neither Phillips nor other private companies such as Veritas³⁶ and Storebrand have given access to their archives. As we shall see, this has been, and still is, a significant reason why many questions still remain unanswered.

Measures to get further in the search for answers are therefore continued efforts to gain full access to private archives.

³⁶ Veritas – «Det Norske Veritas» (DNV) was the class certificate company for Kielland – parallel to Lloyds Register.

Interaction between shipping company / shipyard / constructor / operator

It is solidly documented by the Norwegian Commission of Inquiry that the hydrophone attachment in the middle of the D6 bracing had a welding defect. The French Commission also agrees with this. While the Norwegian Commission believed that this was the cause of the fatigue crack, the French Commission believed that the fatigue fracture occurred independently of this welding defect.

When it was decided that the rig be used for residential purposes and not for drilling purposes, as it was designed for, the service contract with constructor Forex Neptune was cancelled.

3 What interaction and cooperation took place between operator and shipowner on the one hand, and constructor and shipyard on the other, - after the rig was delivered in 1976?

Interaction and cooperation between operator Phillips and owner Stavanger Drilling appear to have been limited to economy and finances. Phillips interfered very little in the operation of Kielland, but they approved or rejected recommendations from platform managers, - if it cost money or affected production.³⁷ A concrete example: Platform manager Torstein Sæd wanted in the autumn of 1979 to raise the rig to inspect the lower horizontal bracings, including D6. The Phillips manager at Edda refused, as this would mean a production stop for the time that raising, inspecting and lowering would take.³⁸

Interaction and cooperation with the shipyard and constructor did not exist after the rig was delivered in the summer of 1976. Both Kielland and Ibsen were built as drilling platforms, but Kielland was used throughout its short life of less than 4 years as an accommodation platform – a flotel. The market for drilling rigs was saturated, while demand for

³⁷ Platform manager = captain.

³⁸ Chief Leif Barkved, sworn statement 1986, Aftenbladet 28.9.2020

accommodation platforms was still high. Immediately after the delivery of Kielland in 1976, large containers were placed on deck to serve as a residential and service section on four floors. The containers were assembled in several phases without the involvement of the constructor or CFEM shipyard, and most of the work was done out in the North Sea. The rig's constructor, Forex Neptune, also offered operational training by its own crew, but this was rejected by Stavanger Drilling. This was unusual. Most owners of new rigs carried out training via the constructor and shipyard in operation, safety and technical installations to ensure that the crew members who eventually took over were thoroughly trained and had sufficient competence.

The French experts state that:

"No maintenance agreement was entered into for the platform, neither with Forex nor any other company. The experts also regret for this, taking into account Stavanger Drilling's lack of experience when it came to platform operations." ³⁹

In summary, the answer is that Phillips overruled the shipping company and the captain if they lost money on the captain's decisions on internal inspections. And that interaction between the shipyard and constructor and the shipping company Stavanger Drilling ceased upon delivery of the rig in 1976.

If today's ConocoPhillips opens the archives for inspection, we will be able to get more information about these conditions.

4

Did the hydrophone/sonar have tasks of a military/defense nature in addition to position calculation for the rig?

The background for this question is the Cold War. The submarine issue was constantly at the forefront of public debate and an important matter for the Norwegian Defence Forces. It must be assumed that the Norwegian Defence Forces, in collaboration with NATO and other Norwegian authorities, took various measures to secure the installations on the Norwegian continental shelf. Monitoring of submarine activities from installations in the North Sea is

³⁹ The French report, 3.4.3.4.8.2

therefore likely. The hydrophone in the horizontal underwater D6 bracing was a tool for positioning the rig. Since the rig was not used as a drilling rig, it is possible to imagine that the Norwegian Defence Forces might have had the opportunity to install a sonar or similar instruments to reveal any submarine activity. There is so far no documentation linking Kielland to such surveillance. There is also no reason to believe that any installations for listening or monitoring underwater activity had any real impact on the operation of Kielland.

Operations

Both the Norwegian and the French Commissions assessed various issues relating to the operation of the rig.

5 ***How often were stability calculations carried out, and which form was used for such calculations?***⁴⁰

Unknown.

The Norwegian Commission has reproduced a deficient stability overview for 27 March 1980, based on the outgoing captain's memory.

The Veritas archives will be a central source for answering this question. As a private company, Veritas has not given access to the archives.

6 ***Was the derrick and drill block considered in stability calculations?***

Uncertain. It is claimed by some that the drill block was pulled up in the tower. If so, this would greatly weaken the stability after the rig tilted to 30-35°. Survivor Leif Wiig Abrahamsen from Stavanger Drilling worked on loading drilling equipment that day, and he states that the drill block was in the rail passage, still on the drill deck.⁴¹ This should be

⁴⁰ Kielland Conference report 2017, p 16

⁴¹ Fanebust p 46

investigated further with the rest of the surviving crew, and with Professor Emil Aall Dahle who prepared the stability report for the Norwegian Commission.

7

Why were stability analyzes conducted for the Commission classified?

The entire investigation process in 1980-1981 was closed to the public. Both the stability report and other reports and studies that the Commission brought in were classified and sealed.

The stability report was written on behalf of the Commission by dr.ing. Emil Aall Dahle. It became publicly known in 2017, after an archive search carried out by Marie Smith-Solbakken at UiS. Here it is documented that the disaster had more than one cause. The Norwegian Commission writes in its report:

"When it comes to the operational conditions, there has been inadequate follow-up of the instructions on closing openings on legs ⁴² and in the deck construction. Based on the importance this had for the filling process, this deficiency must be considered a contributing factor to the scale of the accident." ⁴³

This applies to both water inflow into legs C and E with open doors, in addition to open doors in the superstructure. It is suggested that if the doors had been closed as required by the regulations and the operations manual, the final capsizing would have taken around one hour. This would have saved many lives. The French experts suggest that the capsizing would have been delayed with up to two hours. Here, reference is also made to question 40 in this book.

In my opinion, the Norwegian Commission's most important concern was to direct the spotlight on one matter: The bad welding in the hydrophone holder in the D6 bracing. Thus, the responsibility was sent out of the country and to France. The Commission only included a limited and cautious summary of the stability report. I think it is reasonable to assume that

⁴² The rig had five legs, also called legs or shafts.

⁴³ NOU 11:1981 p 117

the publication of the stability report in its entirety in 1981 would have disturbed this matter, and so it was classified.

8

What control systems were established on board the platform?

Rules and requirements for floating rigs come under the Norwegian Maritime Directorate. These rules were generally part of the management system both on Kielland and on all other floating rigs in the Norwegian sector of the North Sea. In addition, the classification institution Veritas determined the requirements and regulations for each individual rig that they classified.

That the operating manual is to be regarded as instructions is evident from the Norwegian Maritime Directorate's note on the Ship Certificate for Kielland. There it is stated that the platform *"must be operated in accordance with the operating manual"* and approved stability calculations. Responsibility for following up on the instructions in the operations manual rests with the shipowner and the platform manager (captain). ⁴⁴

The Norwegian Commission emphasizes in chapter 3.1.4.1:

"The integrity of the platform during operation depends on the strength that is built into the construction, and that the operational prerequisites, as laid down in the operating manual, are met... The responsibility for follow-up during operation rests in the first turn on the crew. It must be ensured that the operations are carried out in accordance with the operating manual." ⁴⁵

The operating manual

"Stavanger Drilling operated far outside the operational requirements and lacked large parts of the operational management system." ⁴⁶

Ship engineer Nils Gunnar Gundersen, with long operating experience from the pentagon rig "Drill Master", is highly critical of Stavanger Drilling's operation of the rig. When it was

⁴⁴ NOU 11:1981 p 107

⁴⁵ NOU 11:1981 p 50

⁴⁶ Kielland Conference report 2017, p 19

delivered in 1976 by CFEM, the operating manual was included. This is often called the Operations Manual but was more of a complete technical manual. It was developed by Forex Neptune and dealt with a number of operational guidelines, primarily for operating the rig as a drilling platform. Since the rig was not used as a drilling platform, it was the shipowner's responsibility to provide an updated operating manual that was suitable for the purpose.

The French experts were asked by the court to assess the quality of the operating manual. They write in their report:

"The experts largely share DnV's assessment in report no. 80-0392 of 29 May 1980 (document N-8). Below is a partial reproduction:

"The operating manual of "A.L. Kielland" is a very comprehensive work where it seems that every conceivable thing has been taken care of. When it comes to stability, everything that according to the rules must be included is included. But this substance is so extensive that the important things are drowned in less important things. This manual can be nice to have in the shipping company's office, but on board there should be a manual that is more practically oriented." ⁴⁷

34

In several articles, Nils Gunnar Gundersen has described the management system that was developed by Forex Neptune for the operation of "Drill Master". Forex had an operating contract for "Drill Master" for four years. According to Gundersen, the manual contained a number of technical details, but was weak on specific procedures - how to carry out the specific actions. Gundersen therefore created a more detailed operating manual with necessary procedures for "Drill Master". Stavanger Drilling received an offer for two copies for NOK 50 000, but this was apparently too expensive for them.

The manual for Kielland contained technical information, design criteria and procedures for anchoring, ballasting and other operational conditions.

The verdict from Nils Gunnar Gundersen is harsh:

"Lack of knowledge among the management and leadership in Stavanger Drilling, as well as a lack of management system on how the two platforms (Kielland and Ibsen, ed.) should be operated in accordance with the operational conditions specified by

⁴⁷ The French report, 3.4.3.5.9

Forex Neptune, have undoubtedly, as I see it, played the most important part in the cause of the fatal disaster.”⁴⁸

Several of the crew members perceive the strong criticism of Stavanger Drilling not only as a criticism of the management, but also a criticism of the crew's use and operation of the platform. This is considered as unfair and unreasonable. I concur.

9, 10, 11, 12 and 13

- What adaptations to drilling tasks were carried out, and how was cargo secured in this context?

- Who was responsible for repairs and modifications being able to take place on the platform?

- Why weren't the doors closed according to the regulations?

- Drilling equipment was taken on board without being secured, ref. the closed stability report and several documents in the Commission which show that this was not secured. Why was the deck cargo not secured/seaworthy?

- The platform was messy, chaotic, with open doorways and unsecured cargo. What were the reasons for breaking the rules and who was responsible for the fact that the platform was not made seaworthy as it should have been according to the regulations?

Question 9: There was hectic activity on board the last few days. Drilling equipment with which the rig was equipped from the yard in 1976 was still on board, below the main deck. Oddbjørn Lerbrekk (crew member) stated that there was a lot of equipment in the bag compartment. In addition, lots of equipment was transported to the rig with supply boats, which were loaded onto the deck without securing it. Unsecured containers slid on the deck as the rig tilted, killing several. Magne Sildelid, a professional maritime officer who was new on board, reacted to the fact that cables and pipes went through doors that should have been closed. This is confirmed by several of the permanent crew: Oddbjørn Lerbrekk,

⁴⁸ Nils Gunnar Gundersen, email to the author 24.2.2023

Ragnvald Ofte and Kåre Magne Kvåle.⁴⁹ Several extra welders were on board, and we know that welding was done on bracing D4 - and perhaps more bracings. A new and significantly heavier BOP (blow-out preventer) was to be fitted, several hatches were to be welded. Both the Norwegian and the French Commission confirm that a large quantity of equipment was not secured.

Question 10: Stavanger Drilling's management at the head office in consultation with the platform captain were responsible. Phillips had overall responsibility but appear to have limited its involvement to matters involving costs and temporary shutdowns. See question 2.

Questions 11, 12 and 13: On the 27th of March 1980 there were only four days left until the rig was due to move to the Fulmar field in the British sector. The contract with Phillips would be transferred to Henrik Ibsen, while Kielland would now be used as a drilling platform. This change required extensive work on board. The drilling system, the tower, large quantities of drilling equipment had to be prepared, while the temporary housing section - which the guests often called "Bangladesh" - had to come off.

The uploading of drilling equipment, temporary storage on deck and extensive work to convert the rig to drilling are apparently the reasons for the open doors. The answer to the questions may be that it was not practically possible to secure such large quantities of equipment before the housing section had been dismantled and unloaded.

The condition of the rig was also a responsibility of the platform captain who left for shore on the 27th of March.

The French report describes the situation on board the platform as follows:

*"The safety instructions were debatable, their application was lax, the inspection and maintenance of the means of closure was not ensured and, apart from fire and escape drills, drills were non-existent. Lack of practice, which could have compensated for the lack of training on land by most of the crew, is one of the main reasons for the rapid capsizing and subsequent loss of life."*⁵⁰

⁴⁹ Kielland crew seminar 2018, p 6-7

⁵⁰ The French report 3.6.5.7

Surviving crew members from Kielland should be able to contribute with more detailed answers.

14

Which deviation procedures were used by the platform managers when/if cracks or external damage to the structure were discovered and where were such deviation reports sent?

Unknown. Surviving crew members from Kielland and others with operational experience from Pentagon rigs should be able to shed light on this. Again, the Veritas archives are central to achieve more answers.

15

What about the role of Phillips? Is the operator not obliged to ensure that hired equipment is operated in accordance with the regulations?

37

The simple answer is yes. Phillips had the overall responsibility.

Despite this, surprisingly little attention was paid to the role and responsibility of the operator. In the battle to turn the rig around, the Norwegian Oil Insurance Pool (NOP) and Stavanger Drilling were the visible players, while Phillips stayed in the shadows.

The operator had overall responsibility for all rigs in the Ekofisk licence, including floating rigs such as Kielland. The current regulations obliged the operator to ensure that both its own and hired equipment were operated in accordance with the regulations. There is so far no documentation that Phillips carried out the required inspections of the rig. Phillips was responsible for taking Kielland ashore and removing housing containers. Again, we encounter a consistent problem: Phillips has so far refused access to their archives.

The National Auditor writes in its report from 2021 that the Norwegian Commission did not assess liability for shipowners and operators.

"It is highly objectionable that the authorities did not carry out a complete survey of the responsibility of Stavanger Drilling and Phillips Petroleum after the accident. The

Commission paid little attention to assessing how the shipowner (Stavanger Drilling) and the operator (Phillips Petroleum) took care of their responsibilities."

In the report, the National Auditor points out that there was an unclear division of roles and responsibilities between the Norwegian Maritime Directorate and the Norwegian Petroleum Directorate, the authorities and private actors, and between shipowners and operators of mobile facilities. Through an agreement, the Norwegian Maritime Directorate delegated supervisory duties on mobile devices to Veritas. However, the agreement applied to ships, and was not adapted to the control system for mobile devices. Throughout the seventies, the authorities identified several weaknesses and the need for measures. The necessary measures were nevertheless not carried out, which the National Auditor describes as serious.

The Norwegian Commission pointed out many weaknesses in both the Norwegian Maritime Directorate's and Veritas' follow-up of the Kielland platform. The National Auditor emphasizes that the Commission made a thorough assessment of the authorities' and Veritas' follow-up of the platform during planning, construction and operation until the accident occurred, - while the question of responsibility and liability remained unanswered. The National Auditor writes:

"Since the Alexander L. Kielland platform was hired by Phillips Petroleum from Stavanger Drilling, this meant that Phillips Petroleum had overall responsibility for ensuring that the necessary inspections, measures and maintenance were carried out on the platform. ⁵¹

... The Industrial Committee emphasized in Inst. S. no. 166 (1976–77) the operator's responsibility to ensure that safety regulations for installations on the (continental) shelf are followed. Our investigation shows that the Commission did not carry out a systematic investigation of how Phillips Petroleum and Stavanger Drilling had taken care of the responsibility for internal inspections on the Alexander L. Kielland platform. The report from the Commission of Inquiry therefore did not provide a complete basis for assessing the conditions of responsibility." ⁵²

⁵¹ National Audit report, Document 3:6 (2020–2021) p 78.

⁵² National Audit report, Document 3:6 (2020–2021) p 143.

These deficiencies are very serious. They form part of the general impression that the Commission and the authorities were not interested in placing responsibility on the American and Norwegian actors. Liability was placed in France.

Incorrect anchorage

Several actors emphasize that incorrect anchoring and extensive hauling-in and hauling-out activity between Kielland and fixed installations has been one of the central underlying causes for the development of the fatigue fracture in the D6 bracing. Professor Marie Smith-Solbakken at UiS has carried out a review of Stavanger Drilling's and the Norwegian Commission of Inquiry's archives - but has not had access to archives from Phillips and Veritas.

16, 17 and 18

- Is there a non-conformity report - is there a Veritas approval of the changes to anchoring from 10 to 8 anchors? ⁵³

- What verifications had Veritas carried out in advance of the decision to make sure that the structural integrity of Kielland was maintained by applying compensatory measures?

- How did the Norwegian Maritime Authority follow up on the requirement that anchoring should take place in accordance with the design criteria? How did Veritas interpret the Norwegian Maritime Directorate's requirements?

Nils Gunnar Gundersen briefed the Commission in the days after the disaster about Pentagon rigs, from which he had extensive experience. He has stated that the Police showed him a Veritas document in which approval was given for the change from 10 to 8 anchors. ⁵⁴

The Norwegian Commission writes:

⁵³ Kielland Conference report 2017, p 16

⁵⁴ TV2 documentary series 2022, 2nd episode

"In particular, there is reason to point out that the permitted anchor line force was high. The operating manual has also not been updated in terms of description and operation of the anchor system. While a system with 10 anchor lines in a symmetrical pattern was planned, systems with 8 and 9 anchor lines in asymmetric laying patterns were mostly used." ⁵⁵

Strictly speaking it was not intended that the operating manual should be updated according to practice - but that operational practice should be carried out in line with the operating manual.

The situation must be investigated in more detail, both in relation to Veritas and the Norwegian Maritime Directorate.

Veritas, rig owner and operator

As a classification company, Veritas had extensive responsibility for carrying out checks of the general operation, compliance with design criteria and changes that the operator and shipowner wanted to make. Veritas has confirmed supervision in the autumn of 1979. It is documented that Veritas also was on board as late as February 1980, to check the rig before it was converted back to a drilling rig, on assignment for Shell in the British sector. They approved the postponement of the four-year inspection just days before the accident on March 27.

40

19

Why did Veritas approve the postponement of the four-year check?

Stavanger Drilling applied on 26 February 1980 for a postponement of parts of the four-year inspection. They stated that the rig was going ashore,

"... in mid-March 1980 to bring ashore the housing modules and rebuild the platform into a drilling platform again. Alexander L. Kielland was then to be replaced by the

⁵⁵ NOU 11:1983 p 51

*sister platform Henrik Ibsen... Ibsen was expected to be completed on 25 March 1980."*⁵⁶

It was assumed in the application that control of the lower bracings (including the D6 bracing) should be carried out in March 1980, in line with the four-year rule.

On 24 March 1980 – three days before the disaster – Veritas announced that the completion of the quadrennial inspection could be postponed until 1 July 1981. Postponements of quadrennial inspections by one year were established practice in 1980. But it was clarified that the postponement did not apply to the inspection of the lower horizontal bracings.

The National Auditor writes:

*"The 24th of March 1980, Det Norske Veritas notified both Stavanger Drilling and the Norwegian Maritime Directorate in a letter that the completion of the four-year inspection could be postponed until 1 July 1981. In the letter to Stavanger Drilling, it was specified that the postponement was granted on the condition that "the inspector finds this to be acceptable after an inspection." Det Norske Veritas stressed that such an inspection (supervision) must at least correspond to an annual inspection in scope and method. The last annual inspection carried out by Det Norske Veritas on the platform was carried out in autumn 1979, and it has not been reported that Det Norske Veritas carried out any new annual inspection in connection with the postponement. On the other hand, the company carried out an inspection in accordance with the British regulations for issuing a "certificate of fitness", which was required by the British Ministry of Energy. This was carried out in February 1980 and included a partial inspection of the hull, machinery and electrical installations."*⁵⁷

41

The delay of the Ibsen led to changes in the plans. Kielland did not have time to go ashore, but instead was going directly to the British sector for the drilling assignment for Shell in April 1980. Several of the crew members have stated this. The archives of Stavanger Drilling also lack documentation in this area. But the Norwegian Commission has included an interesting piece of information:

"At the request of "Alexander L. Kielland"'s shipping company, the special periodical survey (the "four-year survey") which was to have been carried out in 1980 was

⁵⁶ NOU 11:1981 p 51

⁵⁷ National Audit report p 84

*postponed until the end of July 1981. However, the inspection was scheduled to begin when the platform was taken ashore for conversion to a drilling platform in the **summer of 1980** (author's emphasis)."* ⁵⁸

The conversion was in practice underway when the accident occurred. Since they did not have time to take the rig ashore in March, this last sentence may indicate that the conversion in reality was to take place in two stages: First out on the field in March 1980, and then the last stage where the rig was to be taken ashore in the summer of 1980 for completion. Was it planned to remove the residential sections in the summer of 1980? And was it planned at the same time to carry out the inspection of the lower horizontal bracings in the summer of 1980?

None of this emerges from the archives of Stavanger Drilling, which have obviously been purged. ⁵⁹ Both Veritas and Phillips must have been aware of this, but they refuse access to their archives.

20

Where are the Veritas documents justifying their approval?

42

Det norske Veritas (1980) D/R Alexander L. Kielland – 100071 – LFOA Letter to the Norwegian Maritime Directorate 24 March 1980.

The National Auditor writes:

"The Norwegian Maritime Directorate supervised, among other things, the stability and the rescue equipment and used Det Norske Veritas' class approval for strength, construction and machinery as the basis for the general approval. Both in the directorate's safety regulations and in Det Norske Veritas' regulations, the opportunity was given to postpone the four-year inspection by up to one year." ⁶⁰

21 and 22

- The Kielland Network has received information that it was considered to change classification company to

⁵⁸ NOU 11:1981 p 52

⁵⁹ See question 23.

⁶⁰ National Audit report p 83-84

***Lloyds and that this classification company carried out an assessment of the platform. Did Lloyds assess the platform and if so, what were their assessment and requirements to classify the platform?
- Since Lloyds classified other platforms of the same construction, the requirements from the two classification companies should be compared and so should the inspection routines the two classification companies had. There has been no review of archives or documentation from Lloyds.***

All ships and floating rigs must be certified through an internationally recognized classification society. The British *Lloyds Register of Shipping* (hereafter Lloyds) is the largest international classification company.

Most of the Pentagon rigs were classified at Lloyds. Kielland, Ibsen and Norwegian-owned *Gulnare* were classified in Veritas.

Was it considered to classify Kielland and Ibsen at Lloyds? This needs to be investigated further directly with Lloyds. We know that the Norwegian Commission met Lloyds - and the British Department of Energy - 15-18 July 1980, together with Norwegian Police investigators.⁶¹ It must be checked what was discussed at these meetings, and whether specific comparisons were made.

In several areas, it makes sense to compare operation and management of the various Pentagon platforms: Inspection routines, stability routines and structures, crack development in bracings and other operating conditions.

It is otherwise worth noting that the Norwegian Commission believed that Lloyds would not have done better as a classification company than Veritas. The French Commission makes a concrete comparison and writes:

3.4.4.2

"1. The (Norwegian) Commission report (point 3.1.5.6 page 200) points out two points where Lloyds' regulations are superior to DnV's regulations: The notice about construction areas where there is a risk of "tearing out"-breaches, and the inspection in dry dock every two years. ...

⁶¹ National Audit report p 38

*6. DnV's regulations were perhaps slightly less strict than the regulations of the other competing classification institutions, but no one had criticized these differences before the accident. DnV, which was new to the classification of pentagon rigs, also had less experience with this type of platform than its competitor Lloyds."*⁶²

⁶² The French report 3.4.4.2