

Former Senior Management Team of Ferguson Marine Engineering Limited (FMEL) Response to Audit Scotland's Report 'New vessels for the Clyde and Hebrides: Arrangements to deliver vessels 801 and 802 dated April 2022'

The report released last week by Audit Scotland answered an important question that the former leadership team of FMEL have been asking for the past four years "Why, when the government had the power to insist on an Independent Expert Determination to resolve the dispute between CMAL and FMEL over 4 years ago, did they refuse to do so?"

Our chairman met with the cabinet secretary for finance Derek Mackay on the 5th of June 2018 to insist that the Scottish Government intervene to instruct CMAL to take part in an Expert Determination Process, to resolve the very serious situation with the two ferries and the devastating effect this was set to have on the workforce, the viability of the yard, the cost and delivery of the ferries. He was shocked and dismayed when Derek Mackay told him that he could not do this because ministers had received a legal letter from the CMAL Board, threatening to resign en masse, if the government interfered with them, as an independent board. Derek Mackay said that this would be politically very damaging for the government, and he could not intervene. What was it that could be so politically damaging to the government, that CMAL had over them? What could possibly be so threatening to the government to prevent them from confronting CMAL?

The Audit Scotland report has uncovered the answer to this question. The government had forced CMAL to place the order with Ferguson against their will. We were not aware at the time of the strength of opposition from CMAL to placing the order with Ferguson. Had we known this at the time it would have caused us to seriously question accepting the order. The Scottish Government announced FMEL as the preferred bidder in August 2015, around six weeks before their annual conference, the first for Nicola Sturgeon as First Minister and just before George Osborne announced a £500m investment in Faslane. There was clearly great pressure on the timing of the announcement that it was going to FMEL. There is a high probability that pressure was also on CMAL to rush the Invitation to Tender. This would explain the findings of BCTQ, HKA and their own Independent Expert, Commodore Luke van Beek that: -

"As discussed further in paragraph 3.2.17 below, there appears to have been inadequate consideration of the fundamental issues required to establish the feasibility of the concept design, either in terms of accuracy or detail, and to properly specify the requirements in the ITT. The fact, for example, that the arrangement of the spaces below the vehicle deck had to be substantially changed, that many of the deadweight parameters had to be adjusted, and that the normal operating draft and the design draft had to be increased indicates that the concept had been

inadequately developed in terms of weight estimating, subdivision, intact and damage stability”¹.

Early in fulfilling the contract for CMAL it became obvious to FMEL management, that variations to the original contract were resulting in significant changes and cost increases

well beyond what would be expected in a Standard New Build contract. Despite repeated attempts to engage CMAL in a meaningful discussion about these changes, and the serious cost implications, they repeatedly refused to discuss the issues.

Five years ago, FMEL management alerted the government to the seriousness of the situation developing between FMEL and CMAL and the damage this was having on the construction of the two dual fuel LNG ferries. A red flag was raised with the First Minister in May 2017.

The Audit Scotland report has finally revealed the reason why the Scottish Government were afraid to confront CMAL and insist on them taking part in a dispute resolution process, however it has completely missed the real cause of the significant cost overruns and excessive delays in delivery of the two vessels.

They appear to have accepted without question the Scottish Government’s false narrative that this is all down to the inadequacy of FMEL. Nothing could be further from the truth.

Audit Scotland state in their report that they did not audit any aspects of the procurement process before Ministers announced FMEL as the preferred bidder. This is a serious omission. The inadequate consideration given by CMAL to many of the fundamental issues required to establish the conceptual design, before the order was announced, is at the core of this ferry fiasco.

All through the report there are statements about CMAL and the Scottish Government which are presented as if they are factually accurate which they are not.

Key Messages

Section 2 of the report is where it appears that comments from CMAL and the Scottish Government are made as if they are factual. The Key Messages are heavily biased towards CMAL, Transport Scotland and the Scottish Government.

1. CMAL first reported problems with the project to the PSG in December 2015 and this was followed by several notifications of increasing problems and delays Transport Scotland notified the minister for transport in December 2016 that there was a risk that FMEL would not recover the vessel delays. In

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https://archive2021.parliament.scot/S5_Rural/General%20Documents/RECC_FMEL_SUBMISSION_Part_1.pdf (page 32)

February 2017 it officially informed Scottish ministers that it was highly probable that the vessels would be late.

Early in fulfilling the contract for CMAL, it became obvious to FMEL that variations to the original contract were resulting in significant changes and cost increases well beyond what would be expected in a Standard New Build contract. Despite repeated attempts to engage CMAL in a meaningful discussion about these changes and the serious cost implications, they repeatedly refused to discuss the issues. They were

informed by FMEL that continued indecision on changes would affect delivery. They clearly then reported on to Transport Scotland and the PSG that there was a risk that FMEL would not recover the vessel delays. It is also apparent that they did not report the cause of the delays.

Our chairman met with the First Minister on the 31st of May 2017 at Bute house to request her intervention to facilitate a meaningful discussion around the very significant unplanned changes and cost increases being experienced on the two ferry contracts.

All of this has been reported by the former Senior Management team of FMEL to the Rural Economy and Connectivity Committee.

The Audit Scotland team had clear access to CMAL and their version of events. Unfortunately, they were unable to have the same access to the former senior management team or their records since one of the early [REDACTED] acts of the government appointed manager of FMPG, was to dismiss, suddenly and [REDACTED] most of the team, insisting that [REDACTED]

[REDACTED] A former key member of the FMEL leadership indicated his willingness to give evidence to Audit Scotland if he could get assurance in writing [REDACTED] Audit Scotland were unable to get this assurance from the government, so he and others were unable to give valuable input to them.

This first Key Message is a heavily biased message, misrepresenting the full picture.

2. FMEL began vessel construction before it had agreed the detailed design with CMAL This led to a substantial rework and increased costs and delays. Some of the milestone events in the contract were not clearly defined and had no link to quality standards. CMAL was legally required to make these milestone payments.

FMEL were responsible for the design. They did begin work on the midship sections early on with Lloyds approval although CMAL had not agreed the final design. The drawings were approved by Class (Lloyds). We had difficulty in agreeing Lloyds approved drawings with CMAL, who were contentious

when it came to agreeing or signing off on the final design of specific parts of the ship. Commodore Luke van Beek in his evidence to the RECC said that he was surprised by the number of changes to the design that were still being introduced and suggested that a failure by CMAL to sign off certain aspects of the design we're causing ongoing problems with the construction of the vessels.

Two examples that led to substantial rework were changes to the Bunkering arrangement and alterations to the passenger areas. FMEL had designed the bunkering arrangement (LNG fuelling) on the side of the vessel, midships close to the LNG fuel tank which was in the centre of the ship. CMAL wanted to change this from midships, aft to the stern of the ship, since they realised that they could not get an LNG tanker on to all the quay sides. This required a redesign of the cryogenic pipework requiring an additional c.45 metres of expensive insulated cryogenic pipe

and additional venting along the length of the pipework to comply with safety standards.

In the passenger area CMAL insisted on moving structural pillars which were supporting the upper deck which led to a redesign and heavier steel work having to be installed.

Commodore van Beek, the government appointed expert, was based at FMEL for 17 months and was forensically involved, focusing on the issues surrounding the delays and increased costs being experienced in both vessels.

In a statement to the RECC, he said –

“If you are going to put in place a design and build contract you should have the specification almost complete when you let the contract. That was not what happened at all.”

All this information was available to Audit Scotland.

This second Key Message is grossly misleading in the way it portrays FMEL. It should have been more balanced.

3. FMEL experienced cash flow problems from 2016. To support FMEL, in mid-2017 CMAL agreed to accelerate £14.55 millions of milestone payments, to be spent on specific vessel equipment, and allowed FMEL to extend the vessel delivery dates in June 2018, on the condition that FMEL extended the dates of the surety bonds. The Scottish Government also provided FMEL with two loans, in September 2017 and June 2018, worth a total of £45 million. Although the Scottish Government sought assurances on FMEL's labour resources prior to offering the second loan (worth £30 million), there was limited time to undertake a detailed assessment. The terms of the 30 million loan agreement required the Scottish Government to make payments to FMEL despite evidence of further delays.

“CMAL interfered in the design process. It involved itself in design matters in which it had no right to do so; It required alternative designs to be investigated; and delayed decisions and approvals” (HKA Report)². These delays and changes put extreme pressure on FMEL’s cash, which meant that it was unable to pay for specific vessel equipment. CMAL accepted the need to purchase this equipment and agreed to accelerate a £14.55m milestone payment to enable the purchase to be made. CMAL had to accept that the delivery dates would have to change due to the delayed decisions and approvals. FMEL extended the dates of the surety bonds to be aligned with the new delivery dates.

The Scottish Government were very keen on work continuing on the ferries whilst FMEL were pushing hard for a dispute resolution process. They did not want FMEL to lay off workers as a result of the financial pressures caused by the additional work required on the ferries. They were willing to fund the continuation of the work whilst supposedly working with FMEL towards a resolution of the claim for additional costs. FMEL were told by the Government that the only way they could advance the money was by way of a loan to avoid State Aid. It was very clear that every day that passed

without the necessary funding was causing further delays. The money had to go in for work to continue and layoffs to be avoided. FMEL management accepted the loans on the understanding that this was a short-term measure until a resolution was reached to cover the additional costs.

4. CMAL, Transport Scotland and the Scottish Government had clear, well documented objectives for supporting FMEL: to get the vessels delivered as quickly as possible, to protect jobs, and secure the future of the shipyard. Although the interventions enabled FMEL to retain its workforce and suppliers, they had little impact on the progress of the vessels.

It is factually incorrect to say that the additional cash had little impact on the progress of the vessels. All the moneys advanced were used exclusively to progress the vessels. The work done had to be checked and signed off by PwC and Commodore Luke van Beek. His reports document the progress made.

5. In July 2017, FMEL submitted a £17.5 million claim to CMAL for costs incurred due to unforeseen complexities with the contract. Over the next 18 months, the dispute and the value of the claim escalated. In March 2019 after seeking legal advice CMAL refuted the claim in its entirety. FMEL chose not to pursue the claim in court and in May 2019 the Scottish Government commissioned an independent view. It concluded in June 2019 that there was no legal basis for CMAL to pay more than the £97 million fixed price for the contract. FMEL entered administration in August 2019. At that point, CMAL

²https://archive2021.parliament.scot/S5_Rural/General%20Documents/RECC_FMEL_SUBMISSION_Part_2.pdf (page 11)

and the Scottish Government had paid FMEL a total of £128.25 million i.e., £83.25 million in contract payments and £45 million in loan payments, but the vessels were largely incomplete.

This is a gross misrepresentation of the factual position.

FMEL viewed pursuing the claim in court as the nuclear option and were pushing for a dispute resolution process which would be normal commercial practice in such disputes. On 25th of April 2019 a letter from the director general, economy was sent to the CEO of FMEL. The letter acknowledged the Scottish government's awareness of the challenges surrounding the build of the CMAL vessels and the stalemate with respect to the claim, also noting the meeting between the contracting parties on the 26th of March 2019 had again been unproductive. The letter also stated that "to better illuminate matters the Scottish Government will now seek an independent view of the claim. We expect this process to last around one month and be conducted by a senior QC. The individual conducting this work on our behalf will need access to relevant documentation. We would welcome FMEL's support with this process."³

The FMEL CEO responded to the director general's letter on the 25th of April thanking the Scottish Government for finally accepting that intervention was required. He confirmed FMEL's full support in the process and said that he assumed the senior QC would also have independent technical assistance where required but would be grateful if the Director General could confirm this point. Disappointingly she did not confirm this. The opinion of Senior Counsel was received on the 21st of

June 2019. He had not contacted FMEL for any input nor had he sought independent technical assistance – [REDACTED] It is factually incorrect to say that Counsel's opinion concluded that there was no legal basis for CMAL to pay more than £97 million fixed price for the contract.

Senior counsel was asked to address 2 issues: -

First, [REDACTED] the first question posed to senior counsel was irrelevant. FMEL did not contend that the contract should be set aside and FMEL paid on a cost-plus basis. It appears that Counsel was incorrectly briefed.

³ <https://www.gov.scot/binaries/content/documents/govscot/publications/transparency-data/2019/12/ferguson-marine-key-documents-2019/documents/april-2019/ferguson-marine-letter-from-sq-to-fmel-re-intention-to-reduce-workforce---25-april-2019/ferguson-marine-letter-from-sq-to-fmel-re-intention-to-reduce-workforce---25-april-2019/govscot%3Adocument/Ferguson%2BMarine%2B-%2Bletter%2Bfrom%2BSG%2Bto%2BFMEL%2Bre%2Bintention%2Bto%2Breduce%2Bworkforce%2B%2B%25E2%2580%2593%2B25%2BApril%2B2019.pdf?forceDownload=true>

On the second question, Counsel's opinion was heavily caveated.

First, [REDACTED] Answer, [REDACTED] Answer, [REDACTED] this represents a further important restriction on the scope of my views. [REDACTED] -I cannot and do not seek to express a view on whether FMEL's claim might be presented differently and if so what the merits of such an alternative presentation might be⁴. "

Based on the express terms of the opinion, it is of narrow scope, heavily caveated and did not consider the full extent of FMEL's potential remedies. Despite this inconclusive opinion, the Scottish Government used it to conclude that FMEL did not have a justifiable claim, closed any opportunity for an independent dispute resolution process and used it to justify taking the business into government ownership, against the advice of their own Independent Expert Commodore Luke van Beek.

Audit Scotland state in paragraph 42 of the report: - "Our audit did not consider the design of the vessels or the detail in CMAL's tender documents".

In the second half of 2017, FMEL commissioned an independent review of the technical background to the CMAL contracts from Burness Corlett Three Quays. BCTQ is an independent marine consultancy with offices in Southampton, the Isle of Man and Dubai. Their highly qualified naval architects and marine engineers offer expertise in ship design, project management, plan approval and supervision of construction. Their findings exposed serious weaknesses in CMAL's procurement process. A copy of the report was sent to the First Minister and CMAL.

"From our review of the ITT and other information provided it is clear that at the ITT stage CMAL had not thought through and did not have a clear idea of the consequences of what

they were asking for in terms of the ITT specification; the design concept for the vessels had not been thoroughly developed"⁵.

"From our investigations there appears to have been inadequate consideration of these fundamental issues either in terms of accuracy or detail, prior to issue of the ITT. This includes an apparent lack of

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https://archive2021.parliament.scot/S5_Rural/General%20Documents/RECC_FMEL_SUBMISSION_Part_1.pdf (page 61)

⁵https://archive2021.parliament.scot/S5_Rural/General%20Documents/RECC_FMEL_SUBMISSION_Part_1.pdf (page 30)

consideration around the requirements and processes involved in the classification of the proposed vessels”.

Inadequate consideration was given by CMAL to many of the fundamental issues required to establish the feasibility of the conceptual design, both in terms of accuracy and detail. The result was that CMAL’s requirements were not adequately set out in the tender documents and subsequently changed throughout the contract

Commodore Luke van Beek was appointed by the government on the 9th of November 2017 he was the only Scottish Government appointed independent expert, who had the expertise to fully understand the complex technical issues for both CMAL and FMEL in building these two first in class, effectively prototype, vessels.

Commodore van Beek was based at FMEL for 17 months and was forensically involved, focusing on the issues surrounding the delays and increased costs being experienced in both vessels. He sent regular reports and warnings to the Scottish Government during this time.

Commodore van Beek expressed surprise at the number of changes to the design that was still being introduced at that stage and suggested that a failure by CMAL to sign off certain aspects of the design were causing ongoing problems with the construction of the vessels. In evidence given to the RECC, Commodore van Beek said: -

“If you are going to put in place a design and build contract you should have the specification almost complete when you let the contract. That was not what happened at all”.

In August 2018 FMEL engaged dispute resolution consultants HKA to assemble a detailed claim for additional costs incurred on the ferries contract. HKA is one of the world's leading privately owned, independent providers of consulting, expert and advisory services for the construction, manufacturing, process and technology industries.

The HKA report resulting from this engagement also supported the findings of BCTQ and Commodore van Beek. The Scottish Government and CMAL were given copies of the HKA report.

“The conceptual design was inadequate. Many fundamental design issues were not addressed or resolved by CMAL at award of the contract and had to be resolved thereafter”.

“CMAL interfered in the design process, it involved itself in design matters in which had no right to do so; It required alternative designs to be investigated; and delayed decisions and approvals”.

The Audit Scotland exercise did not consider the design of the vessels or the detail in CMAL's tender documents, the real cause of the horrendous increase in cost and the considerable delay in completion. To get to a full understanding of what went wrong with the contract for the two ferries, a full investigation into the design issues and the detail in CMAL's tender documents is required. The Public Audit Committee should ask Audit Scotland to oversee an Expert Determination process of the design issues and the detail in CMAL's tender documents in order to provide full transparency of this catastrophic failure and identify the key lessons which need to be learned to avoid a similar catastrophic failure happening again.

In the same paragraph it states that CMAL contends that the vessels were not prototype. It fails to mention that Lloyds Register, the classification authority, had no specific classification rules for LNG fuelled vessels. They had no experience with the classification of innovative LNG fuelled ferries. They were therefore required to follow procedures set out in Lloyds Assessment or Risk Based Design (ARBD). This Procedure is required by Lloyds for "Novel or complex designs for which prescriptive rules and regulations do not currently apply". i.e. , prototypes

The numerous design changes were detailed in a report by HKA which was available to Audit Scotland. These were not unsubstantiated claims by FMEL.

Paragraph 55 refers to FMEL missing the target date for several of the milestones, and that they revised the milestone dates seven times over the course of the project. Exhibit 4 shows the delays between the milestone dates, as set out in the contracts, and when FMEL achieved those milestones. This statement fails to explain the reasons for the delays and multiple revisions to the milestones, which are clearly detailed in the report by HKA and in evidence given by Commodore Luke van Beek, the government appointed expert. Without any reference to the reasons, the statement gives the biased impression that FMEL are responsible for the delays.

Paragraph 58 again gives a biased impression without any reference to the reasons. This is clearly a CMAL statement to Audit Scotland.

Paragraph 80 states that the Scottish Government and CMAL requested on several occasions that FMEL pursue its claim in court. Whilst this is true of CMAL it is not true of the Scottish Government.

This was the consistent response from CMAL to FMEL's request for a dispute resolution process. The only time the Scottish Government said this was after they had made the decision to take the business into public ownership. Legal action would have been the nuclear option which would have resulted in all work on the vessels being stopped and the workforce being laid off. The Scottish Government and FMEL management were keen to avoid this.

In 2010 the Scottish Government passed through legislation the Arbitration Scotland Act (2010) of which the first founding principle was: -

"The objective of arbitration is to resolve disputes fairly, impartially and without

unnecessary delay and expense”.

FMEL were pushing for the Scottish Government to insist on Independent Expert Determination. Transport Scotland had recommended this and Commodore Luke van Beek had recommended arbitration. CMAL opposed all these recommendations. Their response was “Sue us”. The Government declined to take the advice of their own appointed expert and refused to insist on CMAL’s participation in independent expert determination. This is all on public record as evidence to the RECC. We could not understand why the Government did not take a stronger stance with CMAL. We now know why.

Paragraph 81 states that CMAL commissioned a naval architect to produce an independent opinion. A review of the report by Audit Scotland would have revealed that this was a preliminary report. FMEL were blocked by CMAL from giving input to the ‘independent’ review but received a 25-page summary. The author had stated clearly that this was a preliminary report. FMEL asked the Scottish Government to be introduced to the author in order to give their input and allow the report to be completed. The government put this request to CMAL, to be told that they would not allow FMEL access to the ‘independent’ author of the report. Again, it was expected that the government would step in and insist on FMEL being allowed to give their input. In a now familiar pattern, they failed to intervene.

Paragraph 83. See Key Message 5. Above

Key Message 2. In section 3. Of the report: -

“In December 2019 the Scottish Government-appointed turnaround director at FMPG, reported significant problems with the vessels and considerable operational failures at the shipyard.”

The interim manager brought in by the government to run the yard was given the fictitious title of turnaround director. Very early in his appointment he dismissed most of the senior team at the yard without a hand over to capture valuable knowledge on the status of their work on the vessels, or to understand how they managed their part of the project.

The very effective management systems which they operated were also abandoned by Mr. Hair. This was a hugely -act, leaving him without the knowledge, expertise and systems to manage the business. Mr. Hair was not a naval architect, nor did he have any experience of shipbuilding. The ex-senior team of FMEL submitted a report to the RECC in response to Mr. Hair’s report. A copy is attached.

A red flag was raised with the first minister in May 2017. the Scottish Government could easily have resolved the dispute between CMAL and FMEL by insisting on a Dispute Resolution Process. They failed to do so. They owed a duty of care and failed to act on that duty by refusing to insist on

CMAL's participation in a Dispute Resolution Process. Their inaction has resulted in serious harm to FMEL, its workforce and management, its investors, the future of the yard and the local Inverclyde economy. This has had, and is still having, a hugely damaging impact on public finances.

A misleading narrative was created by Derek Mackay, appointing Mr. Tim Hair with the illusory propaganda title of turnaround director and commissioning him to write a report which was ill informed, [REDACTED] and unfairly slanted. The [REDACTED] report appeared to [REDACTED] discredit reports and comments made by Commodore van Beek and to [REDACTED] place the blame for the 801 and 802 fiascos on an extremely competent and talented management team and defend the action taken by the Scottish Government. Commodore van Beek is an expert that was appointed by the government however his findings were not what they wanted to hear.

"I believe that the factors which have led to this position were outside FMEL's control, I repeat that I believe FMEL has the managerial and technical capability to deliver both ships"

Commodore van Beek also gave the following statement to the committee:

"If you are going to put in place a design and build contract you should have the specification almost complete when you let the contract. That was not what happened at all."

The government did not favour Commodore van Beek's informed findings which turned the spotlight firmly on CMAL. The report from the infinitely less qualified Mr Hair provided an alternative narrative which has since been used by Scottish Government ministers and officials as a source of sound bites and 'evidence' submitted to the committee. Some even misleadingly have referred to his report as expert opinion.

The catastrophic nature of this whole fiasco around the procurement and construction of ferry vessels in Scotland has at its core a failure by CMAL to have thought through and have a clear idea off the consequences of what they were asking for in terms of the ITT specification; The design concept for the vessels had not been thoroughly developed. The Audit Scotland exercise did not consider the design of the vessels or the detail in CMAL's tender documents. To get a full understanding of what went wrong with the contract for the two ferries it is essential that an investigation is initiated into the design issues and the detail in CMAL's tender documents. The public audit committee should call for a judicial inquiry to include expert determination of the design issues and the detail in CMAL's tendered documents, in order to provide full transparency of this catastrophic failure and identify the key lessons which need to be learned to avoid a similar catastrophic failure happening in future.

Dated 3rd April 2022

Attachment: The ex-senior team of FMEL submitted a report to the RECC in response to Mr. Hair's report. A copy is attached. /

4 February 2020
Report submitted
to the RECC
in response to Mr.Hair's report

FMEL Former Management Team Response to Project Review Board Report

Introduction

The former Management Team contends that:

The ferry project has suffered significant delays throughout the life of the contract. In the view of the former management team of Ferguson Marine Engineering Ltd, the root cause of these delays and the spiralling costs are without any shadow of a doubt down to the lack of consideration given by CMAL to many of the fundamental issues required to establish the feasibility of the conceptual design, both in terms of accuracy and detail with the result that CMAL's requirements were not adequately set out in the tender documents (which of course include the conceptual design) and subsequently changed throughout the contract period. Although FMEL was expressly required to follow good international and marine practice, we believe that this requirement was undermined by the inadequacy of the conceptual design, and CMAL's attempts to develop it, by repeatedly interfering in the design process after contract award. In our view, this is the root cause of the significant delays to the construction of the two vessels and the consequential spiralling costs.

For more details see the BCTQ report in Section 2.

BCTQ report, section 2.1.5 states that these 2 vessels were **“Unique, Prototype and Complex one-off vessels. Even without the added complexity of the dual fuel LNG aspects”**. Box 8 on page 2 of the contract specified Lloyds Register (LR) as the preferred Classification Society. LR had no specific rules for LNG fuelled vessels. They had no previous experience with the Classification of innovative LNG fuelled ferries. These were first in class in the UK, therefore we consider them to be Prototypes. They were required to comply with procedures set out in LR's Assessment or Risk Based Design (ARBD). This was required by Lloyds for **“Novel or complex designs for which prescriptive rules and regulation do not currently apply”**. i.e. Prototypes. We contend that FMEL's highly qualified Naval Architects and Marine Engineers, BCTQ's 3 extremely well qualified Naval Architects and Marine Engineers, and the experts at Lloyds Registers all agree that these vessels are Prototypes.

This report addresses the issues raised by Tim Hair in his report to the Scottish Government on the condition of the two ferries 801 and 802 together with a revised programme and cost to complete the two vessels.

In our view, Tim Hair wrongly cites in his report the following issues as being at the root cause of the delays:

“Lack of project management particularly critical on 801/802 which are complex ships where no one person has understood and controlled the overall programme.”

Prior to the company going into administration, the FMEL management employed a very detailed project management system known as Short Interval Control. This included a visual system, set up in a dedicated project planning war room, with update meetings held twice daily, with key individuals in attendance, including Ship Managers,

Planners, Engineering, Supply Chain, Operations, Finance, Quality and Health and Safety. These meetings were led by 3 individuals with a wealth of experience in project management, namely: the CEO, [REDACTED]. In our view, all understood and were in full control of the overall program and the whole team were absolutely on top of the planning and control of the project.

However, when the company went into administration, the Scottish Government insisted on being appointed as the managing agents in return for underwriting all running costs.

The CEO was asked to work from home by the administrator and was told that he would be contacted if they needed him. We are astonished that no attempt was made to debrief him on the status of the projects, [REDACTED].

[REDACTED]. On this basis, we believe that 3 key individuals were let go without any serious plan to download their combined knowledge of the project. We believe that the project planning system was abandoned and no project management meetings have been held for 5 to 6 months. In our view, a significant effort will now be required to re-establish an effective project management and control system, adding to the delay and additional costs.

A second point raised by Tim Hair in his executive summary:

“An absence of planning and control systems has resulted in a lack of integrated working out of sequence activities and no useful management information “

As stated above there was in place a very effective planning and control system with twice daily meetings involving the Ship Managers, Planners, Engineering, Supply Chain, Operations, Finance, Quality Health and Safety, and an effective cross-functional team to ensure Fully Integrated Working, real time communication, and a totally collaborative approach to management of the project.

On 20 February 2018, we believe that Ferguson's Head of Safety, Health, Environment and Quality (SHEQ) received an email from [REDACTED] CMAL requesting a final piece of information to allow him to submit his audit report to the Scottish Government. In his email, this individual stated; **“Your side of the report is fine, the fact is it is a really high score your records are some of the best I have seen”**. An excellent management system. Our score was 97%.

On 18 July 2018, Ferguson received a certificate of Approval from Lloyds register stating: **“This is to certify that the management system of Ferguson Marine Engineering Limited has been approved by LRQA to the following standards”**: ISO 9001 2015. We also have numerous other examples of feedback including from CMAL and Cal Mac which are very complementary of the management of their projects. Examples of results from audits and customer feedback are shown in the Appendix to Section 1.

A third point raised in Tim Hair's executive summary:

“Engineering Processes and Controls are weak. Specifications from the customer were not fully understood before design work was carried out resulting in an incomplete design and causing significant work.”

In our view, Engineering Processes and Controls were robust and the Lloyds approval cited above and the outcome of the CMAL audit [REDACTED], stating that **“Your records are some of the best I have seen”** support the integrity of our Engineering Processes and Controls.

Commodore Luke van Beek was appointed by the Scottish Government on 9th Nov 2017 and was intimately involved at FMEL for 17 months, focusing on the issues surrounding the delays and increased costs being experienced in both vessels. In our view, he was the only independent expert appointed by the Scottish Government who had the expertise to fully understand the complex technical issues for both CMAL and FMEL in building these 2 first in class vessels.

Commodore van Beek said in one of his reports to the Scottish Government:

“I believe that the factors which led to this position were outside FMEL’s control. I repeat that I believe FMEL has the managerial and technical capability to deliver both ships.”

We believe that much of Commodore Luke van Beek’s correspondence has been withheld from FOI requests under the guise of commercial sensitivity and GDPR.

In our view, there has been a void following government intervention, where there has been little attention to the vessels or the yard resulting in deterioration of both vessels and the housekeeping in the yard, which clearly is now having to be addressed.

We believe that the immature design and out of sequence working have been a direct result of the inadequate consideration given by CMAL to many of the fundamental issues required to establish the feasibility of the conceptual design, both in terms of accuracy and detail. We maintain that, if good international shipbuilding and marine practice is to be followed, and this is an express requirement of the contract, then outfitting works should be carried out in the workshop at block fabrication stage. This is known as advanced outfitting. We contend that FMEL was prevented from carrying out advanced outfitting and the optimum block building sequence and, in our view, this was a result of CMAL’s failure to “retire all major risks” before award of the contract and its ongoing interference in the design process, which forced Ferguson into a situation where they had to engage in out of sequence working to keep the project moving forward. A detailed description of the changes in the sequence of works and the move away from concurrent constructions of Hulls 801 & 802 can be found on Page 19 of the HKA Report in Section 4.

Throughout the life of the contract, we believe that there has been interference by CMAL, causing delay and disruption. In our view, there have been numerous “customer observations” by CMAL requesting changes which were not part of the specification. A significant number of these were outrightly rejected by FMEL, of those accepted a price increase was requested. We believe that, since the takeover of the yard by the government, CMAL have had a free hand to go in and make the changes

they want without challenge or control of the impact on further delay and cost. In our view, these changes by CMAL are likely to make up a significant portion of the “remedial work”.

There was also comment made that the business did not operate an Enterprise Resource Planning System or a Document Management System. We believe this to be a misrepresentation of the true state of affairs. Whilst the business did not have a large Enterprise Resource Planning System (it's a small business), it did operate what we consider to be a very effective Resource Planning System using Ship Constructor software and Excel. Similarly, with Document Management, the business [REDACTED] operated an effective Manual Document Management System. We contend that the statements made by Tim Hair are [REDACTED] misleading.

Defect Management

We view this to be a similar story to the other management controls. In our view, the Business Head of Safety Health Environment & Quality (SHEQ) and the Chief Quality Manager were very capable individuals and, alongside the Procurement Manager, were in control of Defect Management. [REDACTED]

[REDACTED] Examples of results from audits and customer feedback are shown in the Appendix to Section 1.

In our view, most of the senior management have been eliminated or neutralised without any proper handover of crucial information to the new management team who have been and still are being put in place. We believe that a highly competent management team has been wiped out without a carefully managed, professional hand over plan to transition the business [REDACTED]

Background and Project Status

On 16 October 2015, Ferguson Marine entered into a contract under an amended NEWBUILDCON form of contract for the construction of two LNG dual fuelled ferries. The contract price for each ferry was £48,500,000.

Approximately 18 months into the much-publicised contract, we would contend that it became obvious that variations to the original contract (VTC's) were resulting in significant changes and cost increases. In our view, these were well beyond what would normally be expected in a “Standard New Building Contract” and as a result, we would contend that FMEL made numerous attempts to engage with CMAL to address these significant requested changes and cost increases but that CMAL repeatedly refused to meet and discuss the issues.

On 31 May 2017, a meeting was arranged at Bute House with the First Minister to request her intervention to unblock the stand-off by CMAL. Following this meeting, we believe that the First Minister asked the Director-General for Economy to lead a task force to try and resolve matters. Despite many efforts throughout the summer of 2017,

including numerous meetings with the Director-General for Economy, Transport Scotland and other officials from the Scottish Government, no progress was made with CMAL and a Notice of Mediation was served by FMEL. CMAL failed to come to an agreement on a proposed scope for mediation. We would contend that they also refused to agree to an independent Expert Process proposed by Transport Scotland and that the Government refused to accept a recommendation by their own appointed expert, Commodore Luke van Beek, to go to arbitration.

In our view, by repeatedly refusing to engage with FMEL in what would be a normal commercial dispute resolution process, the Government and its wholly owned entity, CMAL, forced the directors into a position where they had no option other than to place the company into administration.

The attached report in Section 3 provides evidence of the difficulties FMEL encountered in seeking a resolution to the CMAL contract.

In our view, the company has lost a significant number of really talented people as a result of the action taken by the Government, including star apprentices, talented young Engineers, skilled tradesmen and a highly competent management team. We believe that we had a very motivated workforce who we would argue became totally demotivated as a result of the chaos created by CMAL and the Government. In our view, everyone was working as productively as possible under extremely difficult circumstances and we believe that it is not surprising that the productivity and motivation levels have dropped significantly over the past five to six months. In our view, this could take years to recover, if it recovers at all to previous levels. We believe that it was a very special Workforce, Management team and a happy and productive working environment under the previous management.

The cost and timescales for delivery of the vessels presented by Tim Hair:

Tim Hair's report outlines costs of remedial work of £12.8 million.

In our view, this work will include some remedial work required as a result of the void period following the Government takeover and will mainly require rework resulting from CMAL's requirements which were not adequately set out in the tender documents and subsequently changed and continue to change throughout the contract period. In our view, they currently have a free hand to make any changes without challenge.

Tim Hair's report states:

Cost to complete the vessels £95.1 million.
Capex for yard equipment £1.6 million.
Performance penalty provision £0.8 million.
TOTAL COST - £110.3 million

We believe that this cost has to be added to the costs already incurred of £135 million, including the £45 million loan which went into the construction of the 2 vessels up to the point of administration. We understand that, since administration, the Government have been covering the costs of the yard. In our view, this could be a further c. £10 million, including the costs of the numerous advisors.

We would therefore forecast the total cost of the 2 vessels at c. £255 million. A detailed analysis of the costs on Hull 801 reported on by HKA is shown in Section 4.

In our view, the Scottish Government did not save this yard from administration, they forced it into administration by repeatedly refusing to instruct CMAL to engage in reasonable requests for mediation, an expert witness process or arbitration to address the significant cost pressures being put on the yard - even when recommended by their own appointed independent expert. We would argue that all Ferguson asked for was a fair hearing to agree a fair price for the work they were asked to do. In our view, the Government denied them a fair hearing.

We believe that the First Minister was made aware of the serious issues Ferguson was experiencing with CMAL over two and a half years ago, in May 2017. At a meeting in the Scottish Parliament on Tuesday 5th June 2018, we understand that a direct appeal was made to the Cabinet Secretary for Finance and the Constitution to intervene and instruct CMAL to participate in an expert witness process to resolve the critical situation with the contract for the two ferries. In our view, had either of them taken decisive action then to insist on a resolution between both parties, there is every likelihood that the Glen Sannox would now be sailing and ship 802 would be significantly closer to completion. We believe that the Government should have insisted on independent mediation, an independent expert or arbitration process. We would argue that Ferguson were crying out for this action, to allow them to complete the vessels, grow the workforce, and ensure a very prosperous long-term future for the yard and the local Inverclyde community.

Section 1

Appendix



ISO 9001:2008: Executive report; 2nd February 2016, “based upon the sampling technique employed it is considered that the management system is being implemented in accordance with the controlling standard. It is therefore recommended that the LRQA Approval be continued”.

ISO 9001:2015: Executive report; 18th July 2018; “based on the assessment outcome the Assessment Team recommends the ISO 9001:2015 certification of Ferguson Marine Engineering Ltd for the agreed scope. This visit was to assess the compliance of the management system of Ferguson Marine Engineering Ltd against ISO 9001:2008 as defined in the audit planning documentation. The plan for the visit was completed covering the surveillance activities and new standard transition

The management system implemented by Ferguson Marine Engineering Limited, located in Port Glasgow (PA14 5NG), continues to meet the requirements of the ISO 9001:2008 standard and compliance with ISO 9001:2015 standard. Ongoing certification to ISO 9001:2008 remains appropriate and recommendation for ISO 9001:2015 certification, existing scope and location, is recommended.

The [REDACTED] confirms the contractual arrangements for ISO 9001:2015 are correct.” Assessment outcome: Areas for senior management attention: “No significant areas for attention for senior management were identified from the sample selected for this assessment”.

ISO 1090-2: Executive report; 23rd August 2018; “This visit was to assess the compliance of the management system of Ferguson Marine Engineering Ltd against Construction Product Regs as defined in the audit planning documentation. The purpose of this visit was to sample the Ferguson Marine Engineering Ltd. management system for the compliance to EN 1090-2:2008+A1:2011 (Construction Product Regulations)”.

The plan for the visit was completed. “The management system continues to meet the requirements of the standard and as such continued certification of the management system to EN 1090-2:2008+A1:2011 is recommended”.

ISO 9001-2015: Executive report; 29th May 2019; “This visit was to assess the compliance of the management system of Ferguson Marine Engineering Ltd against ISO 9001:2015 as defined in the audit planning documentation. “The primary objectives of the visit were achieved with ongoing certification to the assessment criteria validated and confirmed with no new findings reported”.

Examples of external 3rd party audits



AUDITOR	SUPPLIER Ferguson Marine Engineering Ltd	DATE 1st March 2016	LOCATION Port Glasgow		
Total Points Available					
Points	Sub-Section	Section Score	Max Points for Sections Reviewed	Section Points	% of Available Points
10	1 - Quality Management System	4.0	10.0	10.0	100.0%
8	2 - Document and Data Control	3.8	8.0	7.7	95.8%
8	3 - Supplier Quality Management	3.9	8.0	7.9	98.1%
8	4 - Receiving Inspection	4.0	8.0	8.0	100.0%
8	5 - Inventory Management	4.0	8.0	8.0	100.0%
10	6 - Process Control	4.0	10.0	10.0	100.0%
10	7 - Product Inspection	4.0	10.0	10.0	100.0%
8	8 - Corrective Action	4.0	8.0	8.0	100.0%
8	9 - Records	4.0	8.0	8.0	100.0%
8	10 - Personnel/Training	3.0	8.0	6.0	75.0%
7	11 - Plants and Grounds	4.0	7.0	7.0	100.0%
5	12 - Customer Service	4.0	5.0	5.0	100.0%
98	Total	46.8	98.0	95.5	97.5% Audit Score

Rating Scale:	Score
Excellent	90 to 100
Satisfactory	70 to 89.9
Conditional	50 to 69.9

Auditor's Comments

Ferguson Marine Engineering Ltd (FMEL) have very good systems in place which will only get better, The Quality Manager is in the process of updating all the records. If the Training records had been available then this would have been a very high score.


AUDITOR	SUPPLIER FergusonMarine Engineering Ltd	DATE 1st March 2017	LOCATION Port Glasgow		
Total Points Available					
Points	Sub-Section	Section Score	Max Points for Sections Reviewed	Section Points	% of Available Points
10	1 - Quality Management System	4.0	10.0	10.0	100.0%
8	2 - Document and Data Control	3.9	8.0	7.9	98.8%
8	3 - Supplier Quality Management	3.9	8.0	7.8	97.5%
8	4 - Receiving Inspection	3.9	8.0	7.8	97.5%
8	5 - Inventory Management	3.9	8.0	7.8	97.5%
10	6 - Process Control	3.9	10.0	9.6	96.0%
10	7 - Product Inspection	4.0	10.0	10.0	100.0%
8	8 - Corrective Action	3.8	8.0	7.6	95.0%
8	9 - Records	4.0	8.0	8.0	100.0%
8	10 - Personnel/Training	3.7	8.0	7.4	92.5%
7	11 - Plants and Grounds	3.7	7.0	6.4	91.4%
5	12 - Customer Service	4.0	5.0	5.0	100.0%
98	Total	46.6	98.0	95.3	97.2% Audit Score

Rating Scale:	Score
Excellent	90 to 100
Satisfactory	70 to 89.9
Conditional	50 to 69.9

Auditor's Comments


Ferguson Marine Engineering Ltd (FMEL) have very good QMS systems in place, The Quality Manager has updated most of all the QMS Documents and records. The training records are now available. The apprenticeship programme is really good and well run, Community benefits are in place and also you can see tangible benefits. This information is vital to CMAL and within our rights to ask for. Overall I congratulate the QM for running and maintaining very good QMS system.

Examples of external 3rd party audits

Customer Satisfaction Survey	
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Company Name: CMAL	Client Representative: [REDACTED]
Telephone No: [REDACTED]	Position Held: [REDACTED]
Fax No:	Email Address: [REDACTED]
FMEL Job No: [REDACTED]	Description of Work: REPAIR RAMP AND MANUFACTURE OF TWO PORTABLE FINGER FLAPS
Date Issued: 23/08/18	Date Returned: 24/08/18

QUALITY OF SERVICE	CUSTOMER RESPONSE (Please Circle)			
How efficiently did we respond to your enquiry?	Poor	Average	Good	Excellent
How would you rate the quality of tender response?	Poor	Average	Good	Excellent
How accurately did we meet your requirements?	Poor	Average	Good	Excellent
How would you rate the quality of services provided?	Poor	Average	Good	Excellent
How do we compare to our competitor's prices?	Poor	Average	Good	Excellent
How do we compare to our competitor's quality of service?	Poor	Average	Good	Excellent
Do you have any complaints about our service?	YES		NO	
Additional Comments: Overall build quality and finish was excellent however, it was slightly heavier than requested. The tender response was good and very quick but could be improved if a final dimensioned cad/pdf drawing was submitted with the tender, showing handle positions etc. to pass comment but all other details were clearly explained before with sketches. (we appreciate in this instance this would have taken more time which we did not have but would be useful for any future clients).				
STAFF: Please rate our staff performance on	CUSTOMER RESPONSE (Please Circle)			
Safety	Poor	Average	Good	Excellent
Efficiency	Poor	Average	Good	Excellent
Helpfulness	Poor	Average	Good	Excellent
Product Knowledge	Poor	Average	Good	Excellent
Overall	Poor	Average	Good	Excellent
Additional Comments: Staff were very helpful and provided a good, efficient service from start to finish. The overall build and finish was excellent given the tight timescales involved. Upon realising that the deadline for installation was tight staff worked through their lunch break to finish on time and was very much appreciated by all involved.				
Would you recommend Ferguson Marine Engineering Ltd to others?	YES		NO	
Do you have any advice or suggestions not included in this survey?				

<h2 style="margin: 0;">Customer Satisfaction Survey</h2>	
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Company Name: BAE Systems Ltd	Client Representative: [REDACTED]
Telephone No:	Position Held: [REDACTED]
Fax No:	Email Address: [REDACTED]
FMEL Job No: [REDACTED]	Description of Work: Rolling of Plates
Date Issued: 11/04/2019	Date Returned:

QUALITY OF SERVICE	CUSTOMER RESPONSE (Please Circle)			
How efficiently did we respond to your enquiry?	Poor	Average	Good	Excellent
How would you rate the quality of tender response?	Poor	Average	Good	Excellent
How accurately did we meet your requirements?	Poor	Average	Good	Excellent
How would you rate the quality of services provided?	Poor	Average	Good	Excellent
How do we compare to our competitor's prices?	Poor	Average	Good	Excellent
How do we compare to our competitor's quality of service?	Poor	Average	Good	Excellent
Do you have any complaints about our service?	YES		NO	

Additional Comments:

STAFF: Please rate our staff performance on	CUSTOMER RESPONSE (Please Circle)			
Safety	Poor	Average	Good	Excellent
Efficiency	Poor	Average	Good	Excellent
Helpfulness	Poor	Average	Good	Excellent
Product Knowledge	Poor	Average	Good	Excellent
Overall	Poor	Average	Good	Excellent


Additional Comments:
ALL MY DEALERS WITH THE STAFF ON OUR TRUCKS WERE VERY WILLING TO HELP AND MEET OUR REQUIREMENTS WITH A QUICK TURNAROUND OF THE WORK.

Would you recommend Ferguson Marine Engineering Ltd to others?	YES	NO
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Do you have any advice or suggestions not included in this survey?

Thank you for completing and returning our customer satisfaction survey.

[REDACTED]

Customer Satisfaction Survey	
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Telephone No: [REDACTED]	Position Held: [REDACTED]
Fax No:	Email Address: [REDACTED]
FREL Job No: [REDACTED]	Description of Work: Voyage Repairs
Date Issued: 18/06/2019	Date Returned:

QUALITY OF SERVICE	CUSTOMER RESPONSE (Please Circle)			
How efficiently did we respond to your enquiry?	Poor	Average	Good	Excellent X
How would you rate the quality of tender response?	Poor	Average	Good	Excellent X
How accurately did we meet your requirements?	Poor	Average	Good	Excellent X
How would you rate the quality of services provided?	Poor	Average	Good	Excellent X
How do we compare to our competitor's prices?	Poor	Average	Good	Excellent X
How do we compare to our competitor's quality of service?	Poor	Average	Good	Excellent X
Do you have any complaints about our service?				NO

Additional Comments:
 With regard to the work on SD Impetus FREL provided alternatives and offered valuable advice to make the job easier, quicker, and less costly

STAFF: Please rate our staff performance on	CUSTOMER RESPONSE (Please Circle)			
Safety	Poor	Average	Good X	Excellent
Efficiency	Poor	Average	Good X	Excellent
Helpfulness	Poor	Average	Good	Excellent X
Product Knowledge	Poor	Average	Good	Excellent X
Overall	Poor	Average	Good X	Excellent


Additional Comments:
 The [REDACTED] appeared to be inadequately briefed as he seemed unsure of what was required of him. However his completed work was of an exceptional standard.

Would you recommend Ferguson Marine Engineering Ltd to others?	YES	NO
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Do you have any advice or suggestions not included in this survey?

Thank you for completing and returning our customer satisfaction survey.

[REDACTED]

Customer Satisfaction Survey	
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Company Name: CalMac Ferries Ltd	Client Representative: [REDACTED]
Telephone No:	Position Held: [REDACTED]
Fax No:	Email Address: [REDACTED]
FMEL Job No: [REDACTED]	Description of Work: Shop Upgrade / Joinery Works
Date issued: 07/05/18	Date Returned: 07/05/18

QUALITY OF SERVICE	CUSTOMER RESPONSE (Please Circle)			
How efficiently did we respond to your enquiry?	Poor	Average	(Good)	Excellent
How would you rate the quality of tender response?	Poor	Average	(Good)	Excellent
How accurately did we meet your requirements?	Poor	Average	(Good)	Excellent
How would you rate the quality of services provided?	Poor	Average	(Good)	Excellent
How do we compare to our competitor's prices?	Poor	Average	(Good)	Excellent
How do we compare to our competitor's quality of service?	Poor	Average	(Good)	Excellent
Do you have any complaints about our service?	YES			(NO)
Additional Comments:				
STAFF: Please rate our staff performance on	CUSTOMER RESPONSE (Please Circle)			
Safety	Poor	Average	(Good)	Excellent
Efficiency	Poor	Average	(Good)	Excellent
Helpfulness	Poor	Average	(Good)	Excellent
Product Knowledge	Poor	Average	(Good)	Excellent
Overall	Poor	Average	(Good)	Excellent
Additional Comments: NO COMPLAINTS. WORKSO QUIETLY & EFFICIENTLY AT NIGHT UNSUPERVISED.				
Would you recommend Ferguson Marine Engineering Ltd to others?	(YES)			NO
Do you have any advice or suggestions not included in this survey?				
NO				

Thank you for completing and returning our customer satisfaction survey.

[REDACTED]



Executive Summary

Name of Company	Ferguson Marine
Address	Newark Works, Castle Road, Port Glasgow, PA14 5NG
Consultant	[REDACTED]
Date	20 th August 2019
Client Contact	[REDACTED]

Ferguson Marine is a well-established ship building company on the banks of the River Clyde at Port Glasgow.

The site is well organised and secure with security fencing, CCTV and a secure lock system around the site.

The company has over 300 workers and also uses some contractors for certain activities.

As with any type of construction, there are significant hazards in relation to work activities. These include, fire, explosive atmospheres, hazardous substances, working at height, working in confined spaces, use of vibrating tools and use of lifting equipment. There are also numerous other hazards with a lesser risk level that also need to be managed. There is a potential that should any of the hazards not be managed correctly, a serious incident could occur that could be catastrophic for the business and those involved.

The head of SHEQ has developed a management system that includes all parts of the business that mirrors the Plan - Do - Check - Act model.

The system that is currently in place creates a safe working environment for staff and reduces the risk to the company and ensures compliance with guidance and legislation.

The whole management of safety demonstrates a well thought out process that has been implemented and is constantly monitored. It is impressive.

The danger for the Administrators/new owners with a complex, high risk business like this one is that if they change experienced health & safety personnel and/or well established procedures/systems, it could result in an increased risk. Maintaining the status quo, subject to 1 minor improvement is therefore strongly recommended.

Overall this business demonstrates an impressive, uncomplicated and effective safety regime.



Rating Chart

Report Section		Poor	Limited	Good	Very Good
1	Health and Safety Management System				
1.1	Plan: Policy and Planning				
1.2	Plan: Roles and Responsibilities				
1.3	Plan: Risk Assessments/Risk Profiling				
1.4	Do: Worker Involvement/Consultation				
1.5	Do: Competencies and Training				
1.6	Do: Arrangements and Safe Systems				
1.7	Do: Managing Contractors/Visitors				
1.8	Check: Monitoring				
1.9	Act: Review				
2	Management of Specific Risks				
2.1	Workplace Safety				
2.2	First Aid				
2.3	Fire and other Emergencies				
2.4	Hazardous Substances				
2.5	Asbestos & Legionella				
2.6	Electricity				
2.7	Manual Handling/Musculoskeletal Risks				
2.8	Noise and Vibration				
2.9	Display Screen Equipment				
2.10	Work Equipment				
2.11	Working at Height				
2.12	Driving				
2.13	Stress				

Points of interest:

1. ISO 9001; audits carried out by awarding body (L.R). 4 X audits 2016, 2 x audits 2017, 2 x audits 2018, 2 x audits scheduled 2019, 1 x completed May 2nd audit was scheduled for 5th December 2019.
2. ISO 1090-2, 2 x audit 2017, 1 x audit 2018, 1 x audit 2019.
3. CMAL quality manager [REDACTED] carried out client audits (authors very positive comments shown above for 2016 & 2017. [REDACTED])

[REDACTED]

Examples of external 3rd party audits

[REDACTED]

4. Various examples of customer satisfaction CMAL, BAE Systems, CalMac, Serco
5. SHEQ audit carried out on behalf of Scottish Government/Administrators (comments made the management system is impressive).