Homes England

The Housing and Regeneration Agency

Date: 17 June 2025
Our Ref: RFI4832
Tel: 0300 1234 500
Email: infogov@homesengland.gov.uk

[redacted]
By Email Only

Dear [redacted]

RE: Request for Information – RFI4832

Thank you for your request for information which was processed in accordance with the Freedom of Information Act 2000 (FOIA). Please accept our sincere apologies for the delay in issuing this response to you. We recognise that the handling of your request has fallen below expectations, and the standards set out in the legislation.

You requested the following information:

Please provide copies of all available documents pertaining to the two SRN4 hovercraft on the former HMS Daedalus, preiovusly owned by Hoverspeed (Sea Containers) until 2005 and [redacted] 2005-2016 site up to the point the Princess Anne was leased to the Hovercraft Museum and the Princess Margaret was demolished.

We wrote to you asking for clarification of the above and you confirmed the following:
Further to your letter, I can clarify I mean letters, agreements, leases, email etc

Response

We can inform you that we do hold the information that you have requested. Please see enclosed to this response Annex A which contains a copy of the information we hold in relation to the two SRN4 hovercrafts. However, we rely on section 40(2), section 42, and section 43(2) of the FOIA to withhold some of the information from disclosure.

Section 40 – Personal information
We have redacted and withheld information on the grounds that it constitutes third party personal data and therefore engages section 40(2) of the FOIA.

To disclose personal data, such as names, contact details, addresses, email addresses and personal opinions could lead to the identification of third parties and would breach one or more of the data protection principles.

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Section 40 is an absolute exemption which means that we do not need to consider the public interest in disclosure. Once it is established that the information is personal data of a third party and release would breach one or more of the data protection principles, then the exemption is engaged.

The full text in the legislation can be found on the following link:

https://www.legislation.gov.uk/ukpga/2000/36/section/40

Section 42 – Legal Professional Privilege

Under section 42(1) of the FOIA Homes England is not obliged to disclose information that constitutes advice given under legal professional privilege (LPP) which protects confidential communications between lawyers and clients which is a fundamental principle of English law.

Section 42 is a qualified exemption. This means that once we have decided that the exemption is engaged, Homes England must carry out a public interest test to assess whether it is in the wider public interest for the information to be disclosed.

Arguments in favour of disclosure:

- Homes England acknowledges there is a general public interest in promoting accountability, transparency, public understanding, and involvement in how Homes England undertakes its work and how it spends public money.

Arguments in favour of withholding:

- Homes England believes that there is a strong argument to withhold the correspondence held in order to safeguard full and frank legal advice, which in turn is fundamental to the administration of justice.

Having considered the arguments for and against disclosure of the information, we have concluded that at this time, the balance of the public interest favours non-disclosure.

The full text in the legislation can be found on the following link:
https://www.legislation.gov.uk/ukpga/2000/36/section/42

Section 43 - Commercial interests

Under section 43(2) Homes England is not obliged to disclose information that would, or would be likely to, prejudice the commercial interests of any party.

The information requested relating to the two SRN4 hovercrafts includes information about their financial, commercial, and economic viability as well as information relating to third party's commercial interests in the hovercrafts. This information engages section 43(2) of the FOIA as it is commercial in nature and its

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release would be likely to prejudice the commercial interests of Homes England and other interested parties to the information.

Section 43 is a qualified exemption. This means that once we have decided that the exemption is engaged, Homes England must carry out a public interest test to assess whether or not it is in the wider public interest for the information to be disclosed.

Arguments in favour of disclosure:

- Homes England acknowledges there is a general public interest in promoting accountability, transparency, public understanding, and involvement in how Homes England undertakes its work and how it spends public money.
- Homes England acknowledges the relevance of the information to matters of national history, and the past, present and future use of the hovercraft.

Arguments in favour of withholding:

- The requested information contains discussions between third parties of the current and proposed use and condition of the hovercrafts, which are the subject of the requested information. Disclosure of the information would be likely to harm the commercial interests of the parties involved. The requested information includes sensitive business information about potential financial expenditure that competitors could exploit if made public which could lead to a loss of competitive advantage for the parties involved;
- Disclosure is likely to be prejudicial to the commercial interests of both Homes England and third parties as there is reasonable expectation that such information provided to Homes England in this capacity would not be disclosed. This may deter future partners from sharing commercial information with Homes England which would harm our ability to negotiate effectively and achieve value for public money;
- Disclosure of the requested information would be likely to deter businesses from sharing information with Homes England if they fear that their confidential information will be disclosed;
- Some information relates to a matter where there is still ongoing works. If this information were released it would be likely to disadvantage the third parties commercial position and have a negative impact on the ongoing development at this site. By releasing this information, it would be likely to have the same negative effect on future commercial activity and other Homes England funding. This would not be in the public interest as it would put developments at risk, inflate prices and damage Homes England's reputation as a partner. This would negatively affect public money and nullify work already undertaken;
- Some of the information contained within the Annex relates to discussions in relation to potential redevelopment of the site. Disclosure may unfairly expose potential developers business strategy to competitors, deterring future bids or partnerships with Homes England which in turn may reduce value for public money; and

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- Homes England has been unable to identify a wider public interest in disclosing the information requested.

Having considered the arguments for and against disclosure of the information, we have concluded that at this time, the balance of the public interest favours non-disclosure.

The full text of the legislation can be found on the following link:
https://www.legislation.gov.uk/ukpga/2000/36/section/43

Right to Appeal

If you are not happy with the information that has been provided or the way in which your request has been handled, you may request an internal review. You can request an internal review by writing to Homes England via the details below, quoting the reference number at the top of this letter.

Email: infogov@homesengland.gov.uk

Information Governance Team
Homes England
The Lumen
2nd Floor
St James Boulevard
Newcastle Helix
Newcastle upon Tyne
NE4 5BZ
United Kingdom

Your request for review must be made in writing, explain why you wish to appeal, and be received within 40 working days of the date of this response. Failure to meet this criteria may lead to your request being refused.

Upon receipt, your request for review will be passed to an independent party not involved in your original request. We aim to issue a response within 20 working days.

You may also complain to the Information Commissioner's Office (ICO) however, the Information Commissioner does usually expect the internal review procedure to be exhausted in the first instance.

The Information Commissioner's details can be found via the following link:

https://ico.org.uk/

Homes England

The Housing and Regeneration Agency

Date: 17 June 2025
Our Ref: RFI4832
Tel: 0300 1234 500
Email: infogov@homesengland.gov.uk

Please note that the contents of your request and this response are also subject to the Freedom of Information Act 2000. Homes England may be required to disclose your request and our response accordingly.

Yours sincerely,

The Information Governance Team
For Homes England

The Lumen, 2nd Floor
St James Boulevard
Newcastle upon Tyne
NE4 5BZ

0300 1234 500
@HomesEngland
www.gov.uk/homes-england

Jones Lang LaSalle Ltd
Latimer House 5-7 Cumberland Place
Southampton SO15 2BH
+44 (0)23 8023 2882

jll.co.uk

s. 40(2)
Head of Area
Homes & Communities Agency
2 Rivergate
Temple Quay
Bristol
BS1 6EH

Our ref MG/jb
Direct line s. 40(2)
Direct fax
Mobile
s. 40(2) @eu.jll.com

10 June 2014

Dear s. 40(2)

Hovercrafts at Daedalus Waterside, Lee-on-the-Solent, Gosport, Hampshire

You have kindly asked us to comment on the affect that the two large hovercrafts currently located at Daedalus Waterside will have on the marketing of this site later this year.

As you are aware we are about to embark on a comprehensive marketing programme for Daedalus Waterside as an employment led mixed- use development opportunity on a site of 80 acres. We expect to generate significant interest from a range of developers, investors and occupiers in various sectors, including marine employment, manufacturers, housing and care home developers/operators and the leisure sector.

One of the advantages of Daedalus is its strategic location adjoining the Solent, which makes it suitable for certain manufacturing companies that require immediate access to the sea. There is a slipway currently in place leading to an apron within the site upon which these two hovercrafts are situated. In order to encourage these types of industries to locate at Daedalus it is, in our opinion, essential that this area is kept clear, and therefore we would advise that these hovercrafts should not remain in-situ.

Further, the Estate is being promoted by the Local Authority, Gosport Borough Council, the HCA and the Local Enterprise Partnership as an employment led mixed-use development, and is the subject of Supplementary Planning Guidance which includes a Draft Masterplan setting out the Council's aspirations for development. In order for the site to be developed in a comprehensive and cohesive way in accordance with this Masterplan again we cannot see how this can be achieved with these two hovercraft located right at the heart of the proposed scheme.

Finally you have asked us to comment on the affect that these two hovercraft, if they remain in-situ, will have on the marketability of Daedalus Waterside and the potential capital receipt.

The private sector would expect these vessels to be removed before acquiring an interest in Daedalus Waterside, and certainly before carrying out any redevelopment or refurbishment of existing buildings in the vicinity. s. 43 s. 43

We would expect their continued presence to have a significant negative affect on the value of Daedalus Waterside as an employment led development, and certainly put off potential developers who may otherwise be interested in acquiring the site.

Please let me know if you would like us to expand further.

Regards

Yours sincerely

s. 40(2)

Director

For Internal Use Only

DAEDALUS HOVERCRAFT MEETING ON 8TH March 2015

LOCATION: Daedalus Conference Centre

PRESENT:

s. 40(2)

s. 40(2)

s. 40(2)

s. 40(2) } HCA

s. 40(2) } HCA

1. The meeting was introduced as to being without prejudice
2. s. 43
3. s. 40(2) confirmed he represented the Succession Trust which is the owner of the Hovercraft and introduced the other two present as colleagues.
4. s. 40(2) was keen to establish direct contact with HCA, to understand the current surroundings of the Hovercraft and to agree a longstop date for the removal of the Hovercraft.
5. HCA provided some background on the disposal progress.
6. s. 40(2) indicated that the Hovercraft Museum was interested in taking the two Hovercraft and asked whether HCA would consider this. HCA agreed it was something it would consider but the discussion would be between the Hovercraft Museum and s. 40(2) in the first instance.
7. We then walked across to Seaplane Square to inspect the Hovercraft.
8. The Hovercraft were fenced off within Mitie's working area. They are cramped with site offices and scaffolding restricting wide working access. It was accepted that moving the Hovercraft would require these to removed. However the Mitie contract is due to complete in May.
9. s. 40(2) raised concerns that the steps up to one side of the Hovercraft was missing assumed "pinched" although it was unclear whether from s. 40(2) that this was the case, or that the steps laid to the side were the missing steps.
10. s. 40(2) went inside and verified that the seven engines (three on blocks) were present albeit the Hovercraft Museum had apparently been storing stuff inside as well. (To s. 40(2) concern about unauthorised use)
11. Discussion was had about end use of the Hovercraft. It was clear that various options were proposed by s. 40(2) but none had been determined although all related to using as operational transport for freight.
12. Discussion about moving the Hovercraft offsite and s. 40(2) then went into detail. This included the need to remove lose items such as engines to reduce weight and then about the use of puffers used in grain stores which could be lift the hovercraft. They would then be able to be towed down to the slipway. From there they could be floated onto a raft or barge and taken to Southampton port or directly on to a ship.

13. It was agreed that a date of the 31st September 2015 would be workable for both parties for the date by which time the Hovercraft must be removed as defined in the Consent Order.
14. s. 40(2) requested unrestricted access to the site in order to make preparations for their removal.
15. He also wanted confirmation of when Mitie would be off site.

Overall the discussion was held on good terms. s. 40(2) [redacted] But otherwise it was held on reasonable terms.

s. 40(2) 8/4/15

File Note: MEETING WITH s. 40(2)

Date 26/6/15
Attendees
s. 40(2)
s. 40(2)
s. 40(2)
s. 40(2)
Location: Daedalus

The purpose of the meeting was ostensibly to inspect the contents of the two SRN4s and discuss programme for removal. It was stated halfway through that the conversations were without prejudice. s. 40(2) concern had also been that as HCA was disposing of the site whether he ought to be talking to the developer. HCA confirmed that HCA retained control.

The two hovercraft were easily accessed with no complaints. The stairs had been fitted and fencing removed.

Once inside s. 40(2) complained that the Hovercraft Museum were now using both vessels for storage and had moved his spare parts around within the SRN4s. These had previously been stored spread out to spread the weight but were now pushed into one end. That and the lack of locks on the various doors were s. 40(2) concern.

Discussions were had as to removal of the SRN4s. s. 40(2) stated there were 3 steps:

1. Removal of the Hovercraft Museum's exhibits. s. 40(2) was to make contact and arrange. Suggested timescale of 4 weeks.
2. s. 40(2) could then arrange transport company (Bishopsgate) to assess picking up spares/parts and then organise the same. Would require flat bed lorries, fork lift and small crane. Again probably 4 weeks.
3. Only then can the prospect of moving the SRN4 be considered.

s. 40(2) agreed that he would sign the consent order with longstop date of 31st December 2015 once Step 1 above was completed. He confirmed that weather was not an issue.

We also discussed the possibility of s. 40(2) not moving them and either gifting them to the Museum or the consent order running out and HCA gaining control. s. 40(2) wanted to know if the Museum had a future on the site and therefore whether gifting one or more to them would be possible. HCA confirmed the intention to retain them on site but that any conversation would need to be had between the Museum and s. 40(2) HCA's priority was to secure the SRN4s removal at this point.

HCA pointed out the fencing had been removed and steps put in which increased risk of others accessing the SRN4s. s. 40(2) confirmed that the security and safeguarding of them was at his own risk.

HCA agreed s. 40(2) may come to site individually to inspect the SRN4s and on site security has been informed.

s. 40(2) said he would keep HCA informed.

Daedalus Hovercrafts briefing – 1st February 2016

Daedalus is a former airbase in south Hampshire which is being transformed into the area's largest employment site. Since we acquired the land in 2011, the HCA has played a significant role in turning Daedalus airfield into the Solent Enterprise Zone. By 2026, it is estimated that 3,500 jobs will be created, turning the area into a destination of choice for advanced manufacturing and technology businesses.

The SRN4 hovercrafts are situated on the southern part of the sitexxx of the site. The HCA owns this land. They are the last remaining SRN4 hovercrafts, which were used as cross channel vehicle ferries. Both crafts are approximately 35 years old and show signs of significant degradation. It is unlikely they would ever be brought back into commercial service.

We have been seeking removal of the hovercrafts in order to regenerate the land for homes and jobs. The existence of the hovercrafts affects the viability of development plans. HCA secured p~~P~~lanning permission ~~was approved~~ last week for ~~a large~~ 70,000 sq m of employment space and 200 homes.

NB: Whilst the existence of the hovercrafts may affect viability of future employment space, it will not affect the 200 homes to be directly commissioned at Daedalus.

CURRENT MEDIA STATUS

There is now strong media and a Change.org petition has been set up by the Hovercraft Museum Trust to "Save the Princess Anne" (one of the Hovercrafts). A BBC South piece which broadcast on Friday stated that we had given the museum 24 hours' notice to come up with an alternative to removing the hovercrafts from our site – **which is incorrect** - and mentions the museum's hopes to save one.

As a result, campaigners have been using social media to share the petition, which currently (Monday morning) has 7,500 signatories, with people stating that they are: "an important

part of our history that should not be destroyed." The tweets are from a selection of people, including military historians with a strong following.

The key decision we have to make now is agree with partners whether we remove one or both of the hovercraft from the site.

OPTIONS

Option 1: HOVERCRAFT MUSEUM
A proposal from the museum asks for an HCA grant to lease one of the hovercrafts. The other would be removed.

The letter states: *"Like Concorde, they are examples of British engineering taken to the extreme, the ultimate development of an idea of which, if at all possible, one should be protected for future generations to enjoy. We understand that it is not viable for both craft to be saved from destruction, and that The Princess Margaret is the logical choice for breaking up and removal.*

What the Hovercraft Museum Trust, propose is as follows:

1. That HMT and it's volunteers assist in the disposal of Margaret, first identifying and helping in the removal of parts and equipment which may have value and can be sold on behalf of HCA s. 42 s. 40(2)
2. That HCA grant an (initial) three year lease on Princess Anne to HMT.
3. That HMT undertake to stabilise the craft with regards hazardous materials, structure, access and health and safety requirements.
4. HMT will take on the responsibility, maintenance and liability of the craft. Additional volunteers can be sourced for this work.
5. HMT shall restore the craft to a safe, clean and tidy appearance.

We are obliged through the S.106 agreement that we recently entered into with Gosport BC (as part of the outline consent) for us / our developer to offer the hovercraft museum a lease to remain on the site, but the exact detail is to be agreed. This is to ensure the museum can continue to operate on the site, but there is no reference to the SRN 4 hovercrafts or the need to offer space that can accommodate them.

Option 2 – REMOVE

This option frees up the site for development. We have been informed by our experts that we commissioned that the SRN 4 hovercrafts could not be moved intact, so there is a chance that they may need to be broken up in situ – therefore in public. We would most likely need to pay for the crafts to be removed. **This has significant PR implications. The issue is an emotive one locally, and amongst naval historians who want to see the hovercrafts protected.**

Option 3 – REMOVAL AND SELLING TO AN EXTERNAL PARTY:

We have been approached by at least two interested parties who are looking to purchase the SRN 4 hovercrafts. Both offers are in their infancy. We would need to carry out serious due diligence work to check the viability of these offers.

THE WIDER SITE

There is the need for a clear strategy to redevelop the remaining 23 hectares (57 acres) ~~70 acres~~ of the Daedalus Waterfront site that we own. s. 43 [redacted]

Since then, Daedalus has been announced as one of the pilot schemes for Direct Commissioning. Note that the residential element is a separate area of the site from where the hovercraft are located, and one doesn't impact on the other. s. 40(2) [redacted] is visiting the site to see the residential element on the 12th February.

s. 40(2)

From: s. 40(2) <s. 40(2)@gbhoverservicesint.co.uk>
Sent: 01 February 2016 12:37
To: s. 40(2)
Subject: SRN4 Hovercraft Letter
Attachments: scan0032.pdf

Importance: High

Good Afternoon s. 40(2)

Please find GB Hoverservices International Ltd, Official proposal Letter attached for the SRN4 Hovercraft.

We look forward to hearing from you.

Kindest Regards

s. 40(2)
GB Hoverservices International Ltd, 13 The Crossway, Ealing, London, W13 0AX
Tel: s. 40(2)
Email: s. 40(2) *@gbhoverservicesint.co.uk*

RFI4832 - Annex A

GB Hoverservices International Ltd,
13 The Crossway
Ealing, London
W13 0AX
Tel: s. 40(2) [redacted]
Email: info@gbhoverservicesint.co.uk
Web: www.gbhoverservicesint.co.uk

01-02-2016

Re: SRN4 MK3 Hovercraft "The Princess Margaret & The Princess Anne"

Dear s. 40(2) [redacted]

Following GB Hoverservices International Ltd e-mail to you on Friday 29th January 2016 @ 20:59Hrs, and our telephone conversation this morning, GB Hoverservices International Ltd hereby confirms our offer and proposal for the Two SRN4 Hovercraft "The Princess Margaret & The Princess Anne" below.

GB Hoverservices International Ltd is prepared to offer "HCA" Homes and Community Agency between £s. 43 [redacted] GBP and £s. 43 [redacted] GBP for both SRN4 Hovercraft, subject to an inspection.

As part of the offer, GB Hoverservices International Ltd will remove the SRN4 Hovercraft from Lee-on-Solent, our Engineering Department have had many years' experience moving craft in similar condition to the SRN4 Hovercraft and we have already planned how we would remove both craft from your premises in the shortest possible time.

We would be ready to start the work straight away, we have a team ready, and we hope that our proposal will be of key interest to HCA as it solves any future problems with the craft for HCA as it means you don't have to undertake the costly work to remove them "Scrap them" onsite, where as our proposal sees HCA get paid for the sale of the craft, removal from site and they are preserved for the British Nation.

Our alternative site for the craft is already available, which means there will be no delays in removing the craft. Also as we intend to keep the craft in storage the "Hovercraft Museum" also achieves their goal of keeping on preserved for the nation and keeps everybody happy.

We are available to meet with you at any time, and can conclude this business quickly, smoothly and without any prolonged hassle.

We look forward to hearing from you

Kindest Regards

s. 40(2) [redacted]

GB Hoverservices International Ltd.

s. 40(2)

From: s. 40(2) <s. 40(2)@gbhoverservicesint.co.uk>
Sent: 08 February 2016 22:07
To: s. 40(2)
Subject: GB Hoverservices Int - SRN4 Proposal - Update
Attachments: GBHS INT - SRN4 HCA Proposal 08-02-16.pdf

Importance: High

Good Evening s. 40(2)

Please find attached, more detailed proposal from GB Hoverservices International Ltd, Regarding the two SRN4 Hovercraft. Including a firm offer for both craft.

Kindest Regards

s. 40(2)
GB Hoverservices International Ltd, 13 The Crossway, Ealing, London, W13 0AX
Tel: s. 40(2)
Email: s. 40(2) *@gbhoverservicesint.co.uk*

HOVERSERVICES INT

Strictly Private & Confidential
SRN4 Mk3 Hovercraft
Proposal for
"HCA" – Homes and Community Agency
By
GB Hoverservices International Ltd

GB Hoverservices International Ltd
13 The Crossway
Ealing, London,
W13 0AX
Company No: 09764583

SRN4 Mk3 Hovercraft Proposal

Date: 08-02-16

FAO: s. 40(2) & HCA Board

Dear s. 40(2)

Following GB Hoverservices International Ltd Initial letter to you on February 1 2016, we are pleased to present to you a more detailed report of our intentions with the SRN4 Mk3 Hovercraft "The Princess Anne & The Princess Margaret".

GB Hoverservices International Ltd is prepared to offer Homes & Community Agency "HCA" the sum of £s. 43 GBP for both SRN4 Mk3 Hovercraft "The Princess Margaret & The Princess Anne". GB Hoverservices International will remove the SRN4 Mk3 Hovercraft from Lee-on-Solent within 6 Months.

Our Engineering department has already formulated a work plan of how this work will be done.

To give HCA a brief summary of what our intentions are, we will start by further reducing the weight of the craft, by removal of components "Propellers, Pylons, Rudders, Gearboxes, Transmissions Etc." This will significantly decrease the overall weight of the craft; we then will proceed with the removal of all unrequired items from the crafts interior, to further reduce the weight profile of the craft.

Once this has been achieved we will then install air-blowers onto the car deck, which will be directed into the lift fan intake system, which will then provide AIR into the plenum chamber and into the main skirt. We will then lift the craft using the air-blowers to move to the craft, down and over the slip way and onto a Barge which will be brought into position for the craft to be floated onto and then removed by sea.

With the craft being taken by barge there will be no major objections from the MCA "Maritime and Coastguard Agency" as the craft will NOT be running under their own power, but on external power.

We have estimated that "The Princess Margaret" can be removed within 10 – 14 Weeks, the second SRN4 "The Princess Anne" again within 8 – 10 Weeks.

Once the Prep work on The Princess Margaret is complete, we will start work immediately on The Princess Anne, to repeat the procedure. As with any engineering procedure the second running of the event normally runs much smoother, as we are already aware of the issues found with the first craft. Whilst the "The Princess Margaret" is being repositioned work will continue on "The Princess Anne". This way we can keep things moving as quickly as possible.

Once we have relocated the first SRN4 "The Princess Margaret" Moved, we will then send the Air-blowers back to be fitted to the second SRN4 "The Princess Anne" to repeat the process.

GB Hoverservices International Engineering Department has been working with Hovercraft for over 30 Years, with SRN4, SRN5, SRN6, AP1-88-80, -100, -100s, -200, -300, -400 Series Hovercraft. Our Chief Engineer has built over 8 AP1-88 series Hovercraft, conducting refits on an open beach to a fully fitted factory, and has had many years' experience with these machines and knows them like the back of his hand.

Once the craft have reached their new home, GB Hoverservices International Ltd, will undertake a complete assessment of the craft, and then will choose the better of the two craft, to return to operational condition.

We have estimated this will process will take between 2 – 4 years to complete the process of restoring the one craft to operational condition, and we will be using components from the 2nd craft to help return the 1st craft back to operational condition.

As like the Vulcan Bomber it was returned to the skies, these craft can reach this potential however we feel it will take two craft to make one. GB Hoverservices International under NO Circumstances will scrap the 2nd craft. We will turn the second craft into a static display for the public to view and wonder round the magnificent machine.

GB Hoverservices International would like to preserve BOTH SRN4's as they are a great piece of History and British Engineering. Like Concorde they all exist and have been saved. The final two SRN4's deserve the same.

Also undertaking the work to scrap / dispose of the N4's will be an expensive and messy task. GBHS INT hopes that our proposal will be of great interest to HCA, has it removes both N4's from your site at Lee-on-Solent and also HCA receive good money for the craft, and do not have to entertain the costly issues of scrapping and removing the craft.

We are happy to answer any questions that HCA may have, and are available to meet with HCA at short notice.

We look forward to hearing from you

Kindest Regards

s. 40(2)

GB Hoverservices International Ltd

s. 40(2)

From: s. 40(2)
Sent: 09 February 2016 10:03
To: s. 40(2) s. 40(2)
Subject: FW: HCA Press Release - Hovercraft
Attachments: Press statement.docx

Please see attached press statement from Museum – can you let me know asap if this is accurate? Thank you, s. 40(2)

From: s. 40(2) [mailto:s. 40(2)
Sent: 09 February 2016 10:00
To: s. 40(2)
Cc: s. 40(2)
Subject: RE: HCA Press Release - Hovercraft

Hello s. 40(2)

Yes, just about in one piece here still, much calmer today!

Please find attached our press statement, feel free to use what you would like from it and please contact me if you would like any further information

Best Regards

s. 40(2)

From: s. 40(2) hca.gsi.gov.uk
To: s. 40(2)
CC: s. 40(2)
Subject: RE: HCA Press Release - Hovercraft
Date: Tue, 9 Feb 2016 09:39:49 +0000

Morning s. 40(2) s. 40(2)

Were you able to draft a quote for the press release last night? I'd like to send it out today if I can.

Many thanks, s. 40(2)

From: s. 40(2)
Sent: 08 February 2016 11:44
To: s. 40(2)
Cc: s. 40(2)
Subject: HCA Press Release - Hovercraft

Hello s. 40(2) I hope you're well.

I work in the communications team at the HCA and have been passed your details by s. 40(2) I'm pleased to hear discussions are progressing positively re: your proposal for one of the hovercraft, and we're keen to get a press release out in the next couple of days if we can.

I would really like to include a quote from the Museum to reflect the current position and the progress that is being made. Is this something you would be able to send over to me today? I will of course send you a final version of the press release before it goes out.

Please do give me a call if you'd like to discuss. My numbers are below.

Many thanks and very best wishes

s. 40(2)

s. 40(2)
s. 40(2)
Homes and Communities Agency
s. 40(2)
T: 0300 1234 500 (switchboard/out of hours)
www.gov.uk/hca / blog / twitter / linkedIn / newsletter

In 2014/15 the HCA helped build more than 50,000 new homes in England

Made enough public sector land available for more than 8,800 new homes to be built

And helped complete a further 27,785 home sales through Help to Buy equity loans

Restoration – Preservation – Education
the Hovercraft Museum
Lee-on-the-Solent, Hampshire, England

The Hovercraft Museum Trust

Daedalus Site,

Lee-on-the-Solent,

Hants PO13 9NY

9th February 2016

Press Statement

The trustees of The Hovercraft Museum Trust are delighted that after submitting our proposal and having worked with the Homes & Communities Agency we are able to now move forward in preserving the last of the giant cross channel Mountbatten class hovercraft, SRN4 'The Princess Anne,' for the nation.

The agreement between the two organisations will allow the Hovercraft Museum Trust to take ownership of the craft once the structure has been stabilised and the exterior has been restored to standards as set down in an agreed schedule.

The passionate and overwhelming response from the public has made the last week an emotional but exciting one and for the first time since the SRN4's were brought to Daedalus we can now maintain and restore them. As the work progresses, it will now be possible for us to conduct tours for the public around these incredible machines.

The Trust understands the need to develop the rest of the site at Daedalus and is keen to work with all partners to ensure this happens smoothly whilst also protecting a unique collection of British engineering that is of national importance.

What the Trust needs now more than ever is to welcome additional volunteers to join our small but enthusiastic team, not just to restore the 'The Princess Anne' but also to care for the other 65 hovercraft in the collection.

Whether you can paint, clean, work on mechanics and electrics, can operate the tills on the shop or the gate or act as one of our friendly stewards we will be very pleased to hear from you.

This agreement means that we now have three years to restore the Princess Anne to a stage where ownership can be passed to the Trust on a permanent basis. The agreement wins us a respite, but the importance of finding the funds and volunteers to complete the work cannot be overstated. In the short term, 'The Princess Anne' will now need work done by both volunteers and professionals to make her roof watertight and to make her structurally sound as well as sprucing up her exterior.

If you feel you can help with a donation, please visit www.gofundme.com/x8nr8z9w or for volunteering at the museum please email enquirires@hovercraft-museum.org

Best regards to you all

The Trustees

s. 40(2)

From: s. 40(2) s. 40(2) @gbhoverservicesint.co.uk>
Sent: 01 March 2016 10:59
To: s. 40(2)
Subject: RE: GB Hoverservices Int - SRN4 Proposal - Update
Attachments: HCA SRN4 Mk3 TPM Proposal 01-03-16.pdf

Importance: High

Good Morning s. 40(2)

Please find attached document with proposal for SRN4 001 Mk3 The Princess Margaret.

Yes, I can confirm GB Hoverservices International is willing to accept the one craft "PRINCESS MARGARET". Also GBHS INT is willing to work with Hovercraft Museum to supply them with the requested propellers from The Margaret for The Anne.

I look forward to hearing from you

Kindest Regards

s. 40(2)
GB Hoverservices International Ltd, 13 The Crossway, Ealing, London, W13 0AX
Tel: s. 40(2) ***Email:*** s. 40(2)*@gbhoverservicesint.co.uk*
Web: *www.gbhoverservicesint.co.uk*

From: s. 40(2) [mailto:s. 40(2) hca.gsi.gov.uk]
Sent: 01 March 2016 08:53
To: s. 40(2)
Subject: RE: GB Hoverservices Int - SRN4 Proposal - Update

Dear s. 40(2)

Thank you for that. To confirm our subsequent conversation, you would be willing to take one hovercraft only and will provide an updated proposal along those lines.

Kind regards

s. 40(2)

s. 40(2) **MRICS**
Senior Development Manager
Homes and Communities Agency, Bridge House, I Walnut Tree Close, Guildford, GU1 4GA

s. 40(2)

From: s. 40(2) [mailto:andrew@gbhoverservicesint.co.uk]
Sent: 08 February 2016 22:07
To: s. 40(2)

Subject: GB Hoverservices Int - SRN4 Proposal - Update
Importance: High

Good Evening s. 40(2)

Please find attached, more detailed proposal from GB Hoverservices International Ltd, Regarding the two SRN4 Hovercraft. Including a firm offer for both craft.

Kindest Regards

s. 40(2)
GB Hoverservices International Ltd, 13 The Crossway, Ealing, London, W13 0AX
Tel: s. 40(2)
Email: s. 40(2) *@gbhoverservicesint.co.uk*

HOVERSERVICES INT

Strictly Private & Confidential

SRN4 Mk3 "The Princess Margaret" Hovercraft

Proposal for

"HCA" – Homes and Community Agency

By

GB Hoverservices International Ltd

GB Hoverservices International Ltd
13 The Crossway
Ealing, London,
W13 0AX
Company No: 09764583

SRN4 Mk3 Princess Margaret Hovercraft Proposal

Date: 01-03-16

FAO: s. 40(2) & HCA Board

Dear s. 40(2)

Following your email to GB Hoverservices International Ltd on 1st March 2016, GB Hoverservices International Ltd can confirm that we would be willing to take one craft only "The Princess Margaret".

GB Hoverservices International Ltd is prepared to offer Homes & Community Agency "HCA" the sum of £s. 43 GBP for SRN4 Mk3 Hovercraft "The Princess Margaret". GB Hoverservices International will remove the SRN4 Mk3 Hovercraft from Lee-on-Solent within 4 Months.

Our Engineering department has already formulated a work plan of how this work will be done.

To give HCA a brief summary of what our intentions are, we will start by further reducing the weight of the craft, by removal of components "Propellers, Pylons, Rudders, Gearboxes, Transmissions Etc." This will significantly decrease the overall weight of the craft; we then will proceed with the removal of all unrequired items from the crafts interior, to further reduce the weight profile of the craft.

Once this has been achieved we will then install air-blowers onto the car deck, which will be directed into the lift fan intake system, which will then provide air into the plenum chamber and into the main skirt. We will then lift the craft using the air-blowers to move to the craft, down and over the slip way and onto a Barge which will be brought into position for the craft to be floated onto and then removed by sea.

With the craft being taken by barge there will be no major objections from the MCA "Maritime and Coastguard Agency" as the craft will NOT be running under their own power, but on external power.

We have estimated that "The Princess Margaret" can be removed within 10 – 16 Weeks, we are aware that the Hovercraft Museum Trust has expressed interest in obtaining the propellers mounted on the Princess Margaret. We would be happy to supply the Hovercraft Museum Trust with the propellers, from the Margaret, however we will need to keep the Pylons on the Margaret as they are in better condition to be returned to operational condition.

GB Hoverservices International Engineering Department has been working with Hovercraft for over 30 Years, with SRN4, SRN5, SRN6, AP1-88-80, -100, -100s, -200, -300, -400 Series Hovercraft. Our Chief Engineer has built over 8 AP1-88 series Hovercraft, conducting refits on an open beach to a fully fitted factory, and has had many years' experience with these machines and knows them like the back of his hand.

Once the Princess Margaret has reached her new home, GB Hoverservices International Ltd, will undertake a complete assessment of the craft, in preparation for returning to operational condition.

We have estimated this will process will take between 2 – 4 years to complete the process of restoring the one craft to operational condition.

As like the Vulcan Bomber it was returned to the skies.

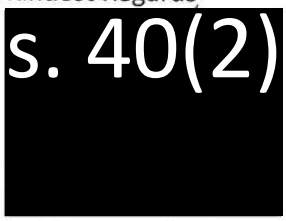
GB Hoverservices International would like to preserve The Princess Margaret as she is a great piece of History and British Engineering. Like Concorde they all exist and have been saved. The Princess Margaret deserves the same.

Also undertaking the work to scrap / dispose of the N4's will be an expensive and messy task. GBHS INT hopes that our proposal will be of great interest to HCA, as it removes one SRN4 from your site at Lee-on-Solent and also HCA receive good money for the craft, and do not have to entertain the costly issues of scrapping and removing the craft.

We are happy to answer any questions that HCA may have, and are available to meet with HCA at short notice.

We look forward to hearing from you

Kindest Regards



GB Hoverservices International Ltd

Maritime Services International
Surveying | Consultancy | Investigation

Report of

s. 40(2)

On the Condition of the Hovercraft

Princess Anne

Princess Margaret

11 March 2016

Specialist Field:	Marine Consultant and Surveyor
On behalf of:	Homes and communities Agency
Subject:	Condition / Cost of Disposal

Maritime Services (International) Limited
E3-E5 Heritage Business Park, Heritage Way, Gosport, Hants, PO12 4BG
(T) 02392 524490

Contents

1. Introduction

1.1 Authors Details

My full name is s. 40(2). I work for Maritime Services (International) Limited a firm of Consulting Naval Architects, Marine Engineers, Ship and Cargo Surveyors. I attended the two hovercrafts at the Daedalus site on 9 March 2016. The visit was arranged with the Hovercraft Museum and facilitated by s. 40(2). He was present throughout. The weather was wet and blustery.

1.2 The Inspection was Planned to View

- The external condition of the two hovercrafts
- The structural integrity of the two hovercrafts and components
- An assessment of the feasibility of moving the crafts
- An appraisal of the commercial viability of moving or disposing of the crafts

2. Instructions

2.1 Maritime Services (International) Limited was instructed by the Eversheds LLP Solicitors on behalf of the Homes and Communities Agency to sight and visually inspect two large hovercraft of the type 'SRN 4' in storage at the Daedalus site on the Gosport peninsula. The purpose of the inspection was to establish the basic condition of the hovercrafts 'PRINCESS ANNE' and 'PRINCESS MARGARET'. The view of the condition was to be used to further inform options and cost of disposal or residual value.

3. Conduct of the Inspection

3.1 Each hovercraft was inspected visually from the outside by walking around their spread skirts. 'PRINCESS ANNE' was additionally examined from a ladder giving closer views of the side decks and superstructure. The Hovercraft Museum was prevailed upon to allow brief internal access to 'PRINCESS ANNE' for completeness.

3.2 The hovercrafts are sister vessels built in successive years 'PRINCESS MARGARET' in 1968 and 'PRINCESS ANNE' in 1969. They were extended and converted to the 'Mk 3' standard in 1977 and 1978 respectively.

3.3 They are mostly built using aircraft construction techniques. At the inception of the hovercraft service there was little formal certification. Oversight was conducted against standards and the hovercraft licensed by the Civil Aviation Authority. Standards were not onerous as the crafts were viewed as being at the lower end of the technical spectrum. Many of the methods applied were innovative. Weight was at a premium.

3.4 At Hoverspeed the craft were locally maintained. Again the standards of repair were developed 'in house' as the operators formed the core of expertise in this arena.

3.5 When responsibility for the hovercrafts passed to the MCA (Maritime and Coastguard Agency) in 2000 the commercial vehicle service ceased. The craft did not conform to the regulations required for vessels operating in passenger service and it was not economic to continue. All other similar vessels were broken up and scrapped.

4. Findings of the Inspection

4.1 Light aluminium alloy with a degree of resistance to salt water corrosion, duralumin was use widely for the structural members and shell plating. Joins are of riveted overlap in the main, but there are areas where steel bolts have been used instead. These have corroded and present a risk of erosion through the interaction of dissimilar metals. Many of the curved sections have been moulded from FRP (Fibre Reinforced Plastic). These are riveted or bolted to the aluminium sections. The areas of the joins are subject to concentration of stress and cracking has occurred in the vicinity of some joins. Other areas such as the bow doors have had extensive FRP overlays. These are likely to of been reinforcement over areas of damage or cracking.

4.2 The construction of the side decks and skirt forming the outer chamber of the plenum is cruder. There is no equivalent on an aircraft and every effort was made to save weight using early composite techniques. The decks are of balsa wood and mesh overlaid with FRP over duralumin struts. The wood / fibre composite is delaminating owing to unchecked water ingress over a prolonged period. In some areas it is broken and/or missing.

4.3 The skirt is of nylon mesh overlaid with neoprene. The skirts of both crafts have aged and lost flexibility. The neoprene has ‘perished’ and is cracking in numerous places. The skirt is not serviceable. The skirt is attached to the hovercraft by ‘hinges’ consisting of two stainless steel plates joined by a steel pin. Most of the pins and the associated fastenings for the plates are corroded.

4.4 The superstructure is showing extensive paint blistering, especially in the vicinity of joints and rivets. There are numerous dents and deformations and some splits in areas of the metal skin. The majority of the doors are damaged with splitting of the skin from the frame. Steel hinges and fastenings are heavily corroded, through rusting. Internal examination of the deckhead showed white powdery residue on the alloy. This is a corrosion product made up of hydroxides of aluminium. It is characteristic of poor preservation and long exposure to a salt water environment.

4.5 Internal inspection of 'PRINCESS ANNE' showed pinholing in the deckhead above the car deck, through which daylight was visible. There is no fire suppression system or structural fire protection of any significance. The deck of the vehicle deck has in places been overlaid by doubling plates. This is a crude form of repair which can itself form further corrosion hot spots.

Examination of the engine compartments revealed that all the main engine machinery, associated auxiliaries and auxiliary power units have been removed. This was reported by the museum as having been achieved between 25-28 December 2015 by the previous Owner.

4.6 'PRINCESS ANNE' is in a more sheltered position than 'PRINCESS MARGARET'. She is in marginally better condition by appearance, but missing more component parts. The general state of repair in the report of s. 40(2) dated 9 September 2014 is corroborated.

5. Further Steps toward Initial Safety Certificating by the MCA

5.1 Hovercrafts used at sea operate in a harsh environment where corrosion is unavoidable. Hovercrafts are in a similar way to aircrafts, subject to high vibration levels and repeated wave impacts. This leads to a high risk of materials reaching the end of their safe working life in short periods through the process known as fatigue. Given the lack of maintenance and records, much of the structure will require extensive, detailed examination. To achieve this most of the coatings will need to be removed especially in way of joints and shaping. Any covering of FRP will also have to be removed. The metal and FRP components will then need to be analysed using NDT (Non-Destructive Testing) techniques using specialist ultrasound equipment and dye penetrant crack detection to ensure their integrity.

5.2 There is little evidence that any effort has been made to preserve the hovercrafts and corrosion of exposed components has proceeded unchecked in the marine environment adjacent to the beach. Many of the steel components will need to be replaced, as will heavily corroded areas of duralumin. This will be costly.

5.3 There is no existing production line. The vast majority of replacement component parts will need to be sourced by a bespoke manufacture. Expensive items include; proteus gas turbine which are obsolescent, the missing propellers and the skirts which have lost much of their flexibility and resilience.

5.4 Re-commissioning an SRN 4 may be likened to restoring an aircraft of similar age.

6. Feasibility of Moving the Craft

6.1 The two hovercrafts are stored ashore at the top of a disused hovercraft slipway in a location surrounded by buildings. They are of a size such that their removal can only be achieved by:

a. Recommissioning the slipway:

i Removing the security fencing.

ii Closing the road.

iii Dragging / pushing the hovercraft to the sea for onward travel.

b. Demolishing buildings to allow the movement by specialist heavy vehicle.

c. Dismantling of the craft into transportable sections for re-assembly elsewhere.

6.2 Any independent onward movement by sea would require extensive refitting, inspection certification and setting to work. The MCA have already indicated that the regime would be exacting. A reduced but still considerable package of work and inspection would be required just to float the vessels for movement to a barge and onward tow as shown in an extract from an MCA letter dated 29 August 2014:

> Operational movement of the craft for any purpose (e.g. one-off movement), or transit by sea must not be attempted without either full Statutory Certification, or a certificated conditional General Exemption and Permit to Operate (in the case of movement in a deficient condition for disposal or other purpose). This again will require detailed survey and inspection by MCA surveyors, and most likely rectification of a number of unacceptable deficient matters by the owner/ operator to ensure safe and secure transit. Note that issuance of any statutory certification is only carried out on the basis of survey for which statutory fees would be applicable.

6.3 Demolishing other buildings on the site and hiring specialist transport is also likely to be unattractive financially and would require the agreement of the Owners and Leaseholders.

6.4 Dismantling for re-assembly elsewhere will be time consuming and expensive. The most likely outcome is that the project will runout of money or energy long before completion and the result will be a partially dismantled hovercraft in need of final disposal.

7. Disposal Options

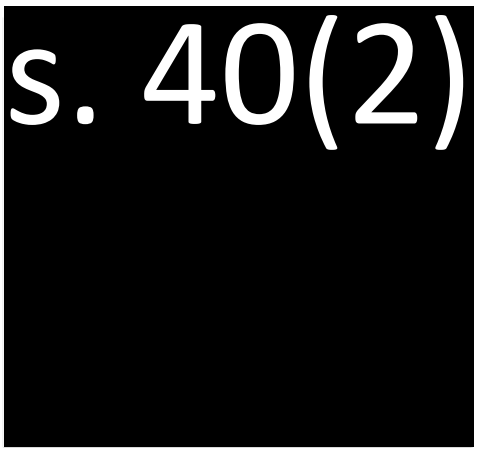
The SRN4 does not meet any classification society rules or standards required by the Flag State authority, the MCA, to operate at sea. Operation ceased in 2000 because of this. The changes required would almost inevitably be impractical owing to the increase in weight generated by structural changes, fire protection and safety regulation. The possibility of a return to commercial service should be discounted as the cost would run to tens of millions of pounds, a capital outlay far in excess of the returns available in the marine transport arena. The American LCAC, which is one quarter of the size, costs in the region of $20M. Worldwide few commercial hovercraft operations have remained commercially viable. Those that are rely on diesel engine propulsion and usually subsidy.

Any potential purchaser would need to undertake significant investment in order to meet the MCA's requirements to even hover the craft or move them down the slipway to the sea. This is likely to deter the naïve if amateur enthusiast seeking a form of floating attraction, store or residence. Should the hovercraft need to remain afloat the level of certification required would increase and the inspection regime punitive.

Commercial dismantling for residual scrap value is likely to be unattractive. All the valuable items such as auxiliaries and engines have already been disposed of. There seems little if any value in the seats and fittings. Duralumin is not valuable as a recycled material. The low price of metals in the world market renders the effort needed expensive. The additional costs of separating composites, removal of the skirt and the subsequent disposal of the waste will further add to the bill. The most likely outcome is that the Owner will need to pay contractors to complete the work. In light of the sums paid to dispose of other craft listed in s. 40(2) report the cost could be anticipated to exceed £s. 43.

8. Conclusion

The hovercrafts are reported as last changing hands for a negligible sum of £1. They have no residual value as commercial vessels or as scrap metal, especially since the removal of the machinery.



s. 40(2)
11 March 2016

Appendix 1 - Photographs

Photograph 1 – ‘Princess Anne’

Photograph 2 – ‘Princess Margaret’

Photograph 3 - Typical Condition

Photograph 4 - Damaged lift fan showing corroded bolts

Photograph 5 - Exhausts removed from empty engine compartment ‘Princess Margaret’

Photograph 6 - Damaged skirt ‘Princess Anne’

Photograph 7 - Damage to side deck ‘Princess Anne’

Photograph 8 - Deckhead interior showing corrosion deposits

Photograph 9 - Car deck showing lack of structural fire protection

Photograph 10 - Empty machinery compartment ‘Princess Anne’

s. 40(2)

From: s. 40(2)
Sent: 16 March 2016 18:33
To: s. 40(2)
Subject: RE: Desktop Valuation of Two Hovercrafts

Hi s. 40(2)

Well you don't see this type of valuation every day coming across the desk! s. 40(2)
Clearly I am not qualified to value this type of asset, but I can provide a level of independent observation as I am familiar with issues impacting on marine structures and craft.

Observations:

Q: Is the valuer qualified to undertake this assessment?

A: Yes - The surveyor (valuer) is an associate member of the International Institute of Marine Surveying (IIMS). The IIMS is the professional body for marine surveyors. The IIMS website confirms s. 40(2) is a member - Membership Number: s. 40(2)
AssocIIMS qualification includes:

- Individuals practicing marine surveying, or consultancy for a minimum of three years and who do not yet fulfil the conditions to become Full Members.
- Full Members who have decided to reduce their involvement in the Institute.
- Individuals whose qualifications or experience shall be considered appropriate by the Professional Assessment Committee, (as beneficial to the support of the Institute).
- Associate Members may use the designation AssocIIMS after their names.

It could be argued that a more experienced member with MIIMS designation should have been appointed; however, the CV of s. 40(2) demonstrates significant maritime experience and I have no reason to doubt his credentials and suitability to complete this task.

Q: Is a marine survey inspection appropriate for these craft?

A: Yes – although the craft were probably originally subject to CAA (aircraft) worthiness requirements, official representation subsequently moved to the MCA – therefore a marine survey is appropriate.

Q: Is the report appropriate?

A: Yes – the surveyor appears to have undertaken an appropriate and proportionate inspection bearing in mind the state and location of the craft.

Q: Is the de minimus valuation appropriate?

A: The surveyor makes a compelling argument that:

- the condition of both craft are poor
- external metalwork is showing significant deterioration
- previous repairs will need to be revisited
- there is likely to be significant structural weakness
- components of value have been previously moved
- the metalwork and other salvageable items are of low value
- removal of the craft will be difficult and expensive
- reconditioning or restoration costs are likely to be prohibitively expensive
- there is likely to be a dismantling cost which would outweigh any scrap value
- the historic significance of the craft is noted.

Considering the craft's historical significance, if the craft were offered to the open market it is highly unlikely that an informed purchaser acting on behalf of a well-funded association or rival museum would pay more than the de minimus value - due to the condition, cost of restoration and transportation constraints. It is unlikely that an

independent purchaser unconnected to a museum or well-funded association would have the resources available to ensure the long-term preservation of one or more of the craft.

In conclusion - based on the written and photographic evidence provided, I support the opinion of the valuer.

Trust this helps. Happy to discuss.

s. 40(2)

From: s. 40(2)
Sent: 16 March 2016 17:11
To: s. 40(2)
Subject: FW: Desktop Valuation of Two Hovercrafts

Hi s. 40(2)

The HCA has found itself as owner of two cross channel hovercraft. We are looking to dispose of one of them as a negotiated disposal and as such require a valuation. I have discussed this with s. 40(2) who confirmed that this is the case.

Because of media coverage everyone is very sensitive although the overwhelming support is for HCA to dispose of the one of the hovercraft to the Hovercraft Museum which is what this valuation is in support of.

I attach the report provided by Maritime Services International (who were appointed originally by Eversheds as expert witness to the antecedent litigation). The original surveyor also identified that there would be a cost to remove the craft ie no positive value. He has links with the Hovercraft Museum and so I asked for another surveyor to be appointed to undertake the valuation which I now attach along with his CV.

It is a report by a marine surveyor which concludes there is no financial value in either hovercraft.

As it is a valuation of an asset I wanted to just run it by you.

Kind regards

s. 40(2)

s. 40(2) **MRICS**
Senior Development Manager
Homes and Communities Agency, Bridge House, I Walnut Tree Close, Guildford, GU1 4GA

s. 40(2)

From: Admin Team [mailto:AdminTeam@maritime.uk.com]
Sent: 14 March 2016 15:03
To: s. 40(2)
Cc: s. 40(2)
Subject: RE: Desktop Valuation of Two Hovercrafts

Dear s. 40(2)

Please find attached the amended report, I have also attached s. 40(2) CV as requested.

I trust this is sufficient, however if I can be of any further assistance please do not hesitate to contact me.

Kind regards

s. 40(2)

s. 40(2)
Maritime Services International
Telephone s. 40(2)
Email adminteam@maritime.uk.com
Web site www.maritime.uk.com

Please consider the environment before printing this email

From: s. 40(2) [mailto:s. 40(2) hca.gsi.gov.uk]
Sent: 11 March 2016 16:55
To: Admin Team
Cc: s. 40(2)
Subject: RE: Desktop Valuation of Two Hovercrafts

Thank you

Can I ask for couple of amendments please.

Firstly please can you rename the "On the condition and valuation of the Hovercraft…" on the front page.

Secondly please can you confirm in the conclusion (paragraph 8) that the craft have no value for any use.

Finally please can you let me have s. 40(2) CV.

Kind regards

s. 40(2)

s. 40(2) **MRICS**
Senior Development Manager
Homes and Communities Agency, Bridge House, I Walnut Tree Close, Guildford, GU1 4GA

s. 40(2)

From: Admin Team [mailto:AdminTeam@maritime.uk.com]
Sent: 11 March 2016 16:05
To: s. 40(2)
Cc: s. 40(2)
Subject: Desktop Valuation of Two Hovercrafts

Dear s. 40(2)

Please find attached the report for the Two Hovercrafts.

If we can be of any further assistance then please do not hestiate in contacting me.

Kind regards s. 40(2)

s. 40(2)
Administrator
Maritime Services International
Telephone s. 40(2)
Email s. 40(2) @maritime.uk.com
Web site www.maritime.uk.com

s. 40(2)

From: s. 40(2) <s. 40(2) live.co.uk>
Sent: 24 March 2016 07:41
To: s. 40(2)
Subject: Fwd: Method Statement and Risk Assessment
Attachments: SSL MS GH2007 Survey Feb 16 Iss 01.pdf; ATT00001.htm; SSL RA HCMT 001 Survey Feb 16 Iss 01.pdf; ATT00002.htm

Hi s. 40(2)

Thank you for your email yesterday s. 40(2) - please find the necessary documents attached.

Kind Regards

s. 40(2)

Sent from my iPhone

Begin forwarded message:

> **From:** s. 40(2) <s. 40(2)
> **Date:** 24 February 2016 at 23:18:07 GMT
> **To:** s. 40(2) @hca.gsi.gov.uk" s. 40(2) @hca.gsi.gov.uk>
> **Cc:** s. 40(2) s. 40(2)
> <s. 40(2) hca.gsi.gov.uk>, s. 40(2) <s. 40(2)
> **Subject: FW: Method Statement and Risk Assessment**
>
> Dear s. 40(2)
>
> I hope you are well.
>
> Please find attached the method statement and risk assessment that has been compiled by s. 40(2) , who will be advising us when he is free to undertake a survey of SRN4 'The Princess Anne' subject to the HCA's approval of the two documents.
>
> Please do no hesitate to contact me should you require any further information.
>
> Kind Regards
>
> s. 40(2)
>
> s. 40(2)
> **The Hovercraft Museum Trust**
> Daedalus - Lee on the Solent

Hampshire - PO13 9NY
Phone: s. 40(2)
Mob: s. 40(2)
Registered Charity No: 1003689

Simply Safety Ltd

Method Statement for Hovercraft Survey

SSL/HCMT/001-Iss 01 12.02.2016

Client: Hovercraft Museum Trust

Description of Work

Conduct an Internal survey of SRN4 MkIII Hovercraft GH2007 Princess Anne

Location

HMS Daedalus

Off of Unicorn Road

Lee on Solent

Hampshire

PO13 9NS

Timescales

To Be Advised

Hovercraft Museum Trust Reviewed:- **Name :** **Date:** **Signed:**				
Client Acceptance :- **Name:** **Date:** **Signed:**				
Issue	**Date**	**Compiled by**	**Signed**	**Details**
Issue 01	12th February 2016	s. 40(2) Simply Safety Ltd	s. 40(2)	First Issue

Simply Safety Ltd

Method Statement for Hovercraft Survey

SSL/HCMT/001-Iss 01 12.02.2016

Table of Contents

A Work Details

A1.1 Description of work

The purpose of this Method Statement is to enable Simply Safety Ltd hereinafter referred to as SSL, to undertake an internal survey of and SRN4 MkIII 'Mountbatten Class' Super 4,Hovercraft namely 'GH 2007 The Princess Anne' in a safe and methodical manner, using safe systems of work and safe working practices.

It is envisaged that there will be one representative from SSL completing the survey supported by a minimum of one and a maximum of two Hovercraft Museum Trust Staff who will be required to enter into the skirt area and the related skirt sections being:

- Rear Trunk
- Keel Bag
- Port Lateral Bag
- Starboard Lateral Bag

Of the Hovercraft in a manner which will not prejudice any statutory regulations and guidelines. All those involved in the survey are aware that there is no conflict between safety and completing the survey. Safety shall remain the highest priority in every situation.

A1.1 This SSL document will:-

- Outline the manner in which the survey will take place so far as is reasonably practicable
- Identify the suggested access and egress arrangements to the Hovercraft for the survey to be completed
- Record areas of concern in a High, Medium, and Low category
- Provide an outline of the proposed sequencing of the main elements of the survey
- Provide details of the individual tasks required to complete the survey and the completed task and activity boxes
- Provide a list of equipment that is likely to be used to deliver the survey
- Provide a contact list for key people associated with the survey

A1.2 Work Overview

SSL have been requested to conduct a survey of an SRN4 MkIII Hovercraft designated GH 2007 'The Princess Anne' by the Hovercraft Museum Trust. The survey is to provide information so far as is reasonably practicable to establish if the Hovercraft could be opened up as an element of the Hovercraft Museum Trusts collection of hovercraft for public viewing and access and egress to:-

- The car deck area of the hovercraft,
- The Port Passenger Cabin
- The Starboard Passenger Cabin
- Flight deck Cabin

This will result in the survey taking place within the Plenum area of the Hovercraft to establish condition of floor section panels and associated supporting spars and struts

Additional areas will need to be surveyed to support the above and therefore it is envisaged that the areas of skirt sections will be included in the survey which have been identified at section A1.1

A1.3 Sequencing Outline

The process and therefore the sequencing will be as follows.

Access and egress is to be via the bow door skirt envelope sections which will provide ease of access to both Port and Starboard skirt sections.

If however the bow door cannot be lowered, then access will be gained from either the Port or Starboard main cabin door and via the lift fan bay from the car deck

Images follow for ease

Port and Starboard Skirt Segment One envelopes

Car Deck Lift Fan Access (Four in total Two Port Two Starboard)

The Hovercraft Skirt are defined in Ten Segments per side therefore they are identified as Port and Starboard Segment 01,02,03,04,05,06,07,08,09 and 10

The survey will commence by entering the skirt segment via the bow door envelope as a preference and will work from the Segment One from the forward part and work toward the Segment Ten

Each area contained within each segment will be surveyed and that survey recorded against that segment with additional information to pin point areas of concern in as much for example:-

“Severe corrosion noted in the floor area aft and inboard of the Starboard Segment 07, approximately one metre from the Segment 07 to Segment 08 breakdown joint”

this would localise the area for ease of future reference

This process will be the sequencing for the entire survey to ensure that the survey is completed in a methodical manner.

In the location of the Segment 07 and 08 of both Port and Starboard sides, access hatches area available in the buoyancy tanks located in the Plenum Chamber area which in turn, provide access and egress to the Port and Starboard Lateral Bags (Stability Bags)

The access and egress hatches and the condition of the buoyancy tank area surrounding the same will be inspected prior to access to ensure that the condition has not deteriorated and would not support the weight of a person to complete the internal survey of the Lateral Bags.

It is suggested that at this point lone working will not take place and therefore two people will be deployed to complete this element of the survey

The surveyor prior to entering into the buoyancy area will have access to personal air sampling equipment to ensure there is no oxygen enrichment or deficiency.

This particular area of the craft is well ventilated due to the fact that the hatch way through the buoyancy area was the pathway for the pumped air provided by the lift fans to inflate the lateral bags, and therefore the air sampling will be in place should there have been any change of air quality as a result of any corrosion process during storage

Once the lateral bag survey is complete, then the survey will progress through the other segments toward the Segment 10(For Both Port and Starboard sides of the Hovercraft)

A1.4 Before Starting Work

All torches and suitable lighting will be checked for operation and ensure that spare batteries are available as required.

Check Air monitoring equipment for functional test and check.

Conduct a briefing as to the content and methodology of the manner in which the survey will progress and establish understanding on the manner in which the survey will stop should safety be compromised or have the potential to be compromised. Ensure all contact details are briefed and understood and check mobile phones for functionality and back-to-back radios for clear reception and operating procedures

A1.4 Tasks Associated with Survey

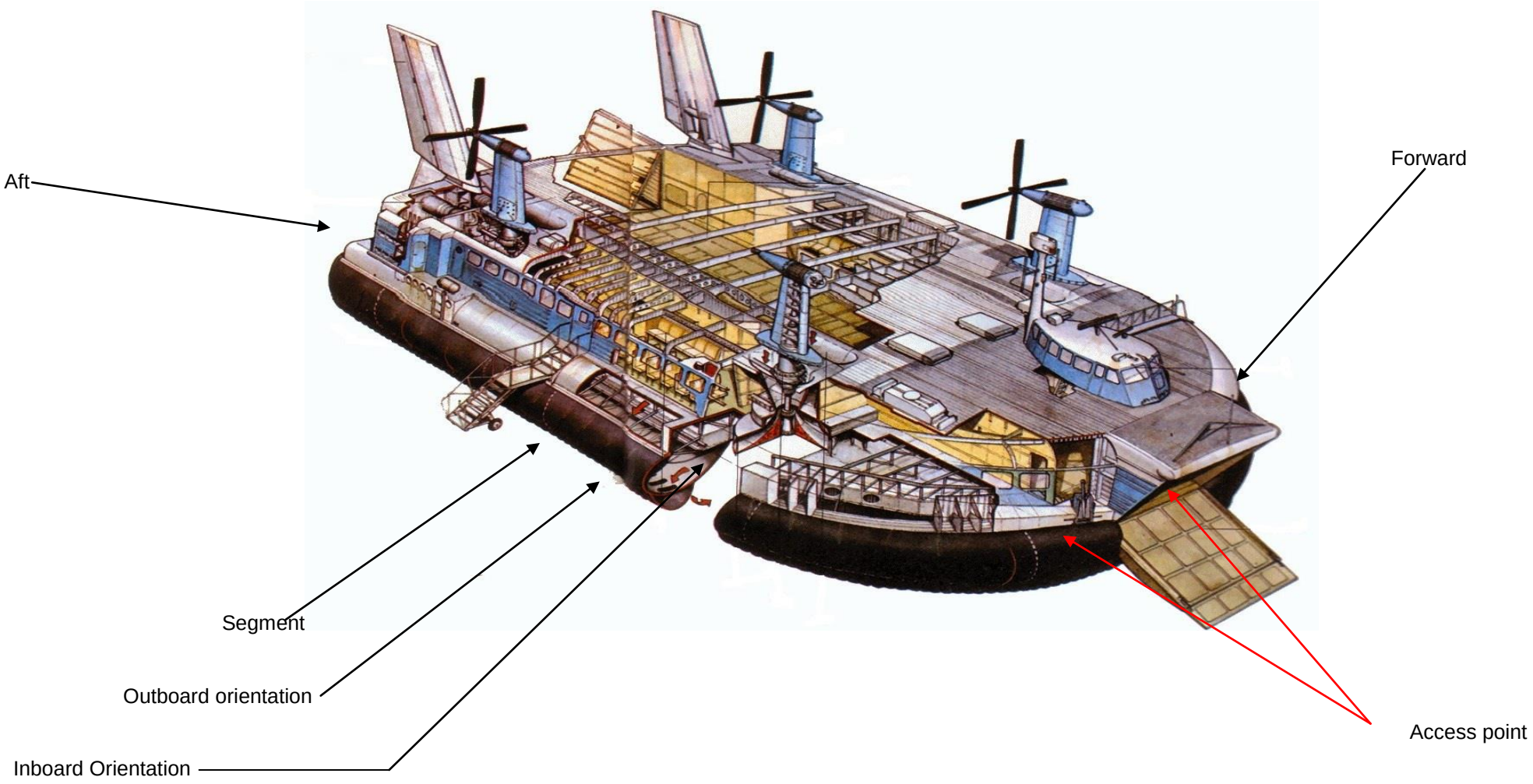
- All persons associated with the survey activity to meet at a pre-determined location for briefing – this is likely to be the Hovercraft Museum Trust Offices
- Complete the briefing of this method statement to ensure that full understanding of the methodology is reached.
- Conduct a questions and answers session to confirm understanding of the survey
- Check all torches and support lighting for functional operation and confirm spare batteries are available
- Complete a function test on personal air monitoring equipment
- Personal Protective Equipment check
- Confirm access and egress arrangements for the craft
- Confirm emergency arrangements

The survey itself will progress in a manner previously briefly described. The preferred method of access to the internal area of the Hovercraft will be via the bow door Segment One envelopes. There will be no preference if this will be Port or Starboard, but the methodology will be mirrored for both sides of the craft.

The survey will look at the vertical strut mounting sections and cross struts to establish via visual means, the condition of the same. Boundary members will also be surveyed to record condition of the same. Fixing points of all cross struts and members will be surveyed to establish condition via visual inspections.

Each segment will be surveyed with the demarcation of each segment survey section being the segment breakdown joints forward and aft of the segment and will encompass all areas inboard and outboard. The condition of the above head cabin floor panels will be viewed, surveyed and condition recorded at each segment

The diagram below will assist in understanding the methodology to be applied



Where the access hatch to the Lateral bag is reached, approximately midway in the Segment 07 the access point condition and structure of the same will be viewed for integrity and to ensure that a person's weight can still be supported.

Once this is confirmed, the air-sampling device will be used prior to entering this hatchway. The second surveyor will be positioned at the entrance whilst this survey is being completed

The survey of the lateral bags will include condition of the bags, hinge line and floor panels overhead

Upon completion, the survey will commence down the remaining segments until the Segment 10 is reached.

At this point access to the rear trunk will be obtained, by crossing over the corner boundary beam member and this will result in arriving into the rear trunk area of the hovercraft

Rear Trunk

From the rear trunk – access to the keel bag area will be reached in a similar manner to that of the lateral bags – via circular access hatches in the buoyancy tanks and with a personal air monitor used - and the keel bag condition will be surveyed to include the floor panel above

Once this keel bag survey is complete, the remainder of the craft via the remaining 10 segments will be surveyed and survey notes made.

During the survey, where areas of extensive corrosion are seen, this will be recorded using digital camera and supported if required by infrared video recorder.

Upon completion of the survey, all information will be transferred into a full report, which the Hovercraft Museum Trust will be in receipt of.

All condition details will of course be included within the final, which will provide the Hovercraft Museum Trust with information to conclude if the craft would be safe for the public.

A2 Control of Activity Risks

Control of Activity Risks

Hazards/Risk Identified	Controls Specified
Access and egress to the Hovercraft via bow segment envelopes	Use of access points as identified being via the bow segment envelopes with bow door down – ensure that the area of the skirt segment does not present a slipping hazard.
Access and egress to the Hovercraft via passenger door way	Ensure that the stairway is secured prior to ascending the same and that the external walkway is of sufficient condition to support the weight on an individual from the transition of the stairway to passenger cabin. Ensure that the passenger cabin floor cannot accept the weight of an individual
Access and egress to the Hovercraft via the lift fan bay on the car deck (option of two per side)	As above, but ensure that there is a safe passageway on the car deck to the lift fan bay and for the return once the survey is complete Be mindful of slipping and tripping hazards on the fan bay floor and condition of car deck panels Be mindful of head injuries that could be sustained caused by various items – hard hat to be worn if this does not restrict movement or have the potential to cause additional injury
Access and egress to the lateral bag(s)	Check to ensure that the buoyancy panels can take the weight of an individual –switch on and test personal air monitor turn on and test back to back radios
Access and egress to the Keel bag	Check to ensure that the buoyancy panels can take the weight of an individual –switch on and test personal air monitor turn on and test back to back radios
Entrapment during survey	All areas to be accessed have suitable and sufficient access and egress arrangements and therefore entrapment is not envisaged.
Cuts and abrasions during the survey process	Wear suitable clothing and supported by suitable Personal Protective equipment with Safety boots, overalls, light eye protection where practicable, gloves and hard hat where practicable
Leptospirosal jaundice (Weils Disease)	Ensure that all cuts are clean and covered prior to the survey commencing , wear gloves at all times and ensure correct hygiene regimes are followed at all times prior to eating or drinking
Working in darkness - Failure of hand held lights and lamps	Ensure that all hand held lighting equipment is fit for purpose and tested prior to use – spare batteries to be carried

Simply Safety Ltd

Method Statement for Hovercraft Survey

SSL/HCMT/001-Iss 01 12.02.2016

A3 Resources

There will be a maximum number of three people involved in the survey

1 no SSL Staff

2 No Hovercraft Museum Trust Staff.

Equipment List

Hand held torch Personal Air Monitor	Head Lamp Survey note pad and clipboard	Back-to-back radio's Digital Camera and Video Recorder

PPE Requirements

- Hard hat –
- Approved safety boots with ankle support and reinforced midsole
- Light Gloves /Work Gloves - type as required for individual tasks
- Light eye protection
- Overalls

B Site Details

B1 Access

Access & egress to the site will be via

Argus Gate

Chark Lane

Off of Broom Way

Lee on Solent

PO13 9YA

Hovercraft Location:

HMS Daedalus

Off of Unicorn Way

PO13 9NS

Access from Argus Gate to the location of the Hovercraft is detailed on the map that follows

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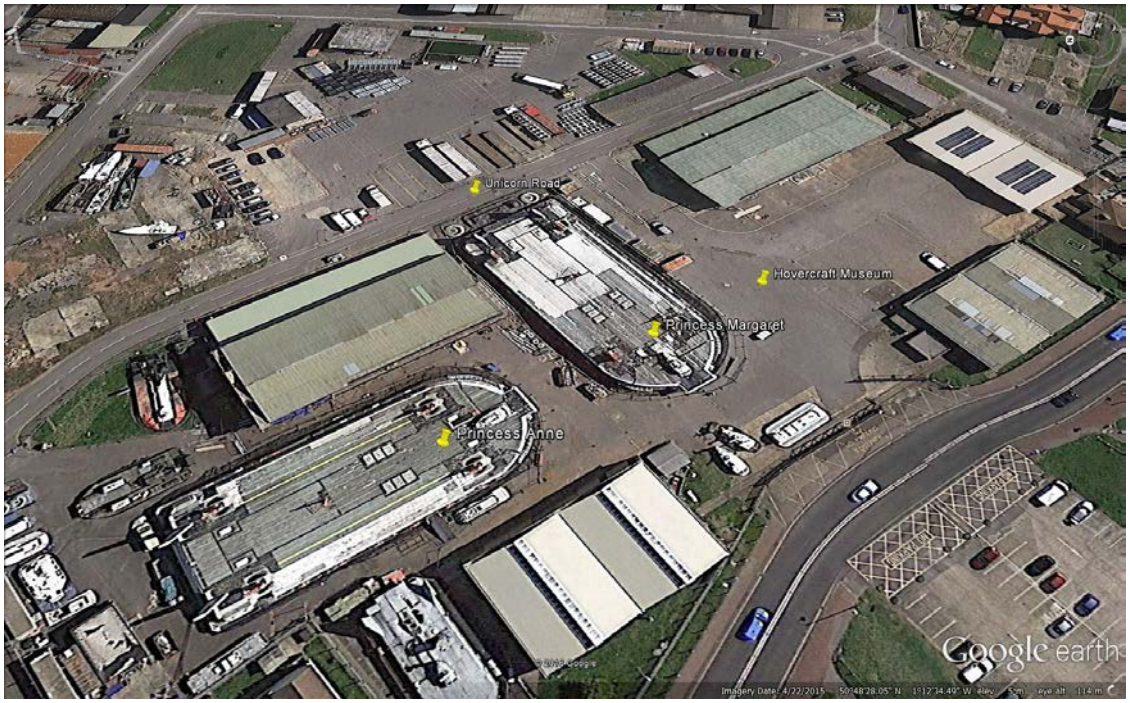
Method Statement for Hovercraft Survey

SSL/HCMT/001-Iss 01 12.02.2016

B2 Site Layout



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Method Statement for Hovercraft Survey

SSL/HCMT/001-Iss 01 12.02.2016

B3 Control of Site Risks

Hazards/Risk Identified	Controls Specified
Slips trips and falls and underfoot conditions	Ensure only approved walkways are used for access and egress to the Hovercraft identified for survey
Interface with others on the Hovercraft Museum Site be it public or other hovercraft museum staff	Create and exclusion zone / area to ensure that that the Hovercraft cannot be subject to uncontrolled access to others. Post staff at access points to deter the public or other museum staff
Access and egress to the Hovercraft via bow segment envelopes	Use of access points as identified being via the bow segment envelopes with bow door down – ensure that the area of the skirt segment does not present a slipping hazard.
Access and egress to the Hovercraft via passenger door way	Ensure that the stairway is secured prior to ascending the same and that the external walkway is of sufficient condition to support the weight on an individual from the transition of the stairway to passenger cabin. Ensure that the passenger cabin floor cannot accept the weight of an individual
Access and egress to the Hovercraft via the lift fan bay on the car deck (option of two per side)	As above, but ensure that there is a safe passageway on the car deck to the lift fan bay and fro the return once the survey is complete Be mindful of slipping and tripping hazards on the fan bay floor and condition of car deck panels Be mindful of head injuries that could be sustained caused by various items – hard hat to be worn if this does not restrict movement or have the potential to cause additional injury
Access and egress to the lateral bag(s)	Check to ensure that the buoyancy panels can take the weight of an individual –switch on and test personal air monitor turn on and test back to back radios
Access and egress to the Keel bag	Check to ensure that the buoyancy panels can take the weight of an individual –switch on and test personal air monitor turn on and test back to back radios
Entrapment during survey	All areas to be accessed have suitable and sufficient access and egress arrangements and therefore entrapment is not envisaged.
Cuts and abrasions during the survey process	Wear suitable clothing and supported by suitable Personal Protective equipment with Safety boots, overalls, light eye protection where practicable, gloves and hard hat where practicable

Simply Safety Ltd

Method Statement for Hovercraft Survey

SSL/HCMT/001-Iss 01 12.02.2016

Hazards/Risk Identified	Controls Specified
Leptospirosal jaundice (Weils Disease)	Ensure that all cuts are clean and covered prior to the survey commencing , wear gloves at all times and ensure correct hygiene regimes are followed at all times prior to eating or drinking
Working in darkness - Failure of hand held lights and lamps	Ensure that all hand held lighting equipment is fit for purpose and tested prior to use – spare batteries to be carried

B4 Site Protection

All access and egress to the Hovercraft to be surveyed to be restricted and therefore cordoned off so far as is reasonably practicable and the area controlled.

B6 Communication & Contact Details (For general and emergency)

CONTACT	TITLE	TELEPHONE
s. 40(2)	Hovercraft Museum Trust	s. 40(2)
s. 40(2)	Hovercraft Museum Trust	
s. 40(2)	Hovercraft Museum Trust	
s. 40(2)	Simply Safety Ltd Surveyor	

B7 Emergency Arrangements

In the case of emergency, the Hovercraft Museum Trust emergency arrangements will be mobilised

A fully stocked and HSE Compliant First Aid Kit will be available on the Hovercraft during the survey and will be carried by s. 40(2) who is First Aid Trained and will be used in the First Instance for any First Aid requirements during the survey.

s. 40(2) is also a qualified First Aider and there is a fully stocked First Aid Kit located within the Shop-Office Building No 40 being the Main Hanger

There is a portable set of Fire Extinguishers on a trolley, which will be deployed adjacent to the craft whilst the survey is being completed. The Fire Extinguishers on the trolley are 1 no Dry Powder and 1 no AFFF (foam)

Should it be required, the fire alarm can be activated by break-glass units in Building No 40 (main hanger) or by manually ringing bells in Building No 31 (front hanger).

The muster point is the slipway gate, where there is a muster station sign

Nearest Hospital with Accident and Emergency Department

Queen Alexandra Hospital

Tel: **023 9228 6000** or **999** Fax: 023 9286 6413

Address:

Southwick Hill Road,

Cosham, Portsmouth, Hampshire, PO6 3LY

Simply Safety Ltd

B8 Welfare

The Hovercraft Museum Trust will be providing for their for welfare arrangements to be used which will include toilets, washing and messing / canteen facilities

C Briefing

C1 Briefing Arrangements

The contents of this Method Statement will be briefed to all personnel involved in the survey process and sign to confirm that they have understand the contents of the briefing.

Briefing given by:

Name	Position	Signature

Briefed to: (by signing below, I confirm that I have received and understood the briefing for this task)

Name	Signature	Date

Reference No. & Description of activity	SSL – HCMT – RA 001 Hover craft Survey – Internal Skirt and structure	Simply Safety Ltd
Personnel Affected [tick ✓]	Employees ✓ | Contractors ✓ | Visitors | Public ✓	Health, Safety, Environmental, Quality Risk Assessment

Health & Safety	Environmental & Quality					
5. Extreme	5. Extreme	5	10	15	20	25
4. Major	4. Major	4	8	12	16	20
3. Lost Time	3. Minor	3	6	9	12	15
2. Minor	2. Limited	2	4	6	8	10
1.Trivial	1.Trvial	1	2	3	4	5
Severity / Likelihood		1. Unlikely Unlikely to occur	2. Rarely Could occur exceptionally	3. Occasional Likely to occur some time	4. Frequent Likely to occur regularly	5.Inevitable Almost every time

HIGH RISK	Unacceptable – Do not start work	Not applicable
MED RISK	Tolerable – Reduce where practicable	Annually, or upon significant change
LOW RISK	Acceptable – monitor to ensure remains low	Annually, or upon significant change
Date of Assessment:	12th February 2016	
Date of review:	11th February 2017	
Assessor:	s. 40(2)	

s. 40(2)

Environmental & Quality

- Trivial – (E) No adverse effect. Legislation / mandatory requirements do not apply. (Q) No adverse effect upon the business.
- Limited – (E) Potential for adverse effect due to the proximity / sensitivity of receptor. Legislation / mandatory requirements apply but no potential for breach. (Q) Potential for adverse effect to business operations.
- Minor – (E) Minor pollution incident. Limited / short term breach of Legislation/mandatory requirements. (Q) Limited impact to business operations
- Major – (E) Significant pollution incident (single receptor). Breach of Legislation / mandatory requirements. (Q) Significant impact upon the business, loss of business operations
- Extreme – (E) Major pollution incident (multiple receptors). Prosecution inevitable. (Q) Total business impact, loss of business operations

Health & Safety

- Trivial – Incidents which do not result any adverse effect to the individual
- Minor – Injuries which result in less than 7 days away from normal occupation
- Lost Time Injury - Injuries that result in more than 7 days away from normal occupation
- Major – major injury as defined in RIDDOR
- Extreme – one or more fatalities

No.	Hazard / Aspect	Consequence / Impact	Pre-Control Rating L	x S	= R	Control Measures employed	Final Risk Rating L	x S	= R
1	Conducting a survey of the internal skirt and structure area of a SRN4 Mk III Mountbatten Class Super 4 Hovercraft at Lee on Solent	Slips trips and falls causing minor strain injuries, but in certain circumstances serious injuries being fractures and breaks	3	5	**15**	Use agreed and authorised access and egress points and ensure that they are fit for purpose and can be used safely. Use of safety boots with oil and grease resistant soles to minimise slip hazards all movement inside the skirt segments to be taken with care	1	5	**5**
		Entrapment causing minor injuries cuts or abrasions	3	5	**15**	The nature and build of this particular area of the Hovercraft does not present opportunities for entrapment but care must be taken to ensure that there are no electrical wires or cables which may present the potential for entrapment where cables trays have corroded and changed the inner spaces – First Aid kit to be carried	1	5	**5**
		Poor air quality causing respiratory conditions	2	5	**10**	All the areas subject to survey have a free through flow of air – how ever an air quality monitor will be used to ensure that there cannot be any issues with the air quality in the buoyancy areas.	1	5	**5**
		Working in darkness which could cause minor injuries cuts and abrasions - disorientation	2	5	**10**	Ensure that all torches, hand lamps and or head lamps to be used are fit for purpose fully working prior to the survey commencing and spare batteries to be carried at all times	1	5	**5**
		Working in difficult spaces with potential constraint of posture (Lateral Bags and Keel bag)	3	5	**10**	All areas of access to the Lateral bags and keel nags are through large apertures in the buoyancy tanks. Personal Air monitoring equipment to be used and back to back radios to be used for communication purposes. Should there be an issue injury or health problem with the surveyor in these areas, emergency extraction will be via the skirt segments, where the skirt segments can be cut with a retractable craft knife below the hinge line for outer, anti-bounce web and inner walls and access will be available to the keel and or lateral bags where extraction for an individual can be effected.	1	5	**5**
		Poor access and egress arrangements which in turn can cause minor or major injury	2	5	**10**	Pre-survey of access / egress points to ensure they are fit for purpose and the correct method / choice is selected in order of :- Bow door envelope, passenger cabin side steps, lift fan bay	1	5	**5**
		Loss of contact with other surveyors which in turn can cause disorientation and potential	2	5	**10**	Back to back radios in place with clear communication process in place all hand held lighting equipment fit for purpose with spare batteries	1	5	**5**

No.	Hazard / Aspect	Consequence / Impact	Pre-Control Rating L x S = R			Control Measures employed	Final Risk Rating L x S = R		
		injury caused by panic							
		Leptospirosal Jaundice (Weils Disease) causing flu like symptoms and severe illness and potential organ failure	3	5	**15**	Ensure that all cuts and abrasions are kept covered at all times and implement strict washing and hygiene regimes prior to eating or drinking.	1	5	**5**

Maritime Services International

Surveying | Consultancy | Investigation

Method and Risk Assessment Statement

for CampbellReith

s. 40(2)

1 April 2016

E3 – E5 Heritage Business Park
Heritage Way
Gosport
Hampshire
PO12 4BG

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info@maritime.uk.com
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INSPECTION OF SRN4 HOVERCRAFT FOR HAZARDS

Method Statement

The full state of the two hovercraft's 'PRINCESS ANN' and 'PRINCESS MARGARET' is unknown.

Information provided by the Hovercraft Museum indicates that the two craft are unlikely to be in the same condition. The valuation inspection showed that 'PRINCESS ANN' is in better condition than 'PRINCESS MARGARET'.

The Hovercraft Museum have more knowledge regarding 'PRINCESS ANN' than they do of 'PRINCESS MARGARET' as they have had custody of the craft over the period of its storage, during which it has at points been open to the public.

The hazards on board will be assessed by physical inspection of the craft.

Initial research with members of the Hovercraft Museum with experience of the hovercraft has indicated that 'PRINCESS ANN' was decommissioned and the engines removed by Hoverspeed with a view to the craft being transferred to the Museum's custody. The decommissioning was carried out by trained staff familiar with the structure, machinery and equipment on board.

The 'PRINCESS MARGARET' was sold prior to decommissioning and the engines removed by a team of engineers employed by the then owner over a short period in December 2015. The craft has been exposed to the elements with its bow doors open and little if any maintenance has been conducted.

It is intended to conduct an inspection of 'PRINCESS ANN' first to assess the existence and location of potential hazards as this can be achieved within a relatively controlled environment. This will be done on the basis of information provided by the Hovercraft Museum who are prepared to provide guidance and assistance.

The hazards to be assessed are;

Hazard	**Action**
Fuel or residue in fuel tanks	Open up tanks
Hydraulic fluid in control lines	Open tanks, identify any pipework
Gearbox lubricating oil	Initial check of state of tanks 4 tanks with feed to each gearbox (4) and thrust bearing at top of each pylon
Grease on transmission shafts	Check greasing points
Coolant	Glycol or similar in tanks
Asbestos	Breaking through any sealing material will be potentially hazardous and must be avoided. There is a possibility of brown/blue asbestos given the age of the craft and date of last refit Initial visual inspection of engine compartment Initial visual inspection of passenger lounge If suspect material is found move to specialist testing (Envirochem at Fareham) Low hazard – bag and deliver High hazard – specialist inspection
Batteries	Visual inspection
Explosives	Visual inspection
Radioactive isotope (valve radio)	Visual inspection of radio equipment

The first stage has been to conduct enquiries with the Hovercraft Museum. From this we know;

Hazard	**Princess Ann**	**Princess Margaret**
Fuel or residue in fuel tanks	Tanks run dry on arrival Check for residue	Tanks run dry on arrival Check for residue
Hydraulic fluid	Unknown Likely	Unknown Likely
Gearbox lubricating oil	Unknown Engines and propellers removed Unlikely	Unknown Engines removed rapidly Propellers remain Likely
Grease on trans shafts	Unknown Likely	Unknown Likely
Coolant	Unknown Engines removed Unlikely	Unknown Engines removed rapidly Possible
Asbestos	Unknown	Unknown
Batteries	Likely to have been removed	Unknown
Explosives	Removed for disposal by RAMORA in conjunction with HM CG	Removed for disposal by RAMORA in conjunction with HM CG
Radioactive isotope (valve radio)	Unlikely given date of final re-build and operation	Unlikely given date of final re-build and operation

The engines were run until they stopped and both sets of engines have been removed. The risk of large scale pollution or ground contamination has been reduced. The fuel was contained in bladders within tanks. There may be some sticky residue which will require the removal of the bladders. The first is to dip tanks, take caps off, look in and establish the presence of the oil or fuel. If apparently empty and inspection of the tank is required it will need opening and de-gassing to allow cleanliness to be checked. I would advise visual inspection (stage 1). If evidence of fuel or oil is found, the next stage to bring in a specialist in extraction and cleaning with resultant certification.

The existence of lubricating oil, hydraulic fluid and coolant is a distinct possibility. These present a low hazard in terms of danger but will need to be properly disposed of to avoid pollution.

Batteries contain acid and if present will be left intact for proper disposal.

From this I know that the pyrotechnics on board and in life rafts were removed from both craft which reduces the risk of explosion or fire. A check for any residual items will need to be made.

The likelihood of radioactive isotopes being present is very low given that the radio equipment will have been fitted in the 1970s or later.

Given the age of the craft the presence of asbestos is a possibility, which may be determined by visual inspection.

RISK ASSESSMENT

Maritime Services International has recognised that in conducting surveys and inspections of vessels worldwide that risks pertain to the conduct of surveys and to the travel to and from the object of survey. To that end the generic Risk Assessment for surveys is attached.

I have reviewed this in light of the information obtained from the Hovercraft Museum and the information gained during the valuation inspection:

Hazard	**PRINCESS ANN**	**PRINCESS MARGARET**	**Mitigation**
Slip	Low	Moderate	Sturdy boots Avoid pools of water or oil
Trip	Low	Low	
Fall	High on side decks where there are no guard rails and damage to deck	High on side decks where there are no guard rails	Avoid side decks
	State of top deck not known but pin holed	Not known	Avoid top deck
	Use known ladder for entry	Enter through bow door on ramp	
	Engine room Use only firmly fixed decks walkways and ladders Take powerful torch + spare	Engine room Use only firmly fixed decks walkways and ladders Take powerful torch + spare	Any use of ladder on board to be pre-planned
Asbestos	Low	Not known	Use mask on initial inspection of engine compartment or when checking panels
Biological growth	Very Low	Low	

		Mask on entry especially to passenger accommodation	
Fungal Spores	Very Low	Low Mask on entry especially to passenger accommodation	
Corrosion - cuts	Very Low	Low	Gloves
Bird / animal faeces or urine	Very Low	Moderate	Boots and Gloves Wash up
Human faeces or urine	Very Low	Moderate	Boots and Gloves Wash up
Needles /sharps	Very Low	Not known	Boots and Gloves Do not touch
Fuel / oil	Low	Low	Gloves when dipping tanks
Batteries	Low	Low	Gloves and Boots
Explosives	Very Low	Very Low	
Radioactivity	Negligible	Negligible	

Maritime Services International

Surveying | Consultancy | Investigation

Risk Assessment Report

'Surveyor Field Operations'

s. 40(2)

4 September 2013

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PO12 1SS

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Contents

Introduction

At the Maritime Services International surveyors training day in May 2013 a question was raised as to whether or not Maritime Services International should conduct a risk assessment for surveyor field activities. As a matter of law there is no obligation on Maritime Services International Limited to carry out such an exercise on behalf of sub-contractors. However, as a reasonable action it was considered by the management of the company that it was a moral obligation.

Therefore, on Wednesday 4 September 2013 a risk assessment exercise was held at the offices of Maritime Services International Limited to identify all relevant risks ordinarily faced by field surveyors when on assignment.

Present for the exercise were:

s. 40(2) – Managing Director and Operational Field Surveyor
s. 40(2) – International Operations Manger
s. 40(2) – Operations Assistant
s. 40(2) – Operational Field Surveyor
s. 40(2) – Operational Field Surveyor

The risk assessment exercise covered hazards, likely outcome and probability of occurrence. These were subsequently brought together in a risk matrix and risks associated with the working environment for field surveyors were identified. Subsequent measures to manage or remove the risks to ensure a safer working place were subsequently identified. Follow up actions were the subject of management control and direction based on the risks identified.

Hazard Identification

A ‘hazard’ was defined as any condition or situation that has the potential to do harm. Using this as a starting point a generic list of hazards was identified. These were:

- Gravity
- People
- Water
- Atmosphere
- Height
- Fire
- Electricity
- Light
- Velocity
- Weather
- Health
- Tiredness
- Acts of God
- Sound
- Contamination
- Animals/Bugs
- Peer Pressure
- Radiation

Working from the list of generic hazards the group then developed a list of potential events, situations or environments that could be reasonably encountered in the work place under each hazard group. Where one event could occur under more than one generic hazard it was included under both hazard headings. The results of this were:

Gravity

- Falling objects
- Overhead cranes
- Ladders
- Aeroplanes
- Stairs
- Gangways
- Masts
- Pilot ladders
- Scaffolding
- Boats in falls
- Suspended objects
- Trips, slip and falls

People

- Attitude
- Ignorance
- Operator error
- Criminal intent
- Cost pressure
- Reliability
- Physical aggression
- Strikes

Water

- Tides
- Steam
- Cold
- Drowning
- Flooding
- Waves
- Contamination
- Beasties (sharks, sea snakes etc.)
- Currents
- Electricity
- Ice
- Free surface
- Dehydration
- Weight

Atmosphere

- Lack of O_2
- Tank entry
- Humidity
- Gas explosion
- Gas poisoning
- Dust
- Visibility
- Temperature

Height

- Ladders
- Masts
- Platforms
- Aeroplanes
- Boat to boat transfer
- Stairs
- Scaffolding
- Dock sides
- Lack of (confined spaces)

Fire

- Explosion
- Bomb
- Heat
- Smoke
- Electrical
- Visibility
- Free surface
- Lack of O_2

Electricity

- Shock
- Heart failure
- Burns
- Blinding
- Heat
- Entrapment
- Lack of light
- Lightening

Light

- Dazzle
- Ultra violet/infra-red radiation burns
- Lack of
- Blinding
- Welding
- Laser

Velocity

- Drivers
- Crash stops
- Driving
- Rolling/pitching (of the vessel)
- Impacts
- High speed craft

Weather

- Sea state
- Visibility
- Temperature
- Dust/sand
- Snow
- Rain
- Sun

Health

- Pregnancy
- Heart Attack
- Allergy
- Dehydration
- Sea sickness
- Trauma
- Alcohol
- Bugs
- Sun burn
- Medication

Tiredness

- Judgement
- Physical ability

Acts of God

- Earthquakes
- Volcanoes
- Tsunamis
- Terrorism
- Acts of war
- Hurricanes
- Falling objects

Sound

- Loud
- Protection (lack of)
- Silence
- Lack of communication
- Sonic cannons
- Distraction

Contamination

- Materials
- Poisons
- Fuel
- Water
- Touch
- Ingestion

Animals/Bugs

- Bites
- Vectors
- Poisons
- Diseases
- Parasites

Peer Pressure

- Pride
- Ego
- Expectation
- Over reaction

Radiation

- Electromagnetic
- Sun
- Radio activity

Risk Assessment

Working from the above list of possible events, situations or environments, a second list was developed grouping the different events to generalised relevant situations. This lead to the development of a list of work place specifics which was subsequently used as the basis of the risk assessment in terms of severity of outcome and probability of occurrence.

Severity of Outcome

For severity of outcome the following judgement criteria were applied:

1. Multiple deaths
2. Single death
3. Injury requiring hospital admission
4. Injury requiring first aid (by somebody else)
5. Minor injury requiring first aid by self
6. Chronic long term

Probability of Occurrence

For probability of occurrence the following judgement criteria were applied:

A Improbable (1 in 1000 work years)
B Remote (several in 1000 work years)
C Occasional (1 in 100 work years)
D Probable (several in 10 work years)
E Frequent (more than 1 per year)

Participants to the exercise were asked to consider:

1. Actual first hand experience i.e. it had happened to them or they had witnessed the event
2. Knowledge of the event via a third party
3. Knowledge of the event via news, the internet or other source

Each identified risk was discussed in the context of the surveyor's work place and each participant was asked to give their opinion of the weight that should be given to both probability and severity. Where there was disagreement the majority view was adopted.

Risk Matrix

Once the table of severity and outcome had been compiled the risk weight was assigned using the following risk matrix.

Probability of Outcome	Severity of Occurrence						
		1	**2**	**3**	**4**	**5**	**6**
	A						
	B						
	C						
	D						
	E						

Risks that were identified within the green zone of the risk matrix were considered tolerable albeit they need monitoring as a management activity.

Risks that were identified within the yellow zone of the risk matrix were designated ALARP (As Low As Reasonably Practicable) requiring active management control.

Risks that were identified within the red zone of the risk matrix are considered unacceptable and require active management intervention to mitigate.

Results of the Risk Assessment Exercise for Field Surveyors

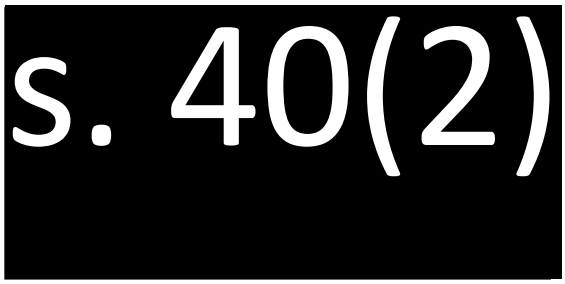
Category	Type of Hazard	Outcome	Probability	Action
Objects falling from height	Suspended loads such as cranes	1	C	
	Masts	2	C	
	Boats on chocks	2	C	
	Scaffolding	2	C	
	Ladders/stairs	2	D	
	Hatch covers	2	C	
	Unstable loads	2	C	
	Aeroplanes	1	B	
	Vertigo	2	C	
	Dock sides	2	C	
	Cherry pickers	2	B	
Attitudes (of people)		1	D	
Misjudgement		1	D	
Ignorance		1	C	
Strikes		3	B	
Drowning	Foundering	1	A	
	Docks	2	B	
	On board	2	A	
	Tanks	1	A	
Beasties		2	E	
Tank Entry (including holds)		1	C	
Hot work/welding		3	B	
Dust/smoke		1	C	
Fire		1	B	
Explosion		1	A	

Electricity	Welding	2	A	
	Switchboards	2	B	
	Cables	2	B	
	Generators	2	B	
	Batteries	2	B	
Laser/flash		3	B	
Transport		1	B	
Sea Trials		3	B	
Tenders		2	B	
Pax Transfer		2	C	
Day/night transition		4	B	
Slips, trips and falls		2	C	
Heat, dehydration, heat stroke		3	B	
Cold – hypothermia		3	B	
Thunder storms		2	A	
Medical conditions		2	C	
Drug and alcholo abuse		2	B	
Tiredness – fatigue		1	B	
Acts of God		1	B	
Machinery noise		6	B	
Alarm sirens, fog signals		4	A	
Ambient noise in docks		4	A	
Lone worker		2	B	
Food and drink, food poisoning		3	B	
Air conditioning		3	B	

Personal hygiene		3	B	
Peer pressure, client expectations		2	B	
Electromagnetic radiation – radio aerials		3	A	
X-ray in yards		3	A	
Radar/microwave		2	B	
Lack of height		3	C	
Assistance to others		2	B	

Conclusion

Following on from completion of the exercise and following production and agreement of the report by the participants, the report was circulated to all field surveyors for information together with guidance, where appropriate, on action to be taken by Maritime Services International Limited field surveyors in order to protect their health and safety whilst working on behalf of Maritime Services International Limited.



s. 40(2)
Master Mariner, BEng (Hons), MA, CEng, CMarEng
Managing Director

s. 40(2)

From: s. 40(2)
Sent: 04 April 2016 10:37
To: s. 40(2)
Subject: Fw: Princess Ann and Princess Margaret Hovercraft
Attachments: MSI Field Surveyor Risk Assessment.pdf; Method Statement.pdf

Hi s. 40(2)

RAMS for hovercraft inspection which we have reviewed and i am happy for them to proceed

s. 40(2)

CampbellReith
consulting engineers

Raven House,
29 Linkfield Lane,
Redhill, Surrey
RH1 1SS

Tel s. 40(2)
www.campbellreith.com
----- Forwarded by s. 40(2) CRH on 04/04/2016 10:35 -----

From: Admin Team <AdminTeam@maritime.uk.com>
To: 's. 40(2) campbellreith.com" <s. 40(2) campbellreith.com>
Date: 01/04/2016 11:10
Subject: RE: FW: Princess Ann and Princess Margaret Hovercraft

---

Dear s. 40(2)

Please find attached the risk assessment and method statement as requested. s. 40(2) will be attending site on Friday 1 April 2016 to inspect Princess Anne, our apologies for the short notice but s. 40(2) . During s. 40(2) inspection tomorrow he will discuss with them available dates to inspect Princess Margret which we will revert to you and hopefully there will be a convenient date that you can attend with s. 40(2)

If I can be of any further assistance, please do not hesitate to contact me.

Kind regards

s. 40(2)
s. 40(2)
Maritime Services International
Telephone s. 40(2)
Email adminteam@maritime.uk.com
Web site www.maritime.uk.com

Please consider the environment before printing this email

From: Admin Team
Sent: 29 March 2016 16:27
To: s. 40(2) campbellreith.com'
Subject: RE: FW: Princess Ann and Princess Margaret Hovercraft

Dear s. 40(2)

Thank you for your email, contents have been passed on to s. 40(2) . We are also waiting on a confirmation of the survey date and I will be in touch as soon as this is available to me.

In the meantime, if I can be of any further assistance please do not hesitate to contact me.

Kind regards

s. 40(2)
s. 40(2)
Maritime Services International
Telephone s. 40(2)
Email adminteam@maritime.uk.com
Web site www.maritime.uk.com

Please consider the environment before printing this email

From: s. 40(2) campbellreith.com [mailto:s. 40(2) campbellreith.com]
Sent: 29 March 2016 16:18
To: Admin Team
Cc: 11575@campbellreith.com
Subject: RE: FW: Princess Ann and Princess Margaret Hovercraft

s. 40(2)

can you arrange for a risk assessment and Method statement to be produced and circulated prior to the survey

Best regards

s. 40(2)

CampbellReith
consulting engineers
Raven House,
29 Linkfield Lane,
Redhill, Surrey
RH1 1SS

Tel s. 40(2)
www.campbellreith.com

From: Admin Team <AdminTeam@maritime.uk.com>
To: 's. 40(2) campbellreith.com" <s. 40(2) campbellreith.com>
Date: 23/03/2016 10:08
Subject: RE: FW: Princess Ann and Princess Margaret Hovercraft

---

Dear s. 40(2)

Thank you for your email and instruction. We will know arrange the date for our surveyor to attend and will be in contact once that date is confirmed.

In the meantime, if I can be of any further assistance please do not hesitate to contact me.

Kind regards

s. 40(2)
s. 40(2)
Maritime Services International
Telephone s. 40(2)
Email adminteam@maritime.uk.com
Web site www.maritime.uk.com

Please consider the environment before printing this email

From: s. 40(2) campbellreith.com [mailto:s. 40(2) campbellreith.com]
Sent: 22 March 2016 18:23
To: s. 40(2)
Cc: 11575@campbellreith.com; Admin Team; s. 40(2) s. 40(2) campbellreith.com
Subject: RE: FW: Princess Ann and Princess Margaret Hovercraft

s. 40(2)

Thank you for this

I would like to be present on either the first or second mornings in an observation role so please provide me with as much notice as possible of your intended date of survey.

The draft report should be issued jointly to us and the HCA for approval

Please proceed

s. 40(2)

CampbellReith
consulting engineers
Raven House,
29 Linkfield Lane,
Redhill, Surrey
RH1 1SS

Tel s. 40(2)
www.campbellreith.com

From: s. 40(2) @maritime.uk.com>
To: s. 40(2) campbellreith.com" <s. 40(2) campbellreith.com>
Cc: s. 40(2) campbellreith.com" <s. 40(2) campbellreith.com>, s. 40(2) <s. 40(2) hca.gsi.gov.uk>, "11575@campbellreith.com" <11575@campbellreith.com>, Admin Team <AdminTeam@maritime.uk.com>
Date: 22/03/2016 16:08
Subject: RE: FW: Princess Ann and Princess Margaret Hovercraft

---

Dear s. 40(2)

Thank you for your email. Please find below scope of work and quotation as requested. I can confirm that we are happy for a collateral warranty to be arranged.

- Attend an on-site inspection of two hovercraft, Princess Ann and Princess Margaret

- Produce a report to highlight the key schedule of works required on the Princess Ann in order to protect The Homes and Communities Agency as landlords and owners with a view to making the craft safe for public display

- Produce a report to highlight the key schedule of works required for the safe disposal and removal from site of the Princess Margaret in order to protect The Homes and Communities Agency as landlords and owners

- Recommend what works should be carried out on the Princess Ann in order for her to potentially be displayed to the public safely, i.e. fuel, asbestos removal and any other aspects that might present unacceptable risk to health and safety and/or protection of the environment

- Pay particular attention to any health and safety and environmental issues that The Homes and Communities Agency may be liable for

Our daily rate is £s. 43 per hour (based on an eight hour day) with any expenses charged at cost and VAT charged at the standard rate (if applicable). Please find attached a copy of our standard terms and conditions for your perusal. We estimate that the above instruction will cost the following if a visual inspection only:

Half a man day planning and liaising with the Hovercraft Museum	s. 43
Site visit and inspection of the Princess Ann and Princess Margaret Hovercraft, one man day per craft	
Report write up, half a man day per craft	
Expenses (including travel, subsistence and sundries)	
Total Cost (excl. VAT)	

Please do not hesitate to contact me should you require any further information or assistance. I look forward to hearing from you.

With kind regards

s. 40(2)
Business Development Executive
Maritime Services International
Telephone s. 40(2)
Email s. 40(2) @maritime.uk.com
Web site www.maritime.uk.com

From: s. 40(2) campbellreith.com [mailto:s. 40(2) campbellreith.com]
Sent: Tuesday, 22 March 2016 13:21
To: s. 40(2)
Cc: s. 40(2) campbellreith.com; s. 40(2) 11575@campbellreith.com

Subject: RE: FW: Princess Ann and Princess Margaret Hovercraft

Dear s. 40(2)

s. 40(2) has asked us to procure the SRN4 surveys that you previously tendered to the HCA . Could I ask that you resubmit your quotation to Myself at CampbellReith b as soon as possible . Could you also expand on the scope of work defining a little more what is meant by " Produce an initial report to highlight key schedule of works " as I am keen to understand what is and perhaps more importantly what is not being included in your report . We will act as client and the HCA will rely on the contents of your report and we would therefore wish to arrange for a collateral warranty to the HCA if this is acceptable

Yours sincerely

s. 40(2)
s. 40(2)

CampbellReith
consulting engineers
Raven House,
29 Linkfield Lane,
Redhill, Surrey
RH1 1SS

Tel s. 40(2)
www.campbellreith.com

If you have received this e-mail in error please immediately notify the sender by email and delete it and any attachments from your system.

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Maritime Services International

Surveying | Consultancy | Investigation

Inspection for Hazards

'PRINCESS ANNE'

for CampbellReith

s. 40(2)

Date of Survey: 01 April 2016
Date of Report: 06 April 2016
Daedalus Site, Lee on Solent, Hampshire
Job Reference Number: 3464/PJT

E3 – E5 Heritage Business Park
Heritage Way
Gosport
Hampshire
PO12 4BG

Tel: + 44 (0)23 9252 4490
info@maritime.uk.com
www.maritime.uk.com

Contents

Instruction

Instructions were received from s. 40(2) from CampbellReith, Raven House, 29 Linkfield Lane, Redhill, Surrey, RH1 1SS 22 March 2016 to attend at the premises of the Daedalus site to carry out a physical inspection of the SRN4 hovercraft 'Princess Anne'. This was undertaken on the 01 April 2016 in order to establish the existence and nature of the physical factors contributing to hazards on board the vessel. s. 40(2) attended the Daedalus site and hovercraft facilitated by staff of the Hovercraft Museum.

Introduction

The 'Princess Anne' is being examined with a view to its custody being passed to the Hovercraft Museum at the Daedalus site. The hazards are assessed mindful of the fact that in the first place access to the craft will be limited to members of the museum staff and volunteers who will be working to clean and preserve the craft and its equipment. These people can be expected to take reasonable precautions such as the wearing of overalls, boots, gloves and masks where appropriate in accordance with the Museum's Health and Safety Policy and appropriate Risk Assessments for the work being undertaken. They have access to all areas of the craft in the course of their endeavours.

Method

Physical examination has been undertaken to discover factors which contribute to the hazards which, in turn have the potential to cause harm. The factors found during the inspection are recorded below. In the following section they are related to the hazard and remedial action or mitigation to reduce the risk to an acceptable level.

Physical Factors

Fuel

Pressure fillers are fitted port and starboard forward. Pipes feed bladders within metal tank spaces forward and aft to maintain vehicle trim. It was a sunny morning. When the starboard filler was opened by depressing the seal approximately 20-30ml of fuel – a light diesel/AVTUR type – was ejected.

Despite claims that the tanks have been run dry there is at least a residue of fuel remaining in the tanks. Up to 10000 litres may remain in 30 or more bladders. It is reasonable to assume that fuel will have in the main drained from pipes leading to the machinery spaces where the engines have been removed. There may however be isolated pockets in the pipework which will need to be drained.

Fuel filters are mounted on the bulkheads in machinery spaces and are likely to contain fuel.

Lubricating Oil

The lubricating oil system remains charged. 4 x 45 litre header tanks, 1 on the leading edge of each pylon, provide lubrication to each of the gearboxes. Lines run to each of the pylon gearboxes which will also need to be drained.

Additional buckets of oil on car deck and port engine space.

Engine oil system removed with gas turbine unit.

Oil residue in auxiliary power unit compartments and engine spaces on either side.

Hydraulic Fluid

Pylons and Fins

Main hydraulic compartment for the control of fins and pylons is port aft, on a half deck adjacent to the vehicle deck and machinery spaces. There is a hydraulic tank and accumulators for the two separate systems, which are still partially charged. Fluid is present with some leakage to a ‘save-all’ tray beneath valve chest. Pipework runs to the base of pylon pedestals for rotation and to lever arm for fin control. There are auxiliary tanks in each of the fan volute spaces. The two on the starboard side have leaked into the bottom of the space itself.

Front Doors

Main hydraulic system controls the rams which open the doors through pipework above and between the sets of doors. It is charged as it remains operable by hand pump. This is fitted in the starboard door control cabin where there is a small top up can adjacent to an open bulkhead mounted reservoir.

Rear Doors

Actuators to either side of rear doors. Pipes to latching mechanism, running along top and bottom of each door.

Water

Valve chests feed tanks from filling positions aft on either side. The tanks could not be checked without accessing the side decks or breaching the system. They together with the associated pipework are likely to contain some water. There is a chance that stagnant water could harbour biological growth.

Water is piped to the galley stations and heads alongside the passenger accommodation. These were not pressurised but may contain some residual water, as will calorifiers for hot water. The traps of basins have dried

Sewerage Tanks

Vacuum sewage system from heads compartments feeds waste tanks forward and aft on either side. Even if pumped out there is likely to be some residual material. This has the potential to harbour bacteriological contamination. The tanks may contain hydrogen sulphide if the contents has been stored anaerobically for an extended period and will need to be vented prior to inspection and cleaning.

There was no sign of any other human fouling.

Explosives

None were seen on board or in the life raft cases. They were reported as being removed and dispose of in conjunction with HMCG.

Fire Extinguishers

BCF – 5 in each engine room, 4 in each fan volute. Each approximately 2.5kg charge.

Halon – 4 x small portable bottles on deck in port machinery space.

Foam – 1 x portable extinguisher + 1 small domestic in port machinery space.

The BCF and Halon extinguishers are on board in contravention of the Montreal Convention which bans the use of fluorocarbon gases owing to their potential to deplete ozone from the upper atmosphere.

Life Jacket CO_2 Bottles

Numerous life jackets were stowed in pouches in racks in the passenger cabins. Each of these is gas operated and fitted with a small CO2 canister. They also have battery operated lights.

Insulation

Spun glass-fibre wool thermal/ sound insulation is fitted in the deck head of some areas of the passenger accommodation areas. It is fitted in slab form each block being individually covered greatly reducing the risk or airborne man-made fibres.

There are some areas of metal cladding around the Auxiliary Power Unit stowages

The only other insulation is sealed beneath metal cladding on the exterior of the tubular turbine exhausts.

To date the only possibility of asbestos use discovered is in the lining of the high level heating trunk running forward along either side of the vehicle deck head from aft. A hot air bleed from the gas turbines fed into the trunk and there is an unconfirmed report that asbestos may have been used. This is remote from the main deck and difficult to access. Further technical research will be conducted.

Engine Intake Filters

The final stage of air filtration to the machinery compartments is through bagged filters fitted over the bulkhead air inlets. These contain fibrous material which is at present sealed within the bagging system.

The APU (Auxiliary Power Units) have encapsulated air filters within the associated machinery space.

Electricity

No power is connected or capable of being generated on board with the exception of batteries. The electrical system is old and has not been maintained. It will not easily meet modern safety requirements. There are areas of disruption to lights and cabling where the deck head panels have been disturbed and in areas where equipment has been removed.

Electrical Equipment

In the cockpit the following electrical equipment was found in addition to the pilots' instruments and controls:

- Radio equipment – a V/UHF transceiver
- Radar – A Decca 090 radar display was present but not fixed to a console. The display tube will contain fluorescent chemicals which will form a hazard if broken
- Power amplifiers – A rack of servo amplifiers transmitting the control inputs to the fan and fin servos is at the after end of the cockpit

There was no power to the amplifiers or other equipment which is unitised and designed and built with transistorised components. These contain some rare metals but do not present the same radiation hazard as some electronic valves.

The electrical equipment in the electrical bays has numerous components bus bars and switches. By modern standards these are relatively exposed and the extent of component deterioration is unclear without extensive investigation.

Batteries

Four batteries were found on board which contain lead and sulphuric acid:

- 2 x lead acid in car deck control cabin
- 2 x lead acid in starboard aft electrical bay

Individual batteries were present in the inflatable life jackets to power the lights.

Fan Trunking

Fan trunking runs in the deck head of the passenger accommodation to provide forced draught ventilation. There is some dust and fluff present.

Corrosion Products

Where water, especially seawater comes into contact with the Duralumin structure white powdery hydroxides of aluminium are formed. These should not be ingested. Similarly rust forms where steel components are exposed. The corrosion is exacerbated where the two metals are in contact or immersed together when galvanic corrosion occurs. This may result in certain circumstances of the rapid erosion of the aluminium alloy.

Mould

There are some small damp areas on the furnishings and carpets where there is evidence of mildew and light mould and fungal growth.

Animal Life

Birds

There was one area of bird feathers and several excrement deposits in the cabins and machinery compartments where birds have been able to enter through the open exhausts.

Animals

No sign of rodent or other animal life was seen internally. The craft is raised and doors shut so access is difficult and the present of oils and hydrocarbons a deterrent.

Insects

No insect infestation was seen.

It is more likely that any infestation will be found beneath the craft when the skirts are moved.

Other Chemicals

Adhesive

Tins of pipe adhesive were found in a box in the starboard galley.

Cleaners

Cleaners and sanitizers were present in cupboards. A range of chemical cleaners will have been used on board in the machinery compartments. These in the main have been removed.

Paint

2 x 25 litre paint drums were found in the port machinery space.

Trip Hazards

Three areas of the vehicle deck have been covered with boarding where impact damage has holed the deck. Some are secured.

There are numerous loose items in the machinery spaces, but in the main gangways and accesses are unobstructed.

Fall Hazards

- There is no protection on the upper deck accessed from the cockpit
- There is no protection on the side decks clear of the accesses
- The access to the cockpit is an exposed fixed ladder
- The machinery spaces have no formal access arrangements

Potential for Harm

Factor	Hazard	Potential Harm	Required Action
Fuel.	Fire safety. The presence of fuel increases the risk of a fire reaching the temperature at which the alloy structure of the craft will melt and burn. The increased capacity for heat generation increases the risk of fire spreading to adjacent craft and museum buildings.	Increase in risk to members of staff on board or visitors in museum buildings.	Removal of remaining fuel. Cleaning of tanks/bladders and pipework to reduce risk of fire at the earliest opportunity.
Fuel. Lubricating Oil.	In event of fire. Heat. Smoke.	Burns. Asphyxiation/Inhalation.	Removal and cleaning as above. Removal of filters.
Fuel. Lubricating Oil. Hydraulic Fluid.	Slip. From spills.	Injury.	Removal and cleaning as above.
Fuel. Lubricating Oil. Hydraulic Fluid.	Contamination. Staff working around the craft will encounter fuel / residue.	Dermatitis.	Cleaning.
Fuel. Lubricating Oil. Hydraulic Fluid.	Pollution.	Contamination of ground/water.	Removal and cleaning as above.

Fuel. Sewerage. Water.	Fume Inhalation. On tank entry if not vented.	Asphyxiation.	Vent tanks on completion of cleaning.
All.	Ingestion.	Mild poisoning.	Removal / cleaning.
Sewerage. Water.	Biological Contamination/Ingestion.	Infection.	Removal/flushing/cleaning.
Mould. Animal Life.	Biological Contamination.	Infection.	Removal / cleaning. Hygiene.
Corrosion. Products.		Reduces structural integrity.	Cleaning.
Insulation. Trunking. Air filters.	Particulate/MMF. Pollutant.	Respiratory irritation/ infection.	Insulation bagged above deck-heads. Check to ensure bags intact. Cleaning of ventilation trunking. Removal of air filters to machinery spaces.

Adhesives. Cleaners. Paint.	VOC / Contamination / Fire/Ingestion.	Inhalation/ irritation. Disorientation. Poisoning. Flammability.	Remove.
Batteries 12V. Life Jacket.	Electrical hazard. Acid. Lead Contamination. Contamination.	Electrical shock. Burns. Poisoning.	Remove. Remove.
Electrical Equipment.	Electrical hazard.	Electrical shock. Fire.	Keep disconnected until safety checks completed.
Extinguisher. BCF. HALON.	Contamination.	Contrary to Montreal Protocol on use of fluorocarbons.	Remove.
CO_2. Canisters.	Pressure Vessel	Injury if bursts in event of impact or fire.	Remove.
Temporary covers on decks.	Trip	Injury.	Ensure any loose covers secured and highlighted.

Lighting.	Trip. Lack of lighting increases risk of trips and other accidents internally.	Injury.	Adequate temporary lighting during operations.
Lack of guard wires. Damage to side decks. Corrosion to upper deck. Cockpit ladder. Wear to decking materials. Spare gear.	Falls Damage to side decks and lack of guard rails increases risk of falls. Corrosion to upper deck visible as 'pin-holing' has weakened structure. Secure but lacking handrail. Some localised trip hazards on flooring / step edges. Left in aisles and accesses.	Injury.	Rigging of harnesses. Temporary guard rails. Of crawling boards on upper deck. Use of safety line. Re-secure. Remove.

Actions to Reduce Potential for Harm

In order to pass custody of the SRN4 Hovercraft to the Hovercraft Museum for restoration, it will be necessary to reduce or remove the factors which pose a significant threat to the health and safety of the Museum staff, volunteer workers and other users of then Daedalus site.

Some elements need to be addressed in order to render the environment safe for further work to be undertaken. Once this has been completed the manner in which preservation, refurbishment and restoration is undertaken by the Museum staff will need to be conducted with care in relation to the condition that the craft is in. To make the craft safe for access to allow for preservation and refurbishment work, the impact of inherent factors which unacceptably raise the potential for harm needs to be reduced:

- Fuel
    - Removal
    - Tank and line flushing (possible bladder removal)
    - Tank venting
- Lubricating oil
    - Removal
    - Tank and line cleaning
- Hydraulic fluid
    - Isolate manual operation for bow doors
    - Removal
    - Tank and line cleaning
- Water
    - Flushing tanks and lines
    - Tank venting
- Sewerage
    - Removal
    - Flushing tanks and lines
    - Tank venting

- Air and liquid filters
    - Removal

Potential for harm should be further reduced by removing:

- Extinguishers
- Batteries
- Life jacket canisters
- Paint, adhesives and cleaners
    - In containers
- Spare gear
    - Blocking access

Access to the craft is at present restricted, although it is not locked. Accesses to more hazardous areas such as the machinery spaces, electrical bays, APU compartments, fan volutes and the cockpit should be secured to reduce casual entry. Means should be taken to secure the doors to the side decks and upper deck. These might be locked where possible or tied off. Care needs to be taken to allow a means of releasing or cutting the ties in event of emergency.

Additional Provisions to Improve Safety During Removal Works

There is minimal structural fire protection, no operating detection system and no firefighting equipment on board. There is no electrical supply to the lighting, alarm or communication systems.

During the conduct of removal works provision will need to be made for:

- Control of personnel entering the craft
    - No lone working
    - Portable communications
- Portable lighting supplied separately from the craft wiring for internal work
- A temporary alarm for fire or evacuation (klaxon/air horn)
    - Portable fire extinguishers
- If working on side or upper decks the provision of a safe working platform using scaffolding, hydraulic platform should be considered. If crawling boards are used they should be secured and temporary guard rails/wires rigged to protect their extremities
- Opening the bow door during any internal work / removal will enhance the natural lighting, ventilation and ease escape or access in the event of a fire or accident
    - Hydraulic hand pump to be serviceable
- Inadvertent entry from the Museum will need to be precluded
- Use of appropriate PPE (Personal Protective Equipment)
- Good personal hygiene on site
- Safe disposal of material

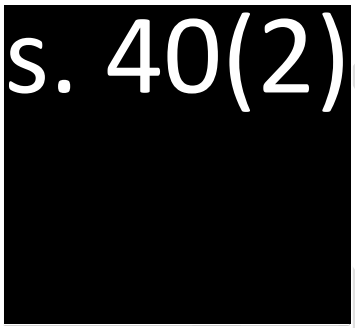
Future Work

Much of the cleaning and restoration required to address the lower risk threats such as cleaning of the fan trunking to remove dust and removal of mould from furnishings is likely to be undertaken by the Hovercraft Museum. It is labour intensive, but safely achievable providing appropriate PPE including masks are used to reduce the risk of particulate contamination.

Once the major factors have been addressed the Museum Staff will need to operate a scheme of work which incorporates the control of personnel, emergency alarm, communications and escape. The security of the craft will need to be maintained to prevent unintended access.

Outstanding Issue

Confirmation of the existence of asbestos in the high level heating trunk to the vehicle deck once safe access to the trunk can be arranged.



s. 40(2)
Surveyor attending on behalf of Maritime Services (International) Limited

Appendix 1 – Photographs

Photograph 1 - Upper deck showing masts and pylons

Photograph 2 - Vehicle deck looking forward showing control cabin and ladder to cockpit

Photograph 3 - Fuel filters (cream) and associated pipework. Paint cans in well

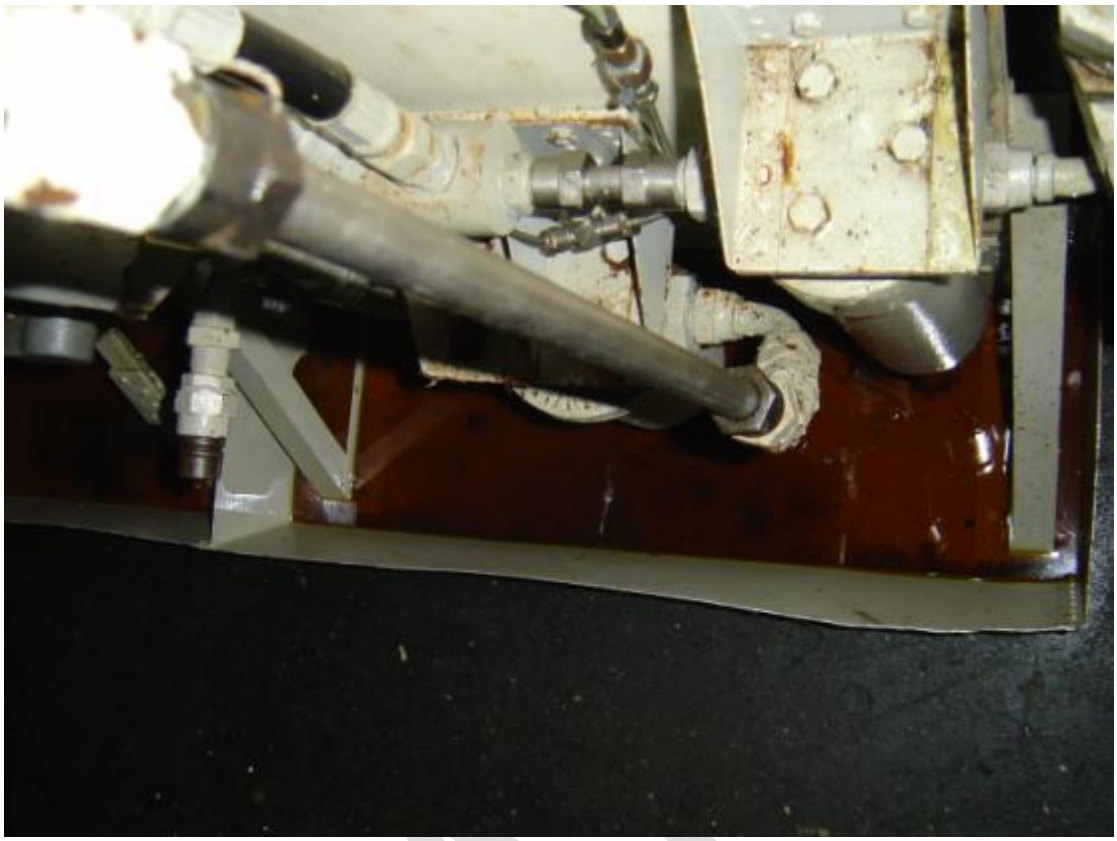
Photograph 4 - Starboard forward hydraulic fluid tank in fan volute space

Photograph 5 - Fluid in bottom of volute space

Photograph 6 - Fluid in after volute space

Photograph 7 - Hydraulic compartment port aft – with fin and pylon control lines, tank and accumulators

Photograph 8 - Detail of hydraulic tank



Photograph 9 - Save all tray containing spilt fluid

Photograph 10 - Bow door operating ram and pulley

Photograph 11 - Hydraulic lines

Photograph 12 - Stern door showing upper hydraulic line

Photograph 13 - Stern door actuators

Photograph 14 - Water tank valves below filling trunk

Photograph 15 - Heads compartment (vacuum system)

Photograph 16 - BCF extinguishers in machinery space

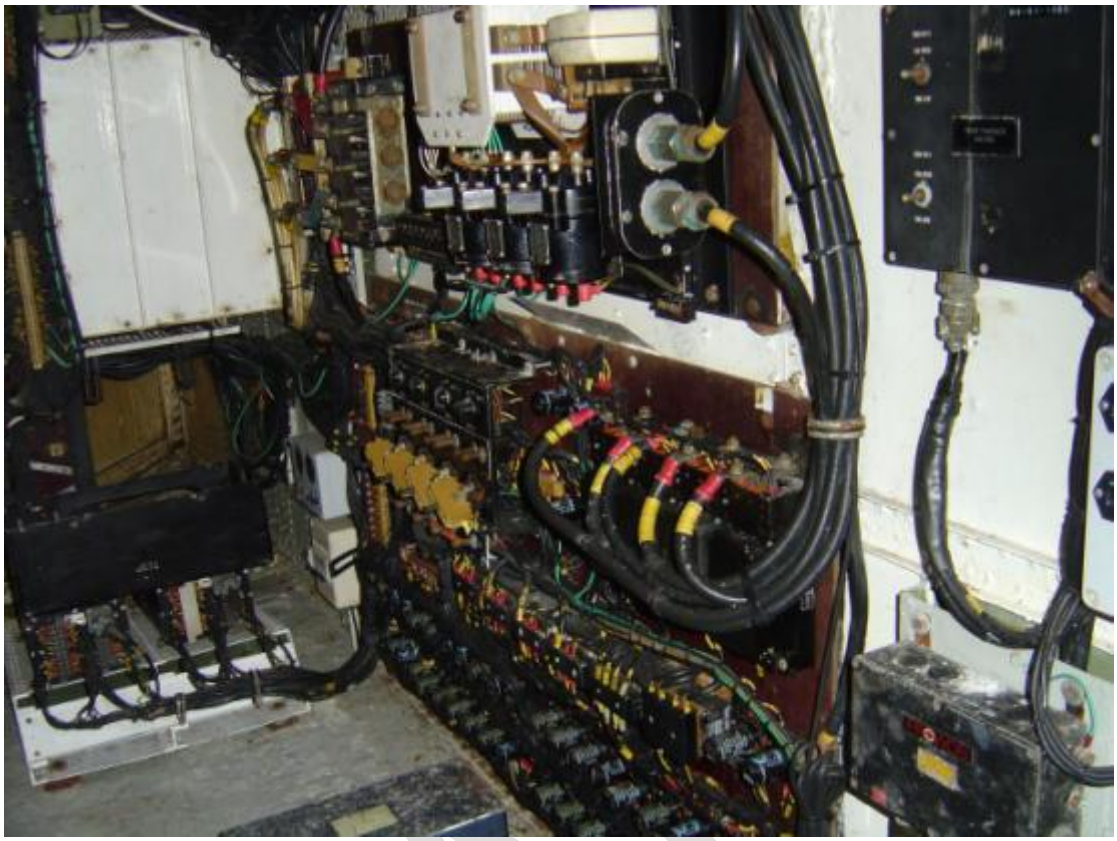
Photograph 17 - Halon and other portable extinguishers in port machinery space

Photograph 18 – Life jacket

Photograph 19 - Insulation slab in cabin deck head

Photograph 20 - Insulation on exhausts of ‘Princess Margaret’

Photograph 21 - Air intake filters



Photograph 22 - Port electrical bay

Photograph 23 - Servo amplifiers in cockpit

Photograph 24 - Radar and radio connections

Photograph 25 - Decca 090 radar, radio transceiver and gyro-compass

Photograph 26 - Batteries in vehicle deck control cabin

Photograph 27 - Batteries in starboard electrical bay

Photograph 28 - Deck head opened up showing cabling structure and trunking

Photograph 29 - Corrosion in deck head

Photograph 30 - Carpet and corrosion on track

Photograph 31 - Bird feathers

Photograph 32 - Box of pipe spares and associated adhesive

s. 40(2)

From: Admin Team <AdminTeam@maritime.uk.com>
Sent: 08 April 2016 15:07
To: s. 40(2)
Cc: s. 40(2) s. 40(2)
Subject: Princess Anne Report
Attachments: Princess Anne Report.pdf

Dear s. 40(2)

Please find attached the Princess Anne Report.

If we can be of any further assistance then please do not hesitate in contacting me.

Kind regards s. 40(2)

s. 40(2)
s. 40(2)
Maritime Services International
Telephone s. 40(2)
Email s. 40(2)@maritime.uk.com
Web site www.maritime.uk.com

Please consider the environment before printing this email

Maritime Services International
Surveying | Consultancy | Investigation

Report of

s. 40(2)

21 April 2016

Specialist Field:	Marine Consultant and Surveyor
On behalf of:	CampbellReith
Subject:	Condition / Cost of Disposal
Vessel Name:	'Princess Margaret'

Contents

1. Introduction

1.1 Authors Details

My full name is s. 40(2) MSc, Bsc, DipMarSur. I work for Maritime Services (International) Limited, a firm of Consulting Naval Architects, Marine Engineers, Ship and Cargo Surveyors.

1.2 The Inspections

I attended 'Princess Margaret' at the Daedalus site, Chark Lane, Lee-on-the-Solent, Hampshire PO13 9NY on 9 March and 15 April 2016. The first visit was arranged to determine the external condition of the hovercraft, during which the weather was wet and blustery. A further visit was arranged with the permission of the Homes and Community Agency to better determine the condition of the hovercraft with a view to its disposal and removal from the Daedalus site.

2. Instructions

2.1 Maritime Services (International) Limited were instructed by CampbellReith, Consulting Engineers, commissioned the second inspection on behalf of the Homes and Community Agency with particular interest in identifying the potential hazards presented by the craft and their implication in its future disposal.

2.2 Hazards are assessed mindful of the fact that in the first place access to the craft will be limited to workers involved in the cleaning and dismantling of the craft and its equipment. They can be expected to take reasonable precautions such as the wearing of overalls, boots, gloves and masks where appropriate in accordance with a contractor's Health and Safety Policy and appropriate Risk Assessments for the work being undertaken.

3. Conduct of the Inspection

3.1 Process

'Princess Margaret' was inspected visually from the outside by walking around the spread skirt. Some internal view was possible from the lowered bow ramp, which showed some spare gear within the gloom of the vehicle deck. The internal inspection was conducted visually by entering all accessible compartments. Samples of some materials were taken for future reference if required. No power is connected so that lighting, instrumentation and any services are inoperative.

3.2 Overview

'Princess Margaret' was built in 1968. It was extended and converted to the 'Mk 3' standard in 1977 and latterly refitted in 1998.

3.3 It is mostly built using aircraft construction techniques. At the inception of the hovercraft service there was little formal certification. Oversight was conducted against standards and the hovercraft licensed by the Civil Aviation Authority. Standards were not onerous as the craft was viewed as being at the lower end of the technical spectrum and many of the methods applied were innovative and weight was at a premium. There is extensive use of incompatible metals such as steel and aluminium alloy in proximity without adequate isolation.

3.4 At hoverspeed the craft were locally maintained. The standards of repair were developed in house, as the operators formed the core of expertise in this arena. Some structural repairs are crude by current practise.

3.5 When responsibility for the hovercraft passed to the MCA (Maritime and Coastguard Agency) in 2000 the commercial vehicle service ceased. The craft do not conform to the regulations required for vessels operating in maritime passenger service and it was uneconomic to continue or refit the craft further. All other similar vessels were broken up and scrapped.

4. Findings of the Inspection

External Inspection

4.1 Light aluminium alloy with a degree of resistance to salt water corrosion, duralumin was used widely for the structural members and shell plating. Joins are of riveted overlap in the main, but there are extensive areas where steel bolts have been used instead notably on the lift fans and across the vehicle deck box structure, see photographs 2-5. These have corroded and present a risk of erosion through the interaction of dissimilar metals. Many of the curved sections have been moulded from FRP (Fibre Reinforced Plastic). These are riveted or bolted to the aluminium sections. The areas of the joins are subject to concentration of stress and cracking has occurred in the vicinity of some joins. Other areas such as the bow doors have had extensive FRP overlays. These are often reinforcement over areas of damage or cracking.

4.2 The construction of the side decks and skirt forming the outer chamber of the plenum is cruder. There is no equivalent on an aircraft and every effort was made to save weight using early composite techniques. The decks are of balsa wood and mesh overlaid with FRP over duralumin struts. The wood/fibre composite is delaminating owing to unchecked water ingress and swelling over a prolonged period. In some areas it is broken and/or missing. There are no guard rails or wires.

4.3 The skirt is of nylon mesh overlaid with neoprene. The skirts of both crafts have aged and lost flexibility. The neoprene has perished and is cracking in numerous places. The skirt is not serviceable. The skirt is attached to the hovercraft by hinges consisting of two stainless steel plates joined by a steel pin. Most of the pins and the associated fastenings for the plates are corroded. The operational viability of the skirt is extremely doubtful, it is cumbersome, weighing approximately thirty tonnes and hanging below the craft represents an obstacle to transport, see photograph 6.

4.4 The superstructure is showing extensive paint blistering, especially in the vicinity of joints and rivets. There are numerous dents and deformations and some splits in areas of the metal skin. The majority of the doors are damaged with splitting of the skin from the frame. Steel hinges and fastenings are heavily corroded, through rusting. Internal examination of the deckhead showed white powdery residue on the alloy. This is a corrosion product made up of hydroxides of aluminium. It is characteristic of poor preservation and long exposure to a salt water environment.

Internal Inspection

4.5 Internal inspection of 'Princess Margaret' showed at least seven leaks in the deckhead above the vehicle deck, through which rain streamed causing puddling and ideal conditions for galvanic corrosion. Extensive white powdery corrosion products were visible across the upper surface of the deck around the plywood surfacing boards. These boards are coated with a non-slip paint and protect the duralumin deck from impacts. Many are wet and lifting where corrosion has started on the area beneath them. In one area a loose steel plate covers two significant deck penetrations where a heavy item has been dropped, see photograph 7. The open bow door facing to seaward has allowed the on-going ingress of not only rain but wind driven spray and airborne salt, see photograph 8. These have exacerbated the corrosion closer to the bow.

4.6 The vehicle deck has been used as a spare gear store for the craft. There are numerous crates and boxes which have been broken open and rummaged through. The contents consist of spares which run from nuts, bolts and washers to electrical components, fan trim plates and spare gyro units. These components are in the main, specific to the hovercraft. In addition there are some larger components. There is a spare pylon partially dismantled, 4 pylon bearings, a spare pylon gearbox and 20 composite blades. These have little utility in any other context and given their stowage, will be in need of examination prior to use. There are additionally spare seats, control rods and crates of other parts, see photographs 9-10.

Of note there are drums of lubricating oil, hydraulic fluid and thinners. There are two open oil drums containing oil and parts. There is a rectangular steel tank which is partially filled, but the contents of which are not known.

4.7 The vehicle deck control cabin to starboard is intact and accessed by an unprotected ladder. Two 12V batteries were in situ under the forward deck.

4.8 The cockpit is accessed by an unprotected ladder and is largely intact. Radar displays and instrumentation is present but some connections are missing, photographs 11 and 12. Power amplifiers for the control circuits are at the after end of the cockpit. The window to port is cracked.

4.9 The high level ventilation trunking was opened to examine the arrangement. Fans above feed a rectangular plenum into which warm air is bled from the engine compartment through a stainless steel pipe, see photograph 13 and 14. The distribution is by tubular aluminium with flexible connectors. No asbestos was seen during any of the inspections.

4.10 The covers of the drive shaft case were opened to port exposing the drive shaft running to the port forward pylon and one bearing. There will be numerous bearings supporting the shaft along its length, see photograph 15. This also gives access to the window washer tanks which are partially filled, see photograph 16.

4.11 The passenger cabins to port and starboard retain the original seating, not all of which matches as replacements of a later style have been employed in areas. The deck is part carpeted. Where water has entered the cabin there are areas of established mould growth both on furniture and flooring, see photographs 17 and 18. There are bird faeces throughout and some animal fur.

4.12 The deckhead consists of plastic mouldings, probably thermosetting, which are embrittled from age. The mounted seventy-eight fluorescent light fittings to either side, each contain two tubes. There is a forced air ventilation system which feeds the cabin from an inlet above the vehicle deck.

4.13 The windows around the craft are plastic facing forward and glass along the sides. They are intact.

4.14 Heads and bathrooms have been partially removed but condition of the black water tanks is unknown. Water tanks are partially filled.

Machinery Compartments

4.15 The hovercraft has a number of dispersed machinery compartments. To either side there are:

- A subdivided main machinery compartment
- An auxiliary power unit bay
- An electrical bay
- 2 fan volutes

There is a hydraulic control compartment to port for the pylon and fin control systems.

4.16 The Proteus gas turbine engines have been removed, but the exhausts and the pipework feeds remain in the main machinery compartment. Fuel piping, filters and some control pipework remains. A bottled BCF (Bromochlorodifluoromethane) fire extinguishing system remains in place. There is clutter where the supporting structure has been left in disarray. There is an area of holing in the port aft deck adjacent to the gaping exhaust trunk. There is extensive oil contamination.

4.17 The Rover gas turbine auxiliary power units have been removed. There are elements of exhaust trunk, supports and oils contamination of both bays.

4.18 The electrical bay to port and starboard contain a distribution system made up of discrete switching and control units. These are not enclosed or protected and there is minimal integration of the components. Although I am not an electrical expert, the age and condition of the fit does not conform to any modern standard or configuration I know of in current use. I can see no circumstance where power will be connected to the craft through these bays and there is no on board generation capability.

There are 5 12V batteries in the starboard electrical bay. There is a jury rigged electrical supply in the starboard cabin with some lighting extensions.

4.19 The hydraulic compartment contains hydraulic tanks, accumulators and valve gear. The system has leaked onto the deck. The tanks in each of the fan volutes to starboard have also leaked. The free hydraulic fluid will need to be removed.

Firefighting Arrangements

4.20 There is no fire suppression system or structural fire protection of any significance. In the machinery compartments there are five BCF bottles and a further four in each after fan volute. These contravene the Montreal Protocol on fluorocarbon gases. There is one additional container on the deck of the starboard machinery space and some old hand held extinguishers. There is no working detection or alarm system.

5. Further Steps Toward Initial Safety Certificating by the MCA

5.1 Hovercraft's used at sea operate in a harsh environment where corrosion is unavoidable. Hovercraft's are in a similar way to aircraft's, subject to high vibration levels and repeated wave impacts. This leads to a high risk of materials reaching the end of their safe working life in short periods through the process known as fatigue. Given the lack of maintenance and records, much of the structure will require extensive, detailed examination. To achieve this most of the coatings will need to be removed especially in way of joints and shaping. Any covering of FRP will also have to be removed. The metal and FRP components will then need to be analysed using NDT (Non Destructive Testing) techniques using specialist ultrasound equipment and dye penetrant crack detection to ensure their integrity.

5.2 There is little evidence that any effort has been made to preserve the hovercraft and corrosion of exposed components has proceeded unchecked in the marine environment adjacent to the beach. Many of the steel components will need to be replaced, as will heavily corroded areas of duralumin. This will be costly.

5.3 There is no existing production line. The vast majority of replacement component parts will need to be sourced by a bespoke manufacture. Expensive items include; Proteus and Rover gas turbine which are obsolescent, the power distribution, fire protection and the skirts which have lost much of their flexibility and resilience.

5.4 Re-commissioning an SRN 4 may be likened to restoring an aircraft of similar age.

6. Feasibility of Moving the Craft

6.1 The hovercraft is stored ashore at the top of a disused hovercraft slipway in a location surrounded by buildings. It is of a size such that their removal can only be achieved by:

a. Recommissioning the slipway:

i Removing the security fencing.

ii Closing the road.

iii Dragging / pushing the hovercraft to the sea for onward travel.

b. Demolishing buildings to allow the movement by specialist heavy vehicle. Onward movement would require intensive effort and exorbitant cost.

c. Dismantling the craft into 8' 6" x 40' transportable sections for road transport and re-assembly elsewhere. This would involve cutting up the cabins, vehicle deck and superstructure and attempting to weld together.

6.2 Any independent onward movement by sea would require extensive refitting, inspection certification and setting to work. The MCA have already indicated that the regime would be exacting. A slightly reduced but still considerable package of work and inspection would be required just to float the vessel for movement to a barge and onward tow as shown in an extract from an MCA letter dated 29 August 2014:

> Operational movement of the craft for any purpose (e.g. one-off movement), or transit by sea must not be attempted without either full Statutory Certification, or a certificated conditional General Exemption and Permit to Operate (in the case of movement in a deficient condition for disposal or other purpose). This again will require detailed survey and inspection by MCA surveyors, and most likely rectification of a number of unacceptable deficient matters by the owner/ operator to ensure safe and secure transit. Note that issuance of any statutory certification is only carried out on the basis of survey for which statutory fees would be applicable.

The movement of the craft using blowers, is no longer permitted without certification.

6.3 The craft lacks the majority of safety items required to meet current standards.

6.4 Demolishing other buildings on the site and hiring specialist transport is also likely to be unattractive financially and would require the agreement of the Owners and Leaseholders.

6.4 Dismantling for re-assembly elsewhere will be time consuming and expensive. The most likely outcome is that the project will run out of money or energy long before completion and the result will be a partially dismantled hovercraft in need of final disposal.

7. Disposal Options

7.1 The SRN4 does not meet any classification society rules or standards required by the Flag State authority, the MCA, to operate at sea. Operation ceased in 2000 because of this. The changes required would almost inevitably be impractical owing to the increase in weight generated by structural changes, fire protection and safety regulation. The possibility of a return to commercial service should be discounted as the cost would run to tens of millions of pounds, a capital outlay far in excess of the returns available in the marine transport arena. Worldwide few commercial hovercraft operations have remained commercially viable. Those that are, rely on diesel engine propulsion and usually subsidy.

7.2 Any potential purchaser would need to undertake significant investment in order to meet the MCA's requirements to even move it down the slipway to the sea. This is likely to deter the naïve amateur enthusiast seeking a form of floating attraction, store or residence. Should the hovercraft need to remain afloat the level of certification required would increase and the inspection regime be punitive.

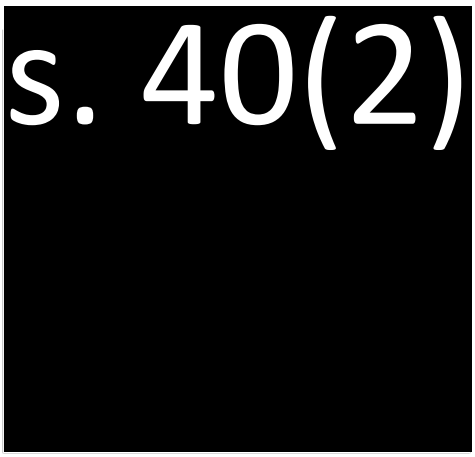
7.3 Commercial dismantling for residual scrap value is likely to be unattractive. All the valuable items such as auxiliaries and engines have already been disposed of. There seems little if any value in the seats and fittings. They are of mixed materials and in varying condition. Duralumin is not valuable as a recycled material as the alloying elements increase the recycling cost. The low price of metals in the world market renders the effort needed expensive. The additional costs of separating composites, removal of the skirt and the subsequent disposal of the waste will further add to the bill.

8. Hazards

Hazards have been assessed in relation to the responsibility of any potential purchaser of the 'Princess Margaret' and are described at Appendix 1. These are related to Potential Harm at Appendix 2 and a suggested Disposal Schedule at Appendix 3.

9. Conclusion

The hovercraft has no residual value as a commercial vessel. It will require substantial expenditure to clean the craft and remove it in a safe and environmentally acceptable manner. Removal by water is, given the mandated certification required unlikely to be financially viable.



s. 40(2)
21 April 2016

Appendix 1 - Hazards

Fuel

Pressure fillers are fitted port and starboard forward. Pipes feed bladders within metal tank spaces forward and aft to maintain vehicle trim. Despite claims that the tanks have been run dry there is at least a residue of fuel remaining in the tanks. Up to 10000 litres may remain in 30 or more bladders. It is reasonable to assume that fuel will have in the main drained from pipes leading to the machinery spaces where the engines have been removed. There may however be isolated pockets in the pipework which will need to be drained. Fuel filters are mounted on the bulkheads in machinery spaces and are likely to contain fuel.

Lubricating Oil

The lubricating oil system remains charged. Four x 45 litre header tanks, one on the leading edge of each pylon, provide lubrication to each of the gearboxes. Lines run to each of the pylon gearboxes which will also need to be drained.

- 12 Drums – Castrol Hypsin 32
- 4 Drums – Blue (oil filled)
- 4 Drums – Castrol Aero 98

The engine oil system was removed with the gas turbine unit.

Oil residue in auxiliary power unit compartments and engine spaces on either side.

Hydraulic Fluid

Pylons and Fins

Main hydraulic compartment for the control of fins and pylons is port aft, on a half deck adjacent to the vehicle deck and machinery spaces. There is a hydraulic tank and accumulators for the two separate systems, which are still partially charged. Fluid is present with leakage to the deck beneath the valve chest. Pipework runs to the base of pylon pedestals for rotation and to lever arm for fin control. There are auxiliary tanks in each of the fan volute spaces. The two on the starboard side have leaked into the bottom of the space itself.

Front Doors

Main hydraulic system controls the rams which open the doors through pipework above and between the sets of doors. It is charged as it remains operable by hand pump. This is fitted in the starboard door control cabin.

Rear Doors

There are actuators either side of the rear doors and pipes to the latching mechanism are running along the top and bottom of each door. The hydraulic system supplying the rear doors is, as far as it could be examined, intact.

Water

Valve chests feed tanks from filling positions aft on either side. The tanks could not be checked without accessing the side decks or breaching the system. They together with the associated pipework are likely to contain some water. There is a chance that stagnant water could harbour biological growth.

Water is piped to the galley stations and heads alongside the passenger accommodation. These were not pressurised but may contain some residual water, as will calorifiers for hot water. The traps of basins have dried.

Sewerage Tanks

Vacuum sewage system from heads compartments feeds waste tanks forward and aft on either side. Even if pumped out there is likely to be some residual material. This has the potential to harbour bacteriological contamination. The tanks may contain hydrogen sulphide if the contents has been stored anaerobically for an extended period and will need to be vented prior to inspection and cleaning.

There was no sign of any other human fouling.

Explosives

None were seen on board or in the life raft cases. They were reported as being removed and dispose of in conjunction with HMCG (Her Majesty's Coastguard).

Fire Extinguishers

- BCF – 5 in each engine room, 4 in each fan volute. Each approximately 2.5kg charge
- 1 Du Pont Fire eater canister (corroded) in starboard machinery space
- Foam – 2 x portable extinguisher in starboard machinery space

The BCF extinguishers are on board in contravention of the Montreal Protocol which bans the use of fluorocarbon gases owing to their potential to deplete ozone from the upper atmosphere.

Life Jacket CO_2 Bottles

Numerous life jackets were stowed in pouches in racks in the passenger cabins. Each of these is gas operated and fitted with a small CO_2 canister. They also have battery operated lights.

Insulation

Spun glass fibre wool thermal / sound insulation is fitted in the deckhead of some areas of the passenger accommodation areas. It is fitted in slab form each block being individually covered, greatly reducing the risk or airborne man-made fibres.

There are some areas of metal cladding around the APU (Auxiliary Power Unit) stowages. The only other insulation is sealed beneath metal cladding on the exterior of the tubular turbine exhausts.

To date no use of asbestos has been discovered. The lining of the high level heating trunk running forward along either side of the vehicle deckhead from aft, has been checked as has the hot air bleed from the gas turbines which feeds into the trunk, so far as access has allowed. It is very likely that any asbestos would have been removed in the full strip conducted in the 1998 refit.

Engine Intake Filters

The final stage of air filtration to the machinery compartments is through bagged filters fitted over the bulkhead air inlets. These contain fibrous material which is at present sealed within the bagged fingers.

The APU have encapsulated air filters within the associated machinery space.

Electricity

No power is connected or capable of being generated on board with the exception of batteries. The electrical system is old and has not been maintained. It will not meet modern requirements. There are areas of disruption to lights and cabling where the deckhead panels have been disturbed and in areas where equipment has been removed. No organic electrical supplies should be used.

Electrical Equipment

In the cockpit the following electrical equipment was found in addition to the pilots' instruments and controls:

- Radio equipment – a V/UHF transceiver
- An analogue gyro-compass
- Radar – a Racal-Decca Bridgemaster II radar display was fitted with an auxiliary console. The display tube will contain fluorescent chemicals which will form a hazard if broken
- Power amplifiers – a rack of servo amplifiers transmitting the control inputs to the fan and fin servos is at the after end of the cockpit

There was no power to the amplifiers or other equipment which is unitised and designed and built with transistorised components. These contain some rare metals but do not present the same radiation hazard as some electronic valves.

The electrical equipment in the electrical bays has numerous components bus bars and switches. By modern standards these are exposed and the extent of component deterioration is unclear without extensive investigation. They should not be used.

Batteries

Seven batteries were found on board which contain lead and sulphuric acid:

- 2 x lead acid in car deck control cabin
- 5 x lead acid in starboard aft electrical bay

Individual batteries were present in the inflatable life jackets to power the lights.

Fan Trunking

Fan trunking runs in the deckhead of the passenger accommodation to provide forced draught ventilation. There is some dust and fluff present.

Corrosion Products

Where water, especially seawater comes into contact with the duralumin structure, white powdery hydroxides of aluminium are formed. These should not be ingested. Similarly rust forms where steel components are exposed. The corrosion is exacerbated where the two metals are in contact or immersed together when galvanic corrosion occurs. This may result in certain circumstances of the rapid erosion of the aluminium alloy.

Mould

There are appreciable areas on the furnishings and carpets where there is mildew and mould and fungal growth. This is heaviest where water leaks in.

Animal Life

Birds

There was one area of bird feathers and several excrement deposits in the cabins and machinery compartments where birds have been able to enter through the open exhausts.

Animals

There were two areas where animal fur was present on seats. No faeces or remains were found.

Insects

No insect infestation was seen.

Other Chemicals

Adhesive

Tins of pipe adhesive were present.

Cleaners

Cleaners and sanitizers were present in cupboards. A range of chemical cleaners will have been used on board in the machinery compartments. These in the main deck have been removed.

Oils and Fluids

A range of oils, hydraulic fluids and greases are in drums and on equipment around the craft.

Trip Hazards

In areas of the vehicle deck has been covered with steel sheet where impact damage has holed the deck. It is unsecure.

There are numerous loose items in the machinery spaces and across the after half of the vehicle deck. In the main gangways and accesses in the cabins are unobstructed.

Fall Hazards

- There is no protection on the upper deck accessed from the cockpit
- There is no protection on the side decks clear of the accesses
- The access to the cockpit is an exposed fixed ladder
- The machinery spaces have no formal access arrangements

Appendix 2 - Potential for Harm

Factor	Hazard	Potential Harm	Required Action
Fuel.	Fire Safety. The presence of fuel increases the risk of a fire reaching the temperature at which the alloy structure of the craft will melt and burn. The increased capacity for heat generation increases the risk of fire spreading to adjacent craft and museum buildings.	Increase in risk to members of staff on board or visitors in museum buildings.	Removal of remaining fuel. Cleaning of tanks/bladders and pipework to reduce risk of fire at the earliest opportunity.
Fuel. Lubricating Oil.	In Event of Fire. Heat. Smoke.	Burns. Asphyxiation/inhalation.	Removal and cleaning as above. Removal of filters.
Fuel. Lubricating Oil. Hydraulic Fluid.	Slip. From spills.	Injury.	Removal and cleaning as above.
Fuel. Lubricating Oil. Hydraulic Fluid.	Contamination. Staff working around the craft will encounter fuel / residue.	Dermatitis.	Cleaning.
Fuel. Lubricating Oil. Hydraulic Fluid.	Pollution.	Contamination of ground / water.	Removal and cleaning as above.
Fuel. Sewerage. Water.	Fume Inhalation. On tank entry if not vented.	Asphyxiation.	Vent tanks on completion of cleaning.
All.	Ingestion.	Mild poisoning.	Removal / cleaning.
Sewerage. Water.	Biological Contamination / Ingestion.	Infection.	Removal / flushing / cleaning.
Mould. Animal Life.	Biological Contamination.	Infection.	Removal / cleaning. Hygiene.

Mould. Animal Life.	Biological Contamination.		
Corrosion. Products.		Reduces structural integrity.	Cleaning.
Insulation. Trunking. Air Filters.	Particulate/MMF. Pollutant.	Respiratory irritation/ infection.	Insulation bagged above deckheads. Check to ensure bags intact. Cleaning of ventilation trunking. Removal of air filters to machinery spaces.
Adhesives. Cleaners. Paint.	VOC / Contamination / Fire / Ingestion.	Inhalation / irritation. Disorientation. Poisoning. Flammability.	Remove.
Batteries 12V. Life Jacket.	Electrical Hazard. Acid. Lead Contamination. Contamination.	Electrical shock. Burns. Poisoning.	Remove. Remove.
Electrical Equipment.	Electrical Hazard.	Electrical shock. Fire.	Keep disconnected until safety checks completed.
Extinguisher. BCF.	Contamination.	Contrary to Montreal Protocol (fluorocarbons.)	Remove.
CO_2. Canisters.	Pressure Vessel.	Injury if bursts in event of impact or fire.	Remove.
Temporary Covers on Decks.	Trip. Lack of lighting increases risk of trips and other accidents internally.	Injury.	Secure/ highlight covers.
Lighting.	Trip.	Injury.	Adequate temporary lighting.

	Falls.		
Lack of Guard Wires.	Damage to side decks and lack of guard rails increases risk of falls.	Injury.	Rigging of harnesses. Temporary guard rails.
Damage to Side Decks.	Corrosion to upper deck visible as 'pin-holing' has weakened structure.		Crawling boards on upper deck.
Corrosion to Upper Deck.	Secure but lacking handrail.		Use of safety line.
Cockpit Ladder.	Some localised trip hazards on flooring / step edges.		Re-secure.
Wear to Decking Materials.	Left in aisles and accesses.		Remove.
Spare Gear.			
	Fume Inhalation.		
Fuel. Sewerage. Water.	On tank entry if not vented.	Asphyxiation.	Vent tanks on completion of cleaning.
	Ingestion.		
All.		Mild poisoning.	Removal / cleaning.
	Biological Contamination / Ingestion.		
Sewerage. Water.		Infection.	Removal / flushing / cleaning.
	Biological Contamination.		
Mould. Animal Life.		Infection.	Removal / cleaning. Hygiene.
Corrosion. Products.		Reduces structural integrity.	Cleaning.
	Particulate / MMF.		
Insulation.	Pollutant.	Respiratory irritation/ infection.	Insulation bagged above deck-heads. Check to ensure bags intact.
Trunking.			Cleaning of ventilation trunking.
Air Filters.			Removal.

Adhesives. Cleaners. Paint.	VOC / Contamination / Fire / Ingestion.	Inhalation/ irritation. Disorientation. Poisoning. Flammability.	Remove.
Batteries 12V. Life Jacket.	Electrical Hazard. Acid. Lead Contamination. Contamination.	Electrical shock. Burns. Poisoning.	Remove. Remove.
Electrical Equipment.	Electrical Hazard.	Electrical shock. Fire.	Keep disconnected until safety checks completed.
Extinguisher. BCF. HALON.	Contamination.	Contrary to Montreal Protocol on use of fluorocarbons.	Remove.
CO_2. Canisters.	Pressure Vessel	Injury if bursts in event of impact or fire.	Remove.
Temporary Covers on Decks.	Trip	Injury.	Ensure any loose covers secured and highlighted.
Lighting.	Trip. Lack of lighting increases risk of trips and other accidents internally.	Injury.	Adequate temporary lighting during operations.

	Falls		
Lack of Guard Wires.	Damage to side decks and lack of guard rails increases risk of falls.	Injury.	Rigging of harnesses. Temporary guard rails.
Damage to Side Decks.	Corrosion to upper deck visible as 'pin-holing' has weakened structure.		Of crawling boards on upper deck.
Corrosion to Upper Deck.	Secure but lacking handrail.		Use of safety line.
Cockpit Ladder.	Some localised trip hazards on flooring / step edges.		Re-secure.
Wear to Decking Materials.	Left in aisles and accesses.		Remove.
Spare Gear.			

Appendix 3 – Disposal Schedule

Should the decision be made to break up the hovercraft the logical sequence would be:

Sequence	Action	Impact	Requirement	
1	Rig fire alarm	Fire risk		Safety
1	Provide extinguishers	Fire risk		Safety
1	Remove fuel	Fire risk	Pressure de-fueller	Safety
1	Remove batteries	Fire risk		Safety
2	Temporary Lighting			Safety/Enabler
2	Empty spare gear from vehicle deck	Access	Storage	Access
2	Secure anchor			
2	Drain hydraulic system	Contamination	Storage drums	Pollution/Enabler
2	Drain lube oil system	Contamination	Storage drums	Pollution/Enabler
3	Remove pylons / fins	Lower CoG	Craneage	
3	Remove remaining hydraulic system components		Manual strip	
4	Clean hydraulic oil from volute spaces and hydraulic compt	Contamination	Manual suction/steam clean	Pollution/Enabler
4a	Remove remaining mechanical components			
4a	Remove drive shafts			
4b	Clean machinery spaces	Contamination		Pollution/Enabler
4b	Remove BCF	Pollution	Disposal	
5	Flush water system	Health	Sanitary pump	Safety
5	Flush sewerage system	Health	Sanitary pump	Safety
5	Remove fluorescent tubes	Mercury content	Manual	Pollution
6	Remove windows		Manual	
6	Remove furnishings		Manual	
6	Strip carpet / linings		Manual	
7	Remove skirt			
8	Break up side decks		Platform	

9	Remove upper structure		Hydraulic shears	
10	Remove wing structure		Hydraulic shears	
11	Strip deck boards		Manual	
11	Break up vehicle deck box section		Hydraulic shears	
12	Clear site			

Appendix 4 – Photographs

Photograph 1 - ‘Princess Margaret’

Photograph 2 - Typical condition

Photograph 3 - Damaged lift fan showing corroded bolts

Photograph 4 - Exhausts removed from empty engine compartment ‘Princess Margaret’

Photograph 5 - Damaged skirt of ‘Princess Anne’

Photograph 6 – Damage to deck beneath loose steel plate

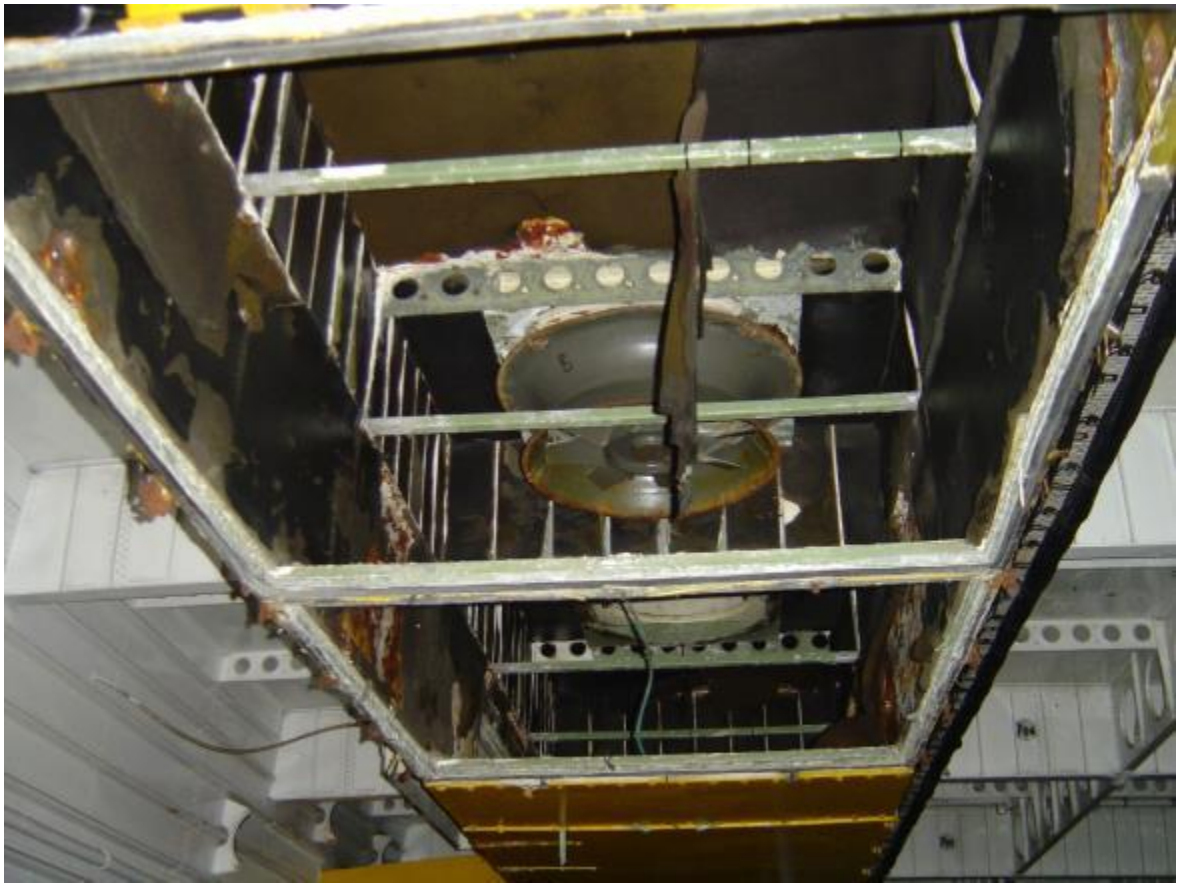
Photograph 7 – Open bow door

Photograph 8 – Vehicle deck showing oil drums and spare gear

Photograph 9 – Vehicle deck aft

Photograph 10 – Cockpit

Photograph 11 – Radar and gyro



Photograph 12 – Interior of high level fan trunking

Photograph 13 – High level trunking

Photograph 14 – Drive shaft

Photograph 15 - Water tank for sinks / window washing

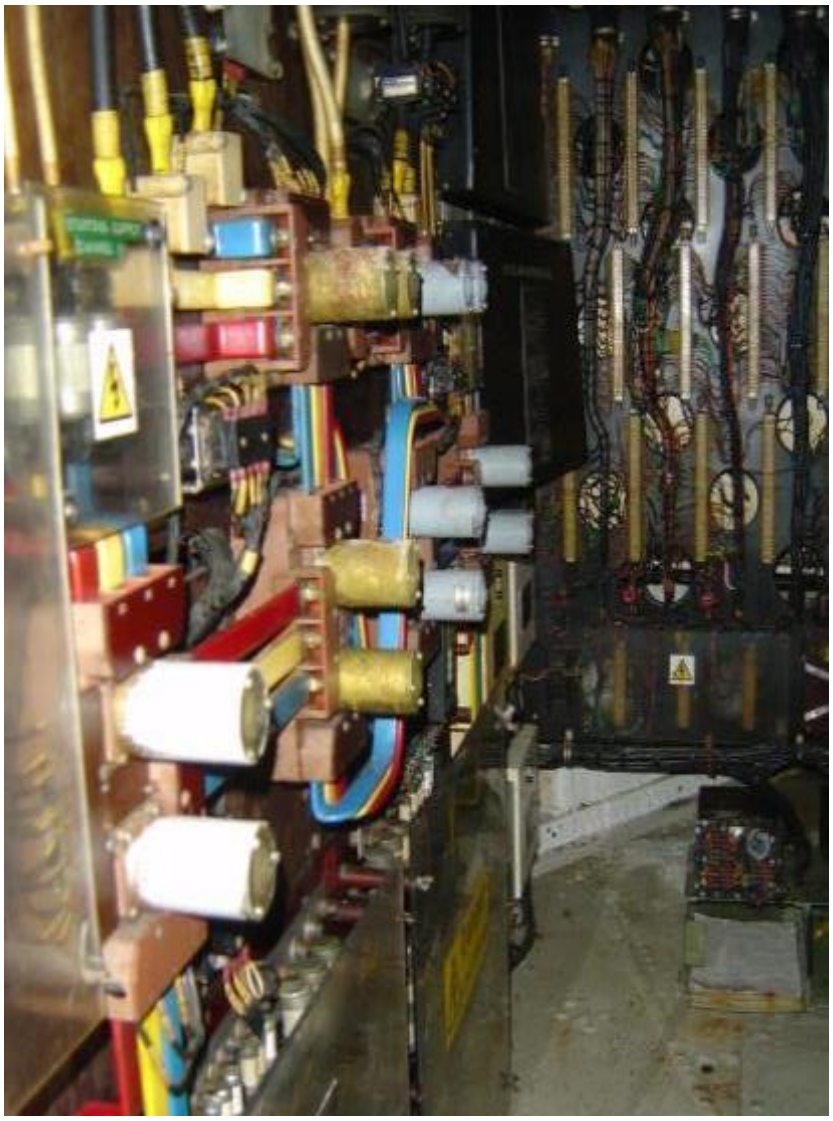
Photograph 16 - Mould on cabin deck

Photograph 17 – Mould on seat

Photograph 18 - Empty machinery compartment – with BCF (Bromochlorodifluoromethane) bottles

Photograph 19 - Hole in machinery compartment

Photograph 20 – APU (Auxiliary Power Unit) bay



Photograph 21 – Electrical bay