OFFSHORE HELICOPTER OPERATIONS

2010 UPDATE

For

NATIONAL OFFSHORE PETROLEUM SAFETY AUTHORITY

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1 BACKGROUND

The National Offshore Petroleum Safety Authority (NOPSA) is a Statutory Authority regulating Commonwealth, State and Territory coastal waters with accountability to the relevant Ministers. The role of NOPSA is to administer offshore petroleum safety legislation. The organisation's primary objectives include: -

- improving health and safety outcomes across the offshore petroleum industry;
- ensuring health and safety regulation of the offshore petroleum industry is provided to standards that are equal to the best in the world; and
- reducing the regulatory burden on the offshore petroleum industry which operates across multiple jurisdictions, by delivering a consistent and comprehensive health and safety regime.

In line with these objectives, and recognising that more than a third of the risk faced by offshore workers derives from helicopter transport, NOSPA decided to gain an in-depth knowledge of issues surrounding current and future helicopter usage in offshore operations in Australia and, in 2006, commissioned HART Aviation to conduct an analysis of the aviation support provided to the offshore oil and gas industry in Australia by commercial and other helicopter operators.

NOPSA indicated it was particularly interested in the strategic issues related to the Australian offshore aviation industry, and identified the following key areas of interest: -

- data relating to the number of helicopters in service for the Australian oil & gas industry, and their disposition around the country, and the types of helicopter (including range, passenger capacity, SAR capability, age, night flight availability);
- availability of helicopters, particularly in the area of pre cyclone evacuations from NWS & Timor Sea facilities;
- data relating to 'non commercial', (e.g., military) helicopter provision potentially available to the offshore industry;
- the CASA processes for licensing of helicopter providers;
- manpower, training and competency issues for flight crew, including Crew Resource Management [CRM] training;
- workloads and maintenance issues including on board systems monitoring (Health and Usage Monitoring - HUMS); and
- future trends in provision of helicopters to the Australian oil & gas industry, (e.g., new types such as the Sikorsky S92 and Agusta Westland EH 101, etc).

The HART Aviation report on the above mentioned commissioned review was issued on 25th January 2007, Reference 0250-06.

With the passage of time, NOPSA recognised that the level of activity within the industry had increased and commissioned HART Aviation to update the data in the original report to get a current snapshot of the industry.

NOPSA indicated the likelihood that most of the issues contained in the main body of the 2007 report were still valid and saw no point in repeating that work. However, NOPSA requested HART Aviation to review that material and provide any necessary updates, including any clarifications arising as a result of any incoming comments since the report's release.

This report addresses the outcomes of the requested analysis.

2 APPROACH TAKEN

The requested review was undertaken in five phases as follows: -

1. Review of the issues contained in the main body of the 2007 Report for continued relevance.
2. Assessment and response to any comments received on the 2007 Report.
    a. *Only one substantive comment identified. That was from the Civil Aviation Safety Authority (CASA). A copy of that submission is at Appendix No 8.1.*
3. Consideration of any particular issues raised by NOPSA.
    a. *Only one particular issue raised. That was in respect of the use of personal beacons.*
4. Issue of questionnaires to Helicopter and Petroleum companies.
    a. *A copy of the questionnaires issued are at Appendices Nos 8.2 & 8.3.*
5. Review and analysis on responses to questionnaires.
    a. *Relevant Appendices are Nos 8.4 – 8.6.*

3 REVIEW OF 2007 REPORT

A review of the issues contained in the main body of the 2007 Report for continued relevance was undertaken.

Subject to the issues identified in the following three Sections, it has been adjudged that, in principle, little change is necessary or warranted.

4 REVIEW OF COMMENTS RECEIVED ON 2007 REPORT

Only one substantive comment was received by HART Aviation. This was from the Civil Aviation Safety Authority. A copy of this submission is at Appendix 8.1. HART Aviation did not receive a copy of this submission until 11th February 2010.

It was encouraging to note that CASA was generally supportive of the comments made within the report and, indeed, commented that the eight recommendations regarding possible future roles of NOPSA are all sound.

Two specific errors within the report were identified as follows: -

1. CASA commented that the reference in the body of the paragraph 4.4.4 that certain state laws have overridden any CASA legislation is not accurate. CASA indicated that State Laws generally do not override Commonwealth law but may go beyond what is required by Commonwealth law.
    a. HART Aviation agrees that CASA has correctly quoted the position and the statement within the report could have been more precise. At the time the report was written, HART Aviation was aware of cases where a local State authority and / or contractor and / or client had required the use of twin engine helicopters for operations such as marine pilot transfer and other offshore operations even though the use of twin engine helicopters was not mandated in Australia. It was in this context that the inappropriate reference to “State” laws was made. The Petroleum (Submerged Lands) Act has also been referenced at times.

2. CASA also noted that the HART report indicates that there is currently no regulatory requirement in Australia for a CVR or an FDR. Reference was made to CAO 20.18 subsection 6, which requires any aircraft with an MTOW greater than 5,700kg that is turbine powered and type certified on or after 1 July 1965 to have an approved FDR and an approved CVR installed. This would include large transport category helicopters such as the AS332, AW139 and S92. It doesn't, however, cover the smaller helicopters (less than 5,700kg MTOW) such as the S76 and Bell 412.

    a. Again CASA has correctly stated the position. HART Aviation had overlooked the requirement for a CVR and an FDR for the heavier helicopters.

It was noted that CASA indicated that it will undertake a review of existing equipment standards and will be preparing recommendations in the near future for this purpose.

It was also noted that CASA's comments were predicated on proposed Civil Aviation Safety Regulation (CASR) Part 133 "Air Transport and Aerial Work operations – rotorcraft".

Investigation by HART Aviation indicates that this CASR Part 133 would still seem to be under development.

It appears that the **proposed CASR Part 133** will now be titled **"Passenger Transport Services and international and heavy cargo operations – rotorcraft."**

It is stated that the aim of the proposed regulations in Part 133 will be to set the minimum acceptable standards applicable to rotorcraft that are: -

- conducting a Passenger Transport Service (PTS); or
- carrying heavy cargo; or
- carrying cargo internationally.

Part 133 is planned to consolidate into one Part of the new CASRs, all the regulatory requirements that will apply in addition to, or in substitution for, the general operating and flight rules prescribed in Part 91, when using rotorcraft for air transport operations.

Part 133 will affect: -

- Air Operators involved in current charter and RPT operations (passenger and cargo) in rotorcraft;
- personnel including flight crew members, ground and support personnel involved in the operation of rotorcraft that are currently engaged in passenger-carrying Charter or Low Capacity Regular Public Transport (LCRPT) aviation operations; and
- The travelling public.

It is understood that the key proposals for the CASR 133 are: -

- a simplified structure for regulations relating to Passenger Transport Services, International Cargo and Heavy Cargo using rotorcraft, with CASR Part 133 solely addressing these operations;
- a single standard to be introduced for Passenger Transport Services, whether unscheduled or scheduled operations;
- the applicability and standards of CASR Part 133 'Passenger Transport Services' aligned to CASA's hierarchy of priorities within the Classification of Civil Aviation Activities Policy for rotorcraft;
- support for the systems approach to safety by requiring rules to make clear who is responsible for complying with each rule;
- placing a degree of responsibility on operators for providing guidance to their personnel on how to comply with regulations, when conducting operations under their Air Operator's Certificate;
- in recognition of aircraft accident history and potential risk mitigators, improving the standards for Passenger Transport Services conducted under the Visual Flight Rules at night;
- linking the requirements for Passenger Transport Services conducted under the Visual Flight Rules at night more directly to the safety risks of such operations;

- establishing safety-based outcomes for over-water flights, and providing a greater degree of flexibility to operators to establish procedures, training and recency requirements that are most appropriate to the circumstances of their operations;
- establishing rotorcraft performance standards that incorporate consideration of exposure to the potential for a forced landing, and that allow for risk management of this exposure through appropriate consideration of the likelihood and consequences of a forced landing event; and
- safety standards for rotorcraft Passenger Transport Services are based on certification under CASR Part 119, with its requirements for: continuing airworthiness under an approved aircraft maintenance program, operational risk management under a safety management system, and procedural training and checking of flight crews under an approved training and checking system.

It has been further noted that weight ranges for rotorcraft are proposed to be different from those currently mentioned in CAO 20.18 and cross referenced in the CASA commentary paper on the HART Aviation 2007 report for NOPSA.

The proposed applicability for CASR 133 rotorcraft defines larger rotorcraft as those with an MTOW of greater than 8,618kg and smaller rotorcraft as those less than or equal to 8,618kg.

5 SPECIAL ISSUES RAISED BY NOPSA

NOPSA required HART Aviation to comment on one particular aspect concerning the use of personal beacons on helicopter flights.

In an Upstream Online report on 4th February 2010 (http://www.upstreamonline.com/live/article205334.ece) it was reported that the Oil & Gas UK announced that personal locator beacons on helicopter flights were to be re-introduced to the North Sea from Monday 8th February 2010. It was noted that "the beacons – the Sea Marshall-AU9-HT – have been approved by the Civil Aviation Authority and tested extensively."

It was further noted that "co-operation between oil and gas companies, helicopter operators, regulator and the trade unions (enabled) an adequate technical solution to ensure that the personal beacons are effective and do not interfere with other systems on board the helicopter."

It was indicated that the industry had collectively agreed to make beacons standard issue for all UK Oil and Gas helicopter flights.

NOPSA raised the question as to why personal beacons are mandatory in the UK but not in Australia.

On investigating this matter, HART Aviation reached the conclusion that **the use of personal beacons have not been made mandatory by the UK CAA**, but it would seem that they will be standard issue for all UK Oil and Gas helicopter flights. One could interpret that Oil & Gas UK has, in effect, made the use of personal beacons on its flights, mandatory.

There is some background to this particular issue of personal beacons on helicopter flights in the North Sea.

In February 2009, Bond Offshore Helicopters experienced a non-fatal CFIT accident with a Eurocopter EC225LP Super Puma in the North Sea. Even though the accident involved a modern aircraft ditching within sight of a rig in calm conditions, due to unsuspected problems with the use of locator beacons, it was nearly two hours before the last survivor was rescued.

An interim UK Air Accidents Investigation Board (AAIB) report revealed that non-certificated - though legal - wristwatch personal locator beacons (PLB) routinely carried by oil workers caused the higher-powered, more capable emergency (electronic) locator transmitters (ELT) carried by the pilots and on the dinghies to shut down. This was due to a "smart" system in the ELTs designed to select a "master" beacon when they are in close proximity and to suppress the signal from the others in order to avoid confusing homing devices and save battery power. The result in the accident was that only the much weaker PLB signal was transmitted and no voice communications were available.

Furthermore, the AAIB discovered that neither the pilots nor passengers in the 2009 Bond accident realised they should extend the telescopic aerials of the ELTs to provide the maximum range.

The result, to the unhappiness of many offshore workers, was that the PLBs were immediately banned from being carried in standby mode in case they accidentally started transmitting and the smart capability of the ELTs was disabled.

One of the consequences of all the above was that the UK CAA Safety Regulation Group issued an Airworthiness Communication 2009/08 advising owners and operators of commercial air transport helicopters as to the requirements of demonstrating compliance with JAR-OPS 3.110 and ANO Article 19(8) when carrying personal locator beacons. The aim was to ensure that an incident such as mentioned above did not occur again.

The relevant JAR-OPS 3.110 states as follows: -

JAR-OPS 3.110 Portable electronic devices

An operator shall not permit any person to use, and take all reasonable measures to ensure that no person does use, on board a helicopter a portable electronic device that can adversely affect the performance of the helicopter's system and equipment.

In principle, portable electronic devices are not mandatory but are required to be approved.

In the UK, the first approved personal beacon based on the application of UK CAA Safety Regulation Group Airworthiness Communication 2009/08, is the Sea Marshall-AU9-HT, which reportedly will now be standard issue for all UK Oil and Gas helicopter flights.

The situation regarding the approval of personal locator beacons in Australia is as follows: -

Civil Aviation Regulations, in particular CAR 252A, require the carriage of an approved emergency locator transmitter (ELT) on most flights in Australian airspace. CAO 20.11 details the requirements and Section 6.3 allows for the use of an approved personal locator beacon (PLB) for that purpose. Approved ELTs and PLBs must be registered with the Australian Maritime Safety Authority.

However, whilst it is understood that CASA is fully aware of the situation within the UK CAA and the events in the North Sea as mentioned above, HART Aviation could find no evidence that CASA has yet taken any specific action to address potential interference problems between personal beacons and ELTs as experienced in the North Sea. All that is currently required is that beacons be "approved" as indicated in the immediate previous paragraph.

CASA has, however, indicated that "the offshore helicopter industry is a high priority" and is developing a Civil Aviation Safety Regulation (CASR) Part 133 to cover those operations. (Refer Section 4 and Appendix 8.1.)

Further, HART Aviation is aware that CASA has a Project AS 09/21 dealing with a draft Advisory Circular AC 91-050 (0) on "Portable Electronic Devices". The exact status of this project is uncertain.

It is hoped that either or both of the above CASA projects will consider personal beacons and other portable electronic devices in a similar fashion to that addressed by the UK CAA and in accordance with the principles of JAR-OPS 3.110 mentioned above.

6 REVIEW AND ANALYSIS OF RESPONSES TO QUESTIONNAIRES

The responses to the questionnaires are summarised in Appendices 8.5 & 8.6, which include a comparison with the responses received in 2006.

In general, the trends are considered to be visually self explanatory. However, the following specific points are highlighted: -

- Not all those contacted responded; the percentage being approximately 78%.

- **Re: Helicopter companies: -**

    - Since 2006, there has been a significant increase in the availability of HUMS (from 75% to 100%), SMS (from 75% to 100%) and HOMP or FDM (from 25% to 50%). (Appendix 8.5, 2.3.)

    - The selection of helicopters is largely driven by client needs and contractual requirements (Appendix 8.5, 2.4.)

    - The availability of 24 hours medivac has increased since 2006 from 75% to 100%, as has the provision of flight crew standby. (Appendix 8.5, 2.6.)

    - Since 2006, the availability of gravity & pressure refuelling facilities has increased from 25% to 50%; trained HLOs from 50% to 75% and effective weather reporting from 25% to 50%. (Appendix 8.5, 3.1.)

    - The number of companies with flight tracking systems has increased from 50% to 100% since 2006. (Appendix 8.5, 3.2.)

    - In general, there has been little or no change in other factors.

- **Re: Petroleum companies: -**

    - Since 2006, in tendering for contracts, there is an increased tendency to state a preferred helicopter type - and increase from 50% to 80%. (Appendix 8.6, 2.4.)

    - In general, there has been little or no change in other factors.

It is considered likely that the trends identified above would probably also be representative of those organisations which did not respond.

7 SUMMARY COMMENTS

Since 2006, there is clear evidence that CASA has a strong interest in strengthening the regulation of the offshore helicopter industry as evidenced by its plans to develop a specific CASR Part 133 to cover the industry. However, CASA has not yet established this CASR and would seem to be moving slowly on this matter and somewhat behind the UK scene.

The responses to the questionnaires has indicated several positive initiatives from the helicopter industry to improve the safety profile of offshore operations with the increased use of HUMS, SMS, HOMP and FDM, 24 hours medivac coverage and crew standby, improved weather reporting and an increase in trained HLOs. This is an encouraging and commendable trend. Credit for these improvements is also due to the Petroleum companies involved that in many cases have contractually required these improvements and that have funded them.

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8 APPENDICES

8.1 CASA COMMENTS ON 2007 REPORT

Australian Government
Civil Aviation Safety Authority

RECEIVED
10 MAR 2008
BY:

OFFICE OF THE CHIEF EXECUTIVE OFFICER

Trim Ref: GI07/10671
File Ref:

26 February 2008

Mr Simon Schubach
A/g General Manager, Regulatory
National Offshore Petroleum Safety Authority
Level 22, 44 Georges Terrace
Perth WA 6000

Dear Mr Schubach Simon

Re: Hart Aviation Report "Review of Offshore Helicopter Operations In Australia"

1. Thank you for inviting the Civil Aviation Safety Authority (CASA) to respond to issues raised in the Hart Aviation Report "Review of Offshore Helicopter Operations In Australia". I apologise for the delay in responding.

2. By virtue of the number of people moved every year and the type of aircraft used, the offshore helicopter industry is a high priority for CASA.

3. Please find attached CASA's response to issues raised in the report. A hard copy of the attached documentation has been sent to you via Australia Post.

Yours sincerely

Shane Carmody
Deputy Chief Executive Officer
Strategy & Support

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CASA response to issues raised in the Hart Aviation report "Review of Offshore Helicopter Operations in Australia" (the Hart Report)

PART ONE - Regulatory review

1. CASA's comments are predicated on proposed Civil Aviation Safety Regulation (CASR) Part 133 'Air Transport and Aerial Work operations – rotorcraft' which is yet to be made (HART report reference 4.4.1- 4.4.4 p6-8).

Classification and Certification of Offshore Rotorcraft Operations

2. When CASR Part 133 is made, helicopter offshore oil industry support operations involving the carriage of passengers to and from offshore platforms will be considered air transport operations. These operations will be regulated under Part 133A using an air transport operations methodology and will require the operator to be issued a CASR Part 119 (Air Operator Certification – Transport) Air Operators Certificate.

3. As each operator will require a Part 119 AOC, no specific "off shore approval" is envisaged to be issued. The reasoning for this is a Part 119 Air Transport AOC represents the concept of a "highest in its class" (within the Australian regulatory environment) methodology of operation and therefore additional approval is legislatively not warranted.

4. By way of example, prior to AOC issue and commencement of operations each Part 119/133A operator will be required to have:

- A CASA approved Exposition outlining the documented systems, people processes, procedures and controls for each specific operation undertaken by their aviation company.
- A fully functioning Safety Management System.
- The highest standards of maintenance.
- Dependant on category of operation, aircraft meeting stringent aircraft performance and equipment capability requirements.
- Mandatory initial and ongoing proficiency training requirements for flight crew and other crew members.
- Ongoing mandatory Crew Resource Management and Threat and Error Management training.
- A Fatigue Risk Management System.
- A requirement for an operational supervision and support system.

5. In accordance with Australia's obligations as an International Civil Aviation Organization (ICAO) Contracting State, these requirements will add a substantial layer of safety to such operations over and above that provided by the basic aircraft operating rules of CASR Part 91 (General Operating and Flight Rules) and the current regulatory situation (HART report reference 4.4.1- 4.4.4 p6-8).

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Requirement for Multi Engine aircraft operations

6. The report outlines a blanket recommendation for multi-engine rotorcraft. From a regulatory development perspective, when considered on the grounds of rotorcraft safety and risk management in passenger transport operations, the requirement for multi-engine capability relates to several dependant factors and it is not simply, as stated in the Report, a case of whether the Regulator requires "twin engine" operations or not (HART report reference 4.43-4.44 p6-8).

7. These dependant factors include:

- Consideration of where an engine failure can occur and what are the critical flight phases for engine failure i.e. takeoff, landing and enroute. [For example many current multi-engine rotorcraft will end up in the water if an engine fails early in the departure from an elevated helideck on a platform].
- Risk minimisation via the use of special departure and arrival procures for both Visual Flight Rules and Instrument Flight Rules operations.
- The One Engine Inoperative (OEI) performance capability of the multi-engine rotorcraft in question.
- Operational Environment i.e. weather, possibility of icing, freezing rain, snow, sand or sea squalls and sea spray effects and the rotorcraft's system capabilities for operating in these phenomena.
- The proven reliability of the rotorcraft and its power train. This requires the addressing of critical single point failure issues in addition to engines alone, such as tail rotor, tail rotor transmission, primary control or combining gearbox failure.
- Risk mitigators such as, is the rotorcraft participating in trend monitoring via Health and Usage Monitoring (HUMS) or Helicopter Operational Monitoring Programme (HOMP) and single pilot versus multi-crew operations.
- Type of Operation – Day/Night/VFR/IFR or combinations thereof.
- Distance from shore and Emergency Landing Areas (ELAs). [It must be remembered that over land there may also not be suitable landing areas where a survivable forced landing can be carried out].
- Sea survivability issues such as water temperature etc (HART report reference 4.43-4.44 p6-8).

8. In some situations the use of an old technology, low performance twin engine helicopter with many critical single point of failure modes and poor OEI performance could potentially increase the risk rather than reduce it compared with a modern contemporary single engine machine with Full Authority Digital Engine Control (FADEC), full HUMS support and a dual hydraulic system being flown by two pilots.

9. These factors, when combined, require more than just a "twin engine" rotorcraft, but more importantly, they require a highly reliable operational system which is a combination of risk mitigators, utilising for example:

- Correct choice of rotorcraft for the role and type of operation.
- Appropriately serviceable aircraft.
- Good flight preparation and planning.
- Operation at weights that ensure OEI performance is guaranteed.
- Using HUMS where possible.

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- Good overall risk management and planning.
- Operational Support, Supervision (flight following) and appropriate crewing by the operator.
- Availability of alternates that are capable of accepting an aircraft in OEI configuration.
- The use of life saving equipment and ensuring the availability of Search and Rescue (SAR).

10. Consistent with world's best practice, CASR Part 133 attempts to address this issue in a more holistic way by ensuring the certification requirements for rotorcraft air transport operations are cognisant of these factors and by ensuring the application of appropriate risk management principles by operators (HART report reference 4.4.1- 4.4.4 p6-8, 5.3 p.10).

11. In response to the specific issue of multi-engine operations, the intention of CASR Part 133 is that an operator engaged in rotorcraft air transport operations involving the carriage of passengers under the IFR or night VFR must conduct those operations in a multi-engine rotorcraft.

12. Therefore, unless specifically approved by CASA, any IFR or night VFR offshore passenger operation will be required to be conducted in a multi-engine rotorcraft. Without specific CASA approval, Part 133 limits such operations to minimum standard of Performance Class 2 operations which are defined in draft Part 133 as:

> *"Performance Class 2, for a rotorcraft, means the class of rotorcraft operations where, in the event of failure of the critical power unit, performance is available to enable the rotorcraft to safely continue the flight, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which case a forced landing may be required."*

13. There is in CASR Part 133 provision for consideration by CASA of approval of extended single engine aircraft operations, but the circumstances of how such an approval would be issued have not been researched as it is itself a new concept at this time. This concept though is in keeping with JAR-OPS 3 requirements outlined in Appendix 1 to JAR-OPS 3.005(e) and JAR-OPS 3.517(a).

14. For day VFR air transport operations current draft Part 133 regulations allow (in a similar fashion to today) single engine operations to be permitted over water beyond gliding distance from suitable ELA's, provided the aircraft is equipped with emergency floats and the occupants are wearing life jackets.

Note:
The reference in the table and in the body of paragraph 4.4.4 of the Hart Report that "certain state laws have overridden any CASA legislation" is not accurate. State Laws generally do not override Commonwealth laws. However they sometimes go beyond what is required by Commonwealth law. It would be useful to know which laws Hart Aviation is specifically referring to (HART report reference 4.4.4 p8).

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PART TWO - Airworthiness review

Requirement for HUMS

15. In its current form, CASR Part 133 does not have a specific mandated requirement for HUMS in all air transport operations. The exception to this is a requirement for HUMS for approval for extended IFR and Night privileges for low performance twin engine or single engine operations in the Performance class 3 category.

16. This has been further expanded by the introduction of new technology multi-engine helicopters and fleet modernisation programs such as that being sponsored by Shell Aircraft Limited (SAL) and the International Helicopter Safety Team (IHST) and the contractual requirements of the oil companies themselves. In fact many helicopter manufacturers are now building into their new machines the sensing and recording systems for HUMS as a normal part of the construction process (HART report reference 6.2 p12).

Requirement for HOMP (Flight Data Monitoring (FDM)

17. The Report outlines a recommendation for mandatory HOMP for offshore operations. HOMP is a systematic method of accessing, analysing and acting upon information obtained from digital flight data records of routine operations to improve safety. This is a relatively modern concept and is currently in use in large airline operations (HART report reference 6.3 p6-8).

18. From a helicopter perspective it represents a large extension of the capabilities of HUMS to incorporate a full flight data acquisition and analysis capacity. As outlined in the Report this system is still “pending” in the UK and it appears it will not be mandated by the UKCAA but rather introduced through an industry group, the UK Offshore Operators Association (UKOOA) (HART report reference 6.4 p12).

19. Due to the initial drafting of CASR Part 133 taking place before the inception of HOMP as a concept, it is currently not included in the draft legislation.

Requirement for Immersion Suits

20. CASR Part 133 does not currently include any regulatory reference mandating a requirement to use immersion suits on any operation. Current UKCAA requirements call for “survival suits” to be worn when the water temperature is below +10 degrees C and JAR-OPS uses the concept of “when the likely rescue time will exceed the estimated (unprotected) time of survival in the water” (HART report reference 6.5 p12).

21. The UKCAA (in Flight Operations Department Communication 25/2003) and JAA recognise that in many cases it is impractical and not justified to require the wearing of survival suits by crew and passengers during "normal" over-water transit flights in multi-engine helicopters, particularly on "one off" or low frequency operations (HART report reference 6.5 p12).

22. However, operators who have specific contracts or tasks, involving regular over-water operations, should consider whether the wearing of survival suits by crew and passengers would assist them in discharging their responsibility for 'duty of care'. This is especially relevant in circumstances where the helicopter is regularly or frequently operating over the sea during the take-off and landing phases of flight, where exposure to a ditching might arguably be higher than normal.

Requirement for Automated Voice Alerting Devices (AVAD)

23. The Report outlines a recommendation that "operators used for offshore work should be encouraged to incorporate and use AVAD technology" (HART report reference 6.4 p12).

24. While CASA agrees with this recommendation in principle, the question is whether, in setting its regulatory standards, CASA needs to *mandate* a requirement for AVAD warning systems in helicopters that do not have them (HART report reference 6.4 p12). A number of factors need to be taken into account such as current equipment fit, existing equipment doing the same job (such as the fitment of radio altimeters) and the cost of installation. CASR Part 133 does not at this time regulate for the fitment of AVAD technology to rotorcraft in air transport operations; it instead requires the rotorcraft to meet the design and airworthiness standards applicable to the operation.

Requirement for Cockpit Voice Recorder (CVR)/Flight Data Recorder (FDR)

25. The Report indicates there is currently no regulatory requirement in Australia for CVR or FDR. This is incorrect as CAO 20.18 subsection 6 requires any aircraft (which is not being used in Agricultural operations) with a MTOW greater than 5700 kg that is turbine powered and type certified on or after 1 July 1965 to have an approved FDR and an approved CVR installed.

26. This requires large transport category helicopters including AS332, AW139, and S92 to have this equipment. The Report makes no specific recommendations regarding FDR/CVR future requirements.

27. Future provisions relevant to this equipment will be contained in CASR Part 91 which will require multi-engine rotorcraft with a MTOW greater than 5700 kg which were type certified on or after 1 July 1965 to have a combined FDR/CVR or separate FDR and CVR units. Under Part 91, multi-engine rotorcraft with a MTOW greater than 3180 kg but not greater than 7000 kg certified in the transport category which were type certified on or after 1 January 2005 are to have either a combined CVR/FDR or separate FDR and CVR units, and Multi-engine rotorcraft with a MTOW of greater than 7000 kg, certified in the transport category and which were type certified on or after 1 January 2005 are to have a CVR and an FDR.

28. The Report should clarify the comments with regard to CVRs and FDRs. CVR and FDR equipment has already been mandated for Australian turbine aircraft above 5700 kg MTOW (ref CAO 20.18 section 6), and this includes several of the helicopter types currently used by Australian Operators in off-shore work - i.e. AS332L: S92A; and AW139. It doesn't, however, cover other aircraft having a lower MTOW such as the S76; B412 etc (HART report reference table 4.4 p8).

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Standards for Offshore Platforms

29. The Report recommends, as a minimum, the adoption of the CASA CAAP 92-2 guidelines and that an appropriate alternative would be to apply the standards of UK CAP 437. Either of these recommendations would meet current regulatory requirements as outlined in Regulation 92 of the *Civil Aviation Regulations 1988.*

30. At this stage we consider that the regulation of Helidecks is best left with the helicopter operators and E&P companies using UKCAA CAP 437 - Offshore Landing Areas – Guidance on Standards. This document is continually updated following extensive research by the UKCAA and a Group of Aerodrome Safety Regulators Helideck Working Group comprising National Aviation Authorities from Norway, Denmark, Holland, Ireland and Romania (HART report reference 4.1- 4.4 p6-8).

PART THREE - Offshore Flying Operations review

Section 4. – Comments on Key Areas of Interest

31. The Report states there are no single engine helicopters operating offshore, however the current regulations allow the use of single engine helicopters offshore up to 25Nm from the coast and there are offshore operators making use of this option in support of Normally Unmanned Installations (NUIs) e.g. ROC oil at Geraldton WA.

32. This section of the Report also compares the regulatory control of the industry of the UK, USA and Australia. The issues raised in the table in section 4.4.4 comparing the regulatory differences of these three countries are generally addressed by the oil companies in their contracting strategies and will be addressed by CASA to some extent in the new CASR Part 133A.

Section 5. – Other Issues

33. Different industry groups like the E&P companies will always set their own safety standards via contracting strategy and these in general follow the North Sea trends. Fleet replacement again is dictated by the E&P contracting strategy and will be influenced to a large extent by the requirement to explore more remote areas offshore requiring larger helicopters with greater payload and range.

Section 6. – Possible Future Roles of NOPSA

34. Hart Aviation has made eight (8) recommendations regarding possible future roles for NOPSA, of which are all sound. Some of the major E&P companies e.g. Woodside, Shell, Philips etc have already adopted these and taken a more proactive approach to managing the risks posed by helicopter air transport (HART report reference 6.1-6.8 p12).

Conclusion

35. CASA will undertake a review of existing equipment standards. CASA will be preparing recommendations in the near future for this purpose.

GPO Box 2005 Canberra ACT 2601 Telephone: (02) 6217 1330 Facsimile: (02) 6217 1444

8.2 QUESTIONNAIRE SENT TO HELICOPTER COMPANIES

Helicopter Companies

NOPSA Questionnaire – Offshore Helicopter Support Operations, Australia

You might recall being approached in 2006 to participate in this research, which will help the National Offshore Petroleum Safety Authority (www.nopsa.gov.au) gain knowledge of issues surrounding current and future helicopter usage in offshore operations in Australia. We thank you again for your input to that research.

NOPSA has now contracted HART Aviation (www.hartaviation.com.au) to update the 2006 statistics to reflect the current situation in 2010. Your assistance in this matter would be most appreciated.

Please send your answers to HART Aviation directly, ideally by Friday 26th February, 2010 preferably by email to zoe.bennett@hartaviation.com or by fax to 03 9349 3278.

Your answers will be kept in the strictest confidence. On request, organisations which complete the survey will receive aggregated results upon completion of the research.

Thank you in anticipation.

PART 1 ABOUT YOU

Company:	
Your Name:	
Your Position:	
Email Address:	
Do you wish to receive aggregated data resulting from this survey?	***Yes*** ☐ ***No*** ☐

PART 2 HELICOPTERS

2.1 How many helicopters do you have on offshore petroleum contracts? Please identify by type and location.

Location	Make & Model	Year of Manufacture	Total Hours	Dedicated or Shared?

2.2 Evacuation capability - please indicate inbound payload by location and helicopter type.

Location	Make & Model	Inbound payload – no holding fuel	Inbound payload – TEMPO holding fuel
1			
2			
3			
4			
5			

2.3 Does your company offer or have plans to offer the following capabilities/services?

	No, and no plan to implement	Not yet but planned. (If so, indicate timeframe)	Yes, currently in place
a. Health and Usage Monitoring Equipment [HUMS]?	***No*** ☐	***Planned*** ☐	***Yes*** ☐
b. Safety Management Systems, Flight Operations Quality Assurance or other safety programs?	***No*** ☐	***Planned*** ☐	***Yes*** ☐
c. HOMP or FDM programs?	***No*** ☐	***Planned*** ☐	***Yes*** ☐

2.4 What principally determines the specification of the helicopters you provide? (Please select <u>one</u> answer.)

a. Your company policy?	☐
b. Oil company contractual requirements?	☐
c. CASA requirements?	☐
d. Other (please specify) ☐	

2.5 Does your company have a policy or planning for:

	No	Yes; and if so specify
a. Maximum age of helicopters offered for contracts?	***No*** ☐	***Yes*** ☐
b. Helicopter replacement and future helicopter types?	***No*** ☐	***Yes*** ☐

2.6 Do you provide (please select as appropriate):

a. 24 hour helicopter medical evacuation cover?	***Yes*** ☐	***No*** ☐
b. Night cover for technical intervention flights?	***Yes*** ☐	***No*** ☐
c. Have flight crew standing by on defined call-out?	***Yes*** ☐	***No*** ☐

2.7 Do you liaise or exercise with Aus SAR or other Government agencies for emergency response purposes? ***Yes*** ☐ ***No*** ☐

PART 3 HELIDECKS

3.1 Do you find the offshore helidecks to which you operate are:

a.	Standardised in terms of marking?	***Yes*** ☐ ***No*** ☐
b.	Adequate in size?	***Yes*** ☐ ***No*** ☐
c.	Appropriately oriented to prevailing wind?	***Yes*** ☐ ***No*** ☐
d.	Equipped with refuelling capability/system which functions properly?	***Yes*** ☐ ***No*** ☐
e.	Equipped for both gravity and pressure refuelling?	***Yes*** ☐ ***No*** ☐
f.	Well supervised by trained HLOs	***Yes*** ☐ ***No*** ☐
g.	Have accurate weather reporting?	***Yes*** ☐ ***No*** ☐
h.	Comply with a standard or specification [CASA CAAP 92.2; UK CAP437 etc]	***Yes*** ☐ ***No*** ☐

3.2 Do you have flight tracking or other satellite-based position reporting systems? ***Yes*** ☐ ***No*** ☐

3.3 Do you have a helideck/fuel system audit program? ***Yes*** ☐ ***No*** ☐

8.3 QUESTIONNAIRE SENT TO PETROLEUM COMPANIES

Petroleum Companies

NOPSA Questionnaire – Offshore Helicopter Support Operations, Australia

You might recall being approached in 2006 to participate in this research, which will help the National Offshore Petroleum Safety Authority (www.nopsa.gov.au) gain knowledge of issues surrounding current and future helicopter usage in offshore operations in Australia. We thank you again for your input to that research.

NOPSA has now contracted HART Aviation (www.hartaviation.com.au) to update the 2006 statistics to reflect the current situation in 2010. Your assistance in this matter would be most appreciated.

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Your answers will be kept in the strictest confidence. On request, organisations which complete the survey will receive aggregated results upon completion of the research.

Thank you in anticipation.

PART 1 ABOUT YOU

Company:	
Your Name:	
Your Position:	
Email Address:	
Do you wish to receive aggregated data resulting from this survey?	***Yes*** ☐ ***No*** ☐

PART 2 HELICOPTERS

2.1 How many dedicated helicopters do you contract? Please identify by type and location.

Location	Helicopter Types	Number of helicopters
1		
2		
3		
4		
5		

2.2 How many shared helicopters do you contract? Please identify by type and location and indicate payload capability

Location	Helicopter Types	Number of helicopters
1		
2		
3		
4		
5		

2.3 Evacuation and emergency planning. Please provide the following information.

Location/RIG/Facility	Average Offshore POB	Planned trips to downman	Total time to downman
1			
2			
3			
4			
5			

2.4 When tendering for helicopter services, do you specify:

d. Preferred aircraft type?	***Yes*** ☐ ***No*** ☐
e. Detailed aircraft equipment fit?	***Yes*** ☐ ***No*** ☐
f. Health and Usage Monitoring Equipment [HUMS]?	***Yes*** ☐ ***No*** ☐
g. Safety Management Systems, Flight Operations Quality Assurance or other safety programmes?	***Yes*** ☐ ***No*** ☐
h. Pilot experience, licensing, recency and training?	***Yes*** ☐ ***No*** ☐

2.5 When setting technical and safety requirements for helicopters do you follow:

a. Company Policy, standards or Guidelines?	***Yes*** ☐ ***No*** ☐
b. International Association of Oil and Gas Producers Guidance [OGP]?	***Yes*** ☐ ***No*** ☐
c. APPEA guidance?	***Yes*** ☐ ***No*** ☐
d. Other? If **yes**, please specify:	***Yes*** ☐ ***No*** ☐

2.6 Do you have an ongoing safety audit program for helicopter operations?

Yes ☐ ***No*** ☐

2.7 Do you have a policy or planning for:

a. Helicopter maximum age?	***Yes*** ☐ ***No*** ☐
b. Helicopter replacement and future helicopter types?	***Yes*** ☐ ***No*** ☐
c. Use of immersion suits in cold environments?	***Yes*** ☐ ***No*** ☐

2.8 Do you have 24 hour helicopter medical evacuation cover? ***Yes*** ☐ ***No*** ☐

If **yes**, do you:	
i. Use Publicly provided Emergency Medical or Police Helicopters?	***Yes*** ☐ ***No*** ☐
ii. Use dedicated contracted helicopters?	***Yes*** ☐ ***No*** ☐
iii. Use shared contracted helicopters?	***Yes*** ☐ ***No*** ☐
iv. Have flight crew standing by on defined call-out?	***Yes*** ☐ ***No*** ☐

2.9 Do you liaise or exercise with AusSAR or other Government agencies for emergency response?
Yes ☐ ***No*** ☐

PART 3 HELIDECKS

3.1 When tendering for offshore facilities/rigs, do you specify helideck:

a. size – in relation to helicopters being used	***Yes*** ☐ ***No*** ☐
b. marking	***Yes*** ☐ ***No*** ☐
c. refuelling capability/system	***Yes*** ☐ ***No*** ☐
d. standard or specification [CASA CAAP 92.2; UK CAP437 etc]	***Yes*** ☐ ***No*** ☐

3.2 Do you have trained helideck supervisors [HLOs and HDAs]? ***Yes*** ☐ ***No*** ☐

If **yes**:

i. To what standard they are trained:

ii. Where they are trained:

iii. How often they are trained:

3.3 Do you have a helideck and refuelling system audit program? ***Yes*** ☐ ***No*** ☐

3.4 Do you have a helideck and refuelling system preventive maintenance program?

Yes ☐ ***No*** ☐

8.4 DETAILS OF COMPANIES CONTACTED IN 2010

Helicopter Companies		
Company	**Contact**	**Position**
Bristow Helicopters	Kirby Robinson	Quality & Safety Manager
CHC	Renee Boyce	Flight Standards Coordinator
Jayrow Helicopters	James Harris	Safety/Quality Manager
Police Air Wing	Bruce Thomas	Officer in Charge

Petroleum Companies		
Company	**Contact**	**Position**
AGR	Trevor Beard	Materials Controller
Apache	Andre Billstein	Marine / Aviation Superintendent
Australian Customs Service	*No Response*	
BHP Billiton Petroleum	Jamie Van Kampen	Materials & Logistics Manager
Chevron	Andrew McIntosh	Aviation Team Lead
ConocoPhillips	Peter Lymn	Logistics Team Lead
ENI Australia	*No Response*	
Esso Australia	Ron Reinten	Safety, Health, Environment & Security Manager
Inpex Browse	*No Response*	
Nexus Energy	Michelle Zaunbrecher	HSEC Manager
Origin Energy	Peter Mott	Supply and Logistics Superintendant
PTTEP Australasia (formerly Coogee)	Andrew Jacob	CDO
Santos	*No Response*	
Woodside Energy	Verica Stojceska	Air Logistics Coordinator

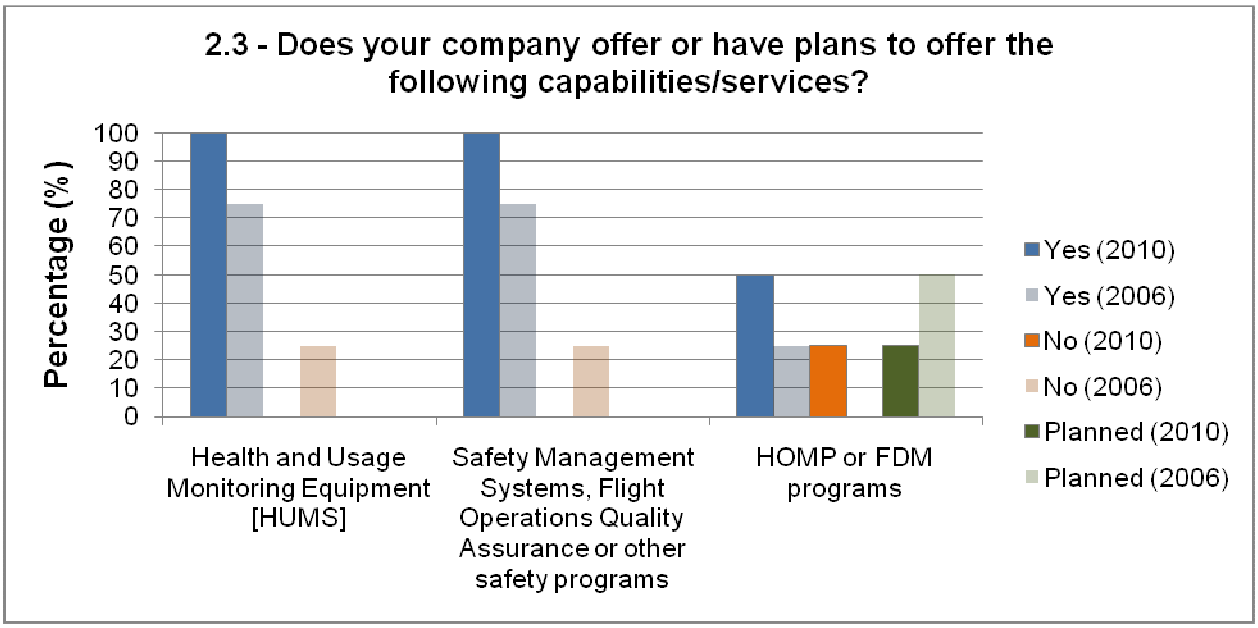
8.5 SUMMARY OF RESPONSES FROM HELICOPTER COMPANIES

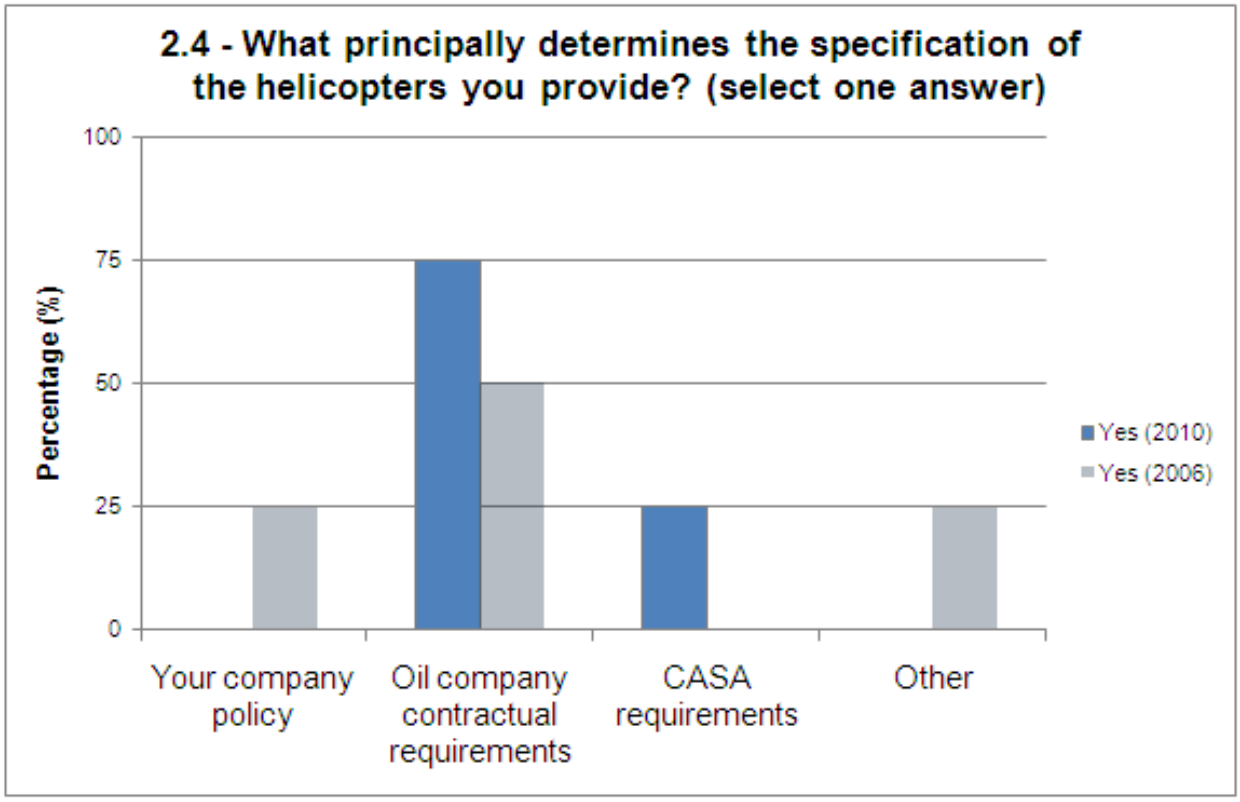
2.1 - How many helicopters do you have on offshore petroleum contracts? Please identify by type and location:

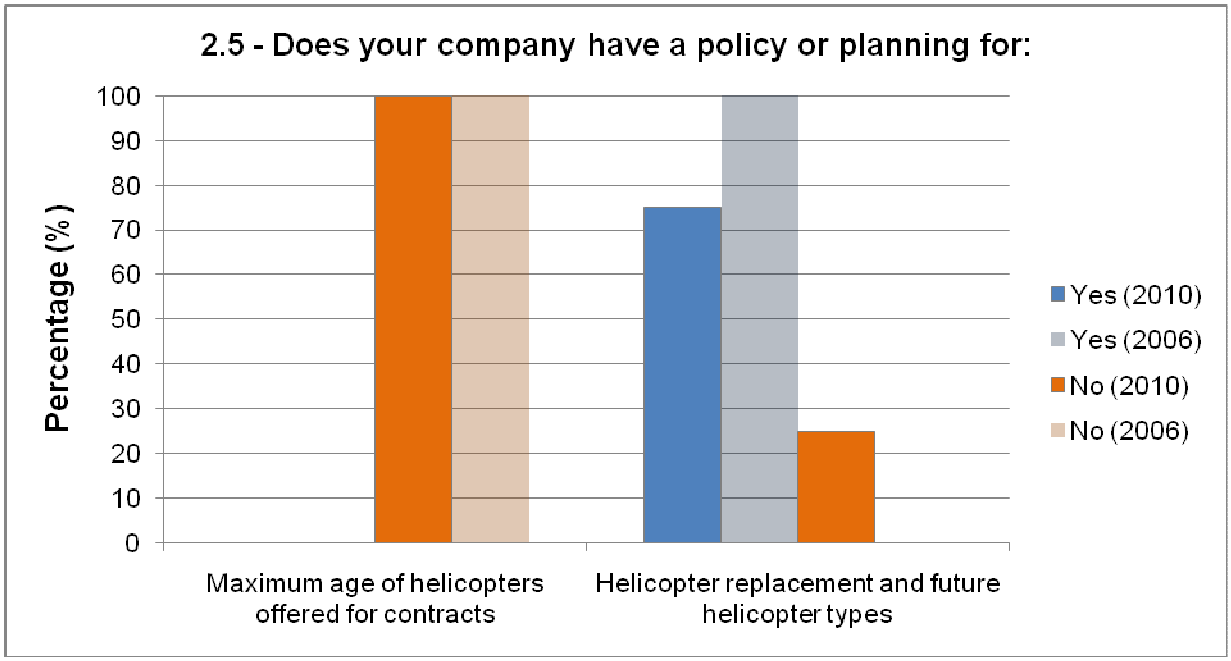
Helicopters Companies	2010 Location	Type	Year	Total Hours	Dedicated or Shared?	2006 Location	Type	Year	Total Hours	Dedicated or Shared?
Bristow Helicopters	Barrow Is.	AS332L	1984	27,728.73	D	Geraldton	Bell 206	1990	11437.32	D
	Barrow Is.	EC225LP	2008	255.53	D	Exmouth	S76A+	1980	6443.06	D
	Varanus Is.	BK117B2	1990	6,970.32	D	Barrow Is.	S76A+	1981	17014.13	S
	Essendon	AS332L	1982	32,936.75	D	Barrow Is.	S76A+	1980	6296.5	S
	Essendon	AS332L	1983	15,593.46	D	Varanus Is.	BK117	1990	4107.52	S
	Dongara	B206B	1990	12,411.32	D	Karratha	S76A+	1980	16179.25	S
	Karratha	S76A	1980	17,959.45	S	Karratha	AS332L	1983	24322.25	D
	Karratha	AS332L	1984	18,273.16	D	Karratha	AS332L	1984	16253.03	D
	Karratha	AS332L1	1982	27,632.57	D	Karratha	AS332L	1982	28294.56	D
	Karratha	AS332L	1982	31,606.20	D	Broome	AS332L	1983	16831.4	D
	Karratha	S76C++	2008	457.36	S	Essendon	S76A+	1981	6254.34	D
	Karratha	EC225LP	2008	872.57	D					
CHC Helicopters	Broome	AS332	1990	15,000	-	Dili	Super Puma L	1983	18209.8	D
	Broome	S92	2006	2,000	-	Dili	Super Puma L	1983	26230.3	D
	Dili	AS332	1983	21,000	-	Darwin	Super Puma L	1990	14465	Varies
	Dili	AS332	1994	13,000	-	Truscott	Super Puma L	1990	14854.8	S
	Dili	AS332	1983	28,000	-	Darwin	Super Puma L	1991	12521.5	Varies
	Dili	AS332	1982	11,000	-	Essendon	S92A++	1981	15741.6	D
	Truscott	AS332	1990	14,000	-	Broome	S92A	2006	13.7	D
	Truscott	AS332	1990	18,000	-					
Jayrow Helicopters	Karratha	BK117B2	1990	4,100	D	Bass Strait	2 x S76A	1981	15000	D
	Karratha	BK117B1	1990	2,100	D	Bass Strait	2 x S76A++	1982	7,000 each	S
	Longford	S76A++	1981	8,700	D	Karratha	1 x BK117B2	1990	5000	D
	Darwin	S76A++	1983	5,500	D					
	Karratha	S76A++	1979	14,400	D					
	Longford	S61N	1976	15,650	D					
Police Air Wing	Essendon	AS365N3	2001	9,273	S	-				
	Essendon	AS365N3	2001	5,541	D	-				
	Essendon	SA365C1	1978	14,474	S	-				
	Essendon	AS350BA	1987	8,314	D	-				

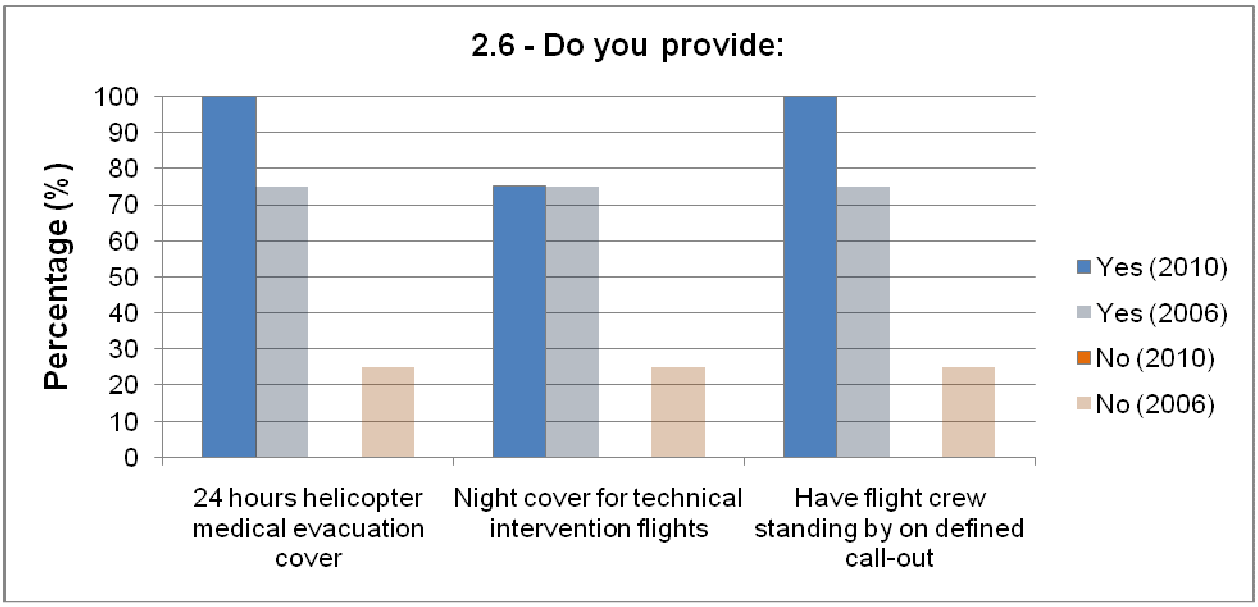
2.2 - Evacuation capability - please indicate inbound payload by location and helicopter type:

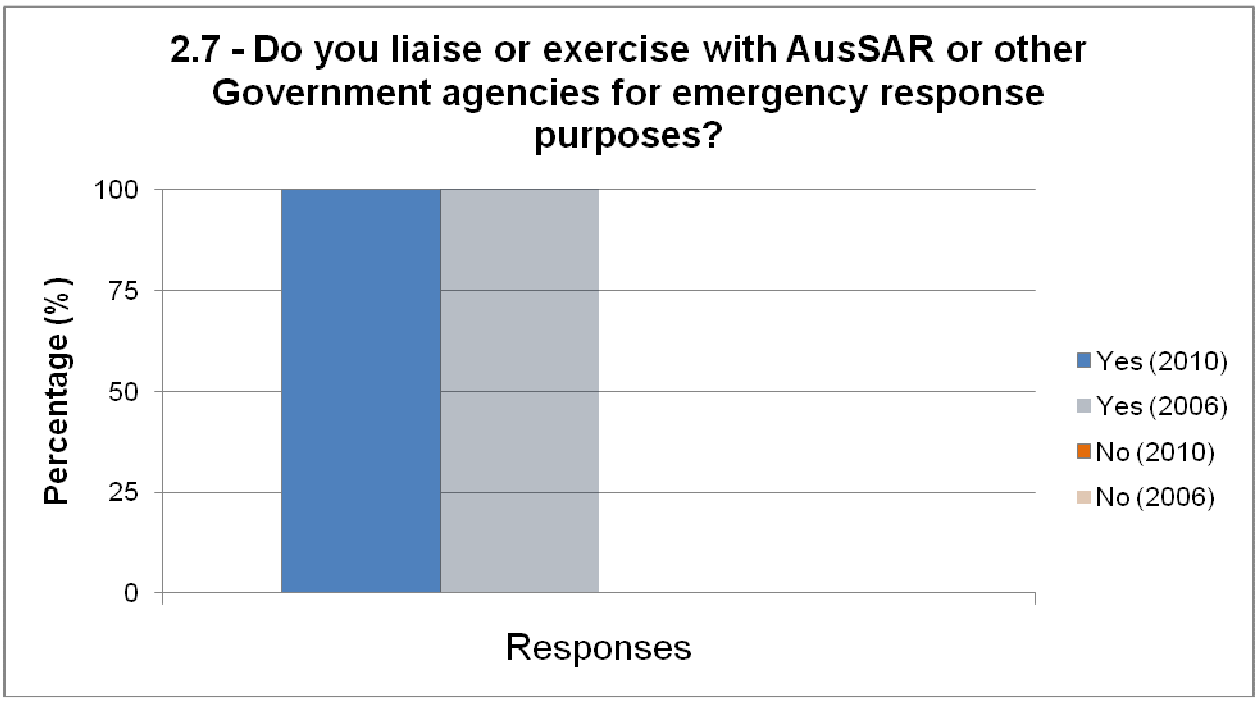
	2010		Inbound payload -	Inbound payload -	2006		Inbound payload -	Inbound payload -
	Location	Type	no holding fuel	TEMPO holding fuel	Location	Type	no holding fuel	TEMPO holding fuel
Bristow Helicopters	Dongana	B206	6 pax	n/a	Geraldton	Bell 206	6 pax	n/a
	Varanus Is.	BK117	7 pax	n/a	Varanus Island	BK117	7 pax	n/a
	Barrow Is.	AS332	18 pax	for discussion	Exmouth	AS332	18 pax	for discussion
	Barrow Is.	EC225	19 pax	with HART due to	Exmouth	S76A+	8 pax	with HART due to
	Karratha	S76A+	10 pax	numerous variables	Karratha	AS332	18 pax	numerous variables
				that will affect	Karratha	S76A+	8 pax	that will affect
				payload	Barrow Island	AS332	18 pax	payload
					Barrow Island	S76A+	8 pax	
					Broome	AS332	12 pax	
					Essendon	AS332	18 pax	
					Essendon	S76A+	10 pax	
CHC Helicopters	Broome	AS332	1676kg	1409kg	-			
	Broome	S92	2377kg	1977kg	-			
	Dili	AS332	vmc 1860kg	imc 1150kg	-			
	Truscott	AS332	1942kg	1597kg	-			
					-			
					-			
					-			
					-			
Jayrow Helicopters	Kta	S76A++	1080kg	790kg	Bass Strait	2 x S76A	1000 Kgs	700 Kgs
	Kta	BK117	774kg	565kg	Bass Strait	2 x S76A++	1095 Kgs	780 Kgs
	Longford	S61N	2490kg	2150kg	Bass Strait	1 x BK117B2	910 Kgs	700 Kgs
	Longford	S76A++	1276kg	1006kg				
Police Air Wing	n/a				Essendon Airport	AS365 N3	Dependent on location	
						AS365 N3	Dependent on location	
						SA 365 C1		

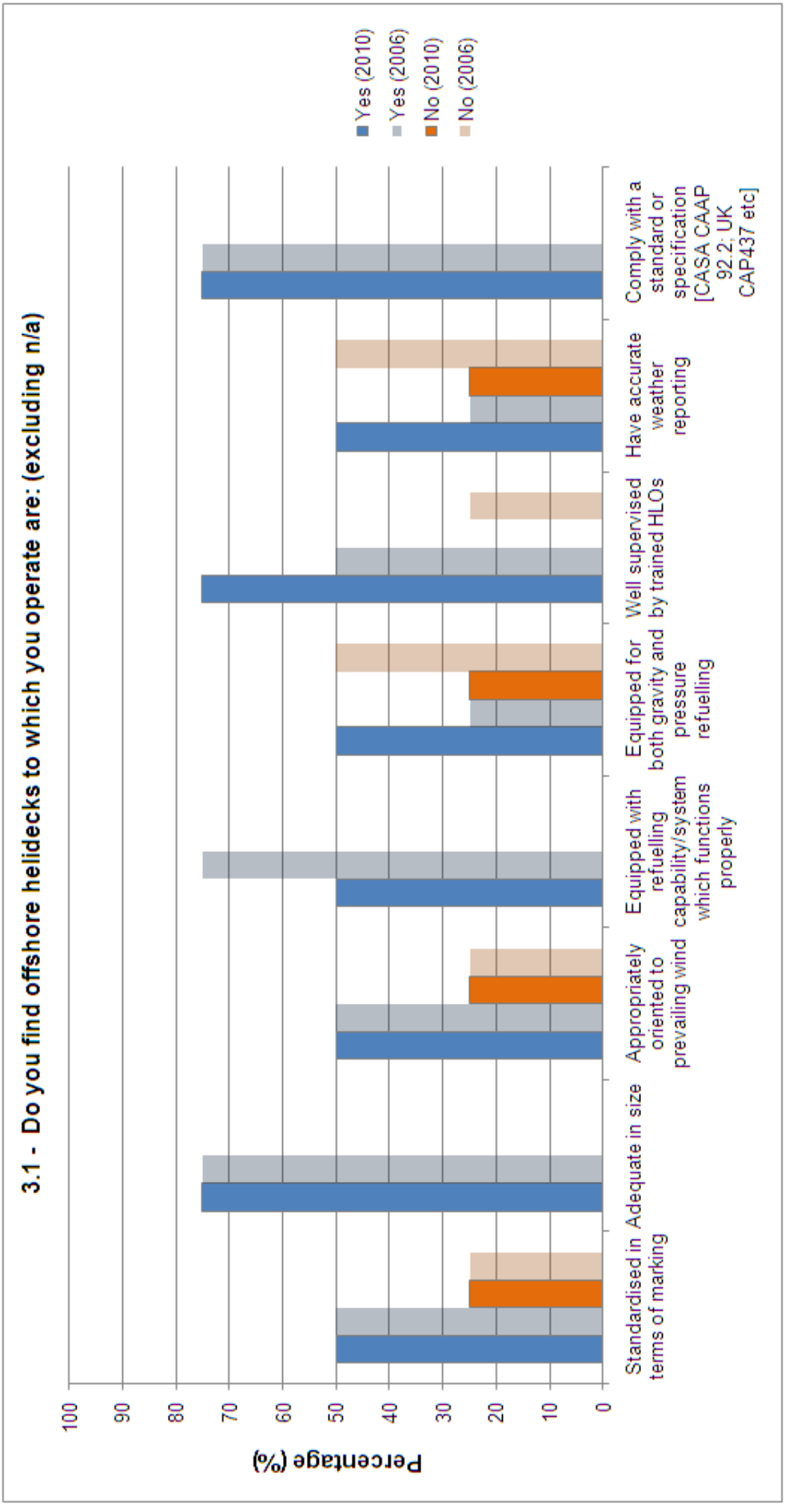


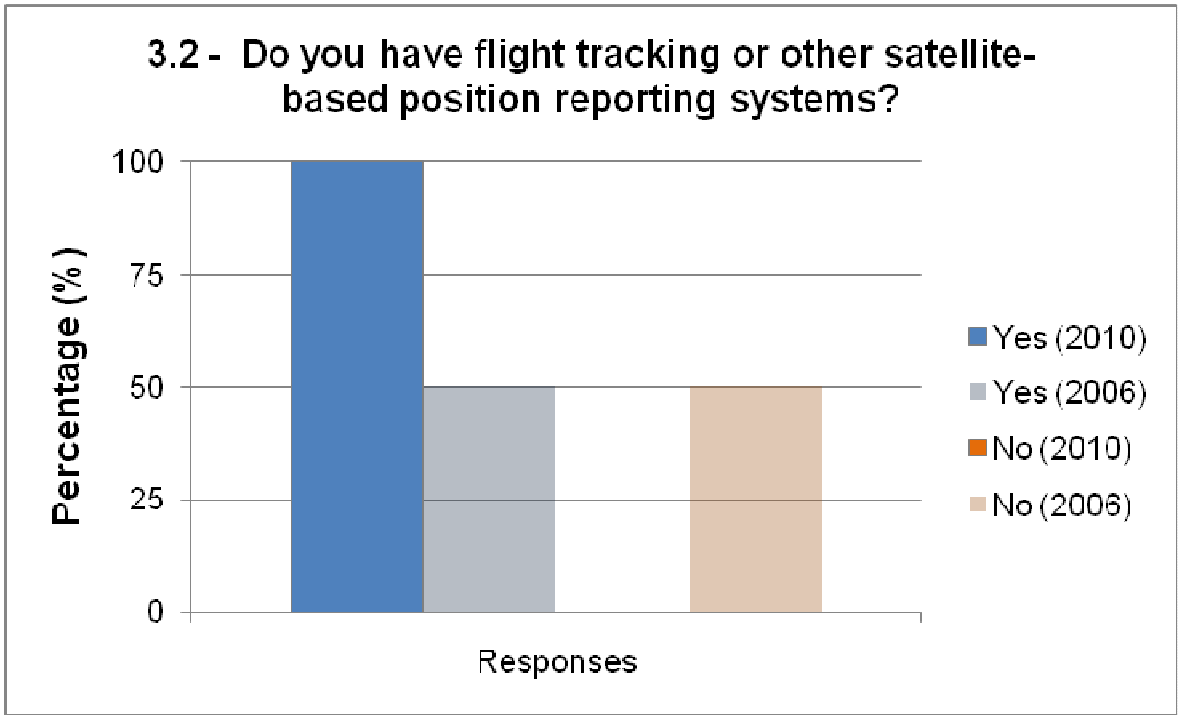

2.4 - What principally determines the specification of the helicopters you provide? (select one answer)
Percentage (%)
100
75
50
25
0
Your company policy
Oil company contractual requirements
CASA requirements
Other
Yes (2010)
Yes (2006)

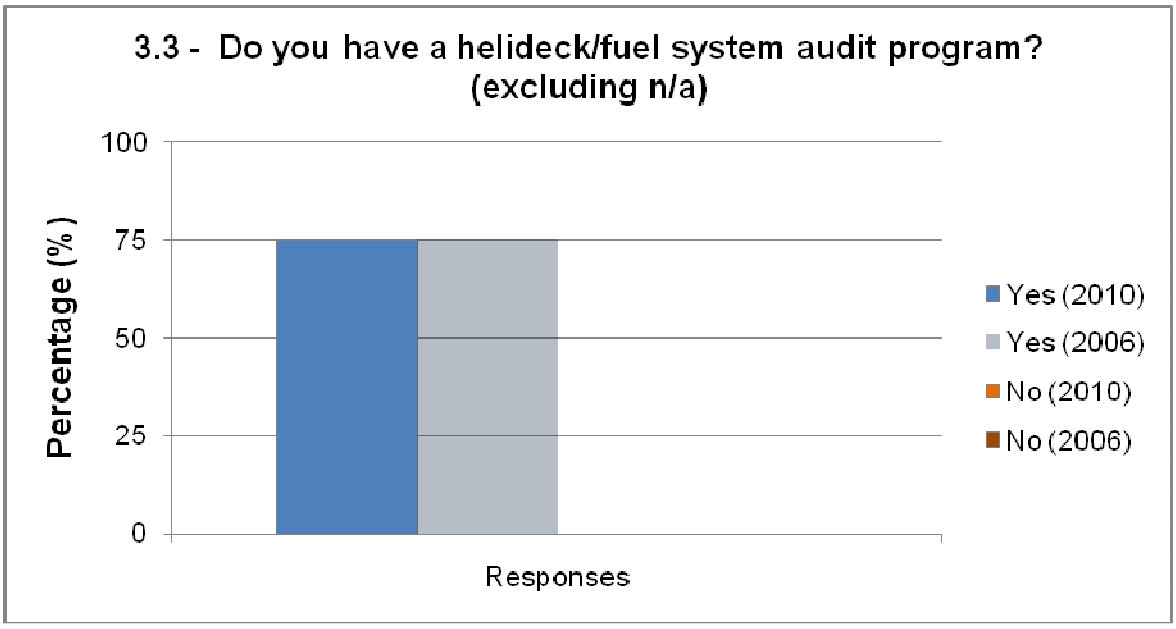

2.5 - Does your company have a policy or planning for:
Percentage (%)
100
90
80
70
60
50
40
30
20
10
0
Maximum age of helicopters offered for contracts
Helicopter replacement and future helicopter types
Yes (2010)
Yes (2006)
No (2010)
No (2006)


2.6 - Do you provide:
Percentage (%)
100
90
80
70
60
50
40
30
20
10
0
24 hours helicopter medical evacuation cover
Night cover for technical intervention flights
Have flight crew standing by on defined call-out
Yes (2010)
Yes (2006)
No (2010)
No (2006)


2.7 - Do you liaise or exercise with AusSAR or other Government agencies for emergency response purposes?
Percentage (%)
100
75
50
25
0
Responses
Yes (2010)
Yes (2006)
No (2010)
No (2006)


3.1 - Do you find offshore helidecks to which you operate are: (excluding n/a)
Yes (2010)
Yes (2006)
No (2010)
No (2006)
Percentage (%)
100
90
80
70
60
50
40
30
20
10
0
Standardised in terms of marking
Adequate in size
Appropriately oriented to prevailing wind
Equipped with refuelling capability/system which functions properly
Equipped for both gravity and pressure refuelling
Well supervised by trained HLOs
Have accurate weather reporting
Comply with a standard or specification [CASA CAAP 92.2; UK CAP437 etc]


3.2 - Do you have flight tracking or other satellite-based position reporting systems?
Percentage (%)
100
75
50
25
0
Responses
Yes (2010)
Yes (2006)
No (2010)
No (2006)


3.3 - Do you have a helideck/fuel system audit program? (excluding n/a)
Percentage (%)
100
75
50
25
0
Responses
Yes (2010)
Yes (2006)
No (2010)
No (2006)

8.6 SUMMARY OF RESPONSES FROM PETROLEUM COMPANIES

2.1 - How many dedicated helicopters do you contract? Please identify by type and location.

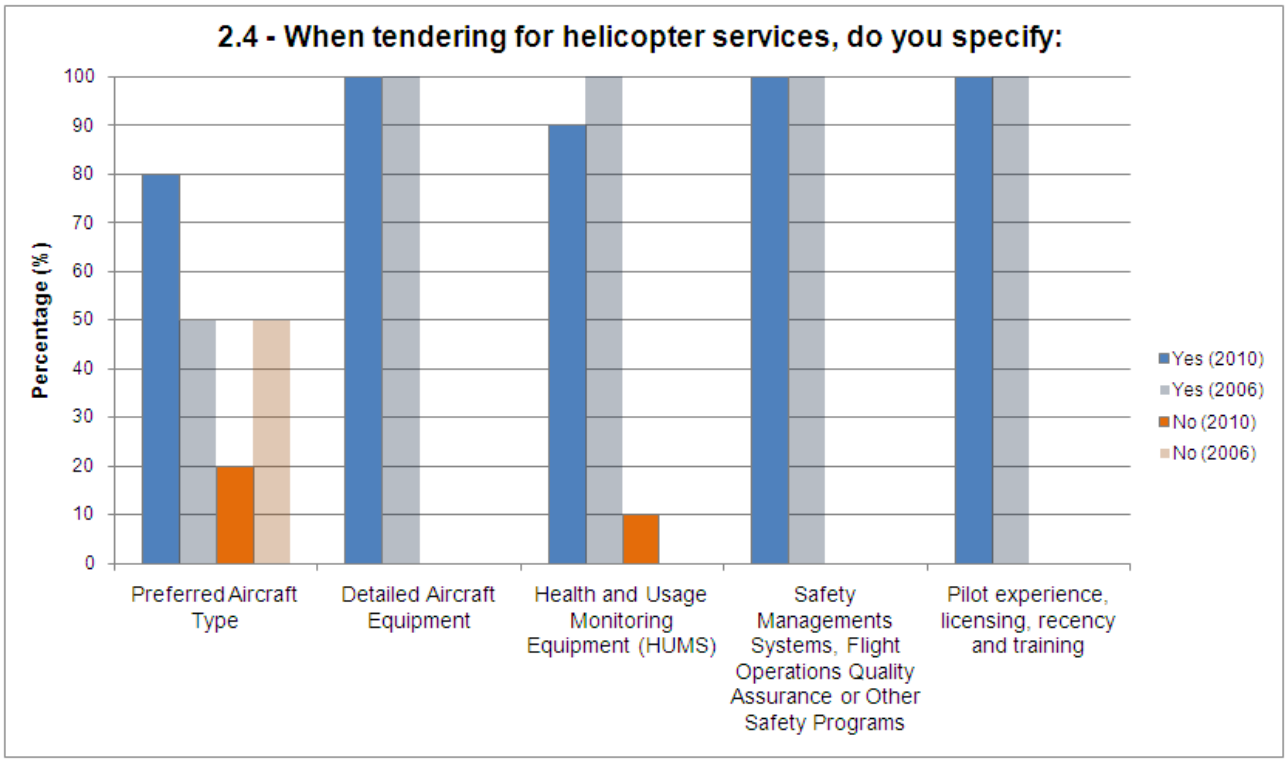
Petroleum Companies	2010 Location	Type	No.	2006 Location	Type	No.
Apache	Varanus	BK117	1	Varanus	BK117	1
	Karratha	Super Puma / BK 117 / S76A+	1	Karratha	BK117	1
	Karratha	BK117	1			
	Karratha	S76A+	1			
	Learmonth	S76A+	1			
AGR	None			no response 2006		
BHP Billiton	Exmouth / Learmonth	Sikorsky S76C++	1	Learmonth	Sikorsky S76A+	1
Chevron	Barrow Is.	EC225	1	no response 2006		
	Barrow Is.	AS332L	1			
Conoco Phillips	Dili, Timor Leste	AS332L	2	Dili, Timor Leste	SupaPuma	2
	Broome	AS332L1	1	Darwin	SupaPuma	1
	Broome	S92	1			
Esso Australia	Longford Heliport	Sikorsky S76	6	no response 2006		
	Longford Heliport	Sikorsky S61	1			
Nexus Energy	None.			no response 2006		
Origin Energy	None.			Tooradin	Sikorsky S76A+	2
PTTEP Australasia	Truscott	Super Puma L1	1	Truscott	Super Puma	1
Woodside Energy	Karratha	AS332L	2	Karratha	AS332 / S76	2
	Karratha	EC225	1	Broome	AS332	1
	Karratha - Pluto	AW139	2	Learmonth	S76	1
				Essendon	S76	1

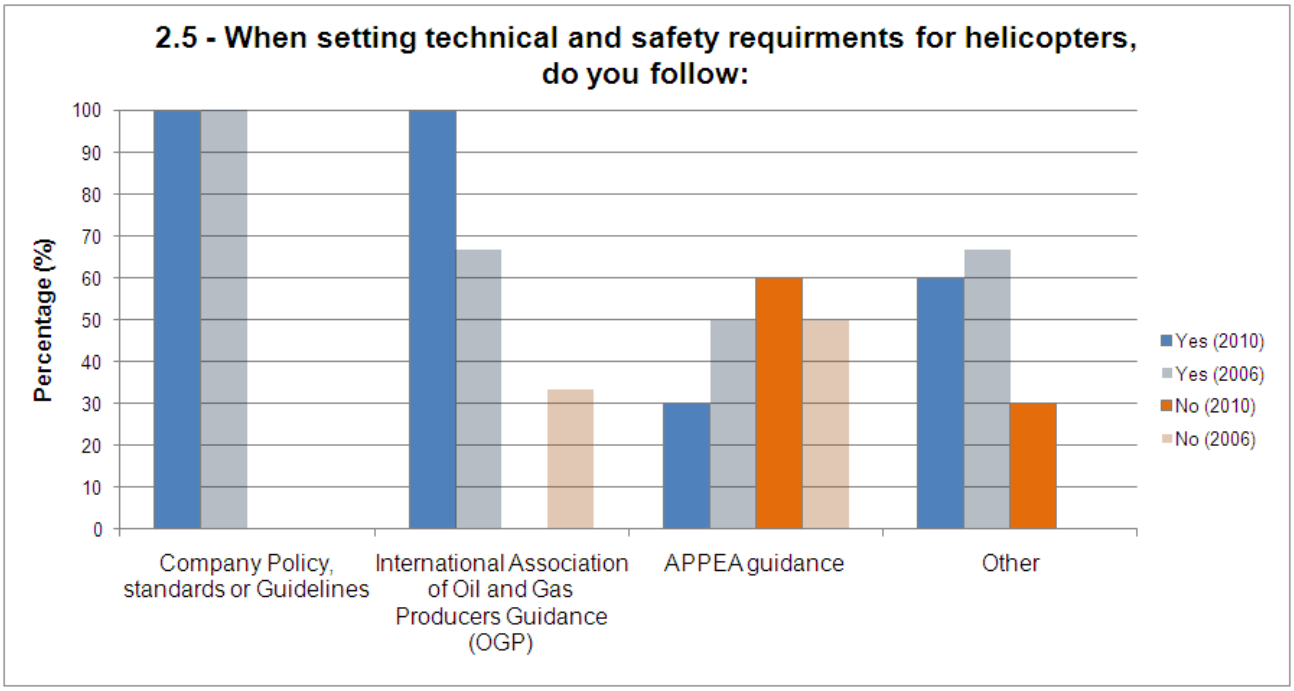
2.2 - How many shared helicopters do you contract? Please identify by type and location and indicate payload capability:

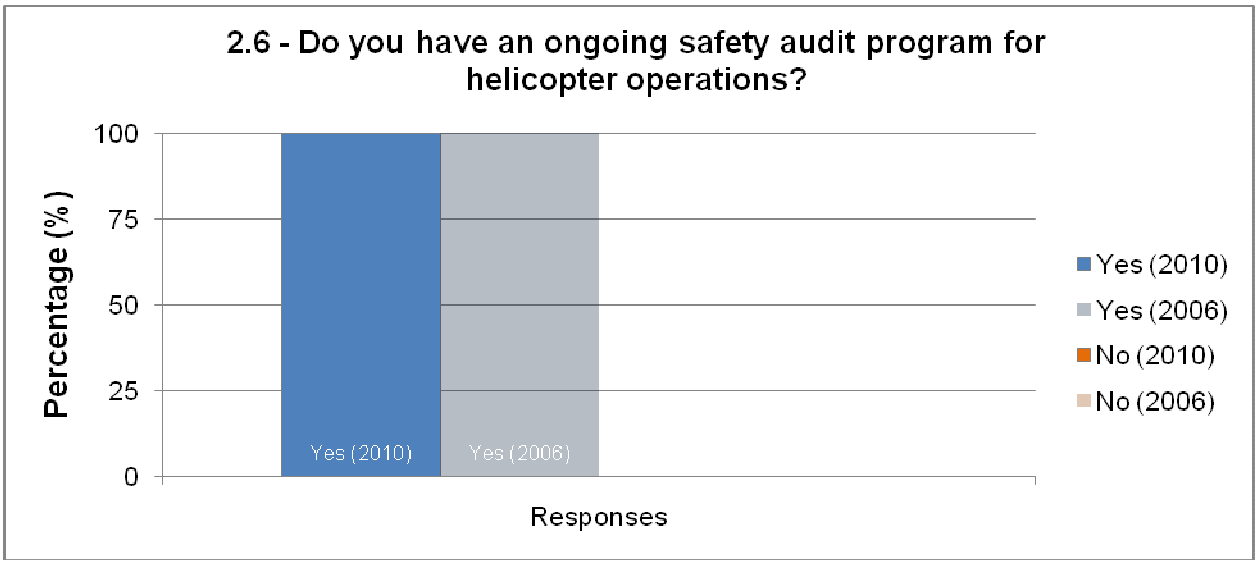
	2010			2006		
	Location	Type	No.	Location	Type	No.
Apache	None.			Barrow Is. Barrow Is.	S76 AS332	2 1
AGR	Tooradin VIC Tooradin VIC	Sikorsky 76C++ (1056kg payload) Sikorsky 76A++ (642kg payload)	1 1	no response 2006		
BHP Billiton	Exmouth / Learm	Eurocopter AS332L	1	Barrow Is. Barrow Is. Learmonth	Sikorsky S76A+ AS332L Super Puma AS332L Super Puma	1 1 1
Chevron	None.			no response 2006		
Conoco Phillips	None.			Darwin	SupaPuma L	1
Esso Australia	None.			no response 2006		
Nexus Energy	None.			no response 2006		
Origin Energy	Tooradin Tooradin	Sikorsky S76C++ Sikorsky S76A+	1 1	None.		
PTTEP Australasia	Truscott	Super Puma L1	1	Truscott	Super Puma	1
Woodside Energy	Learmonth Otway Otway Truscott	AS332L S76 A+ S76 C++ AS332L2	1 1 1 1	Truscott	AS332	1

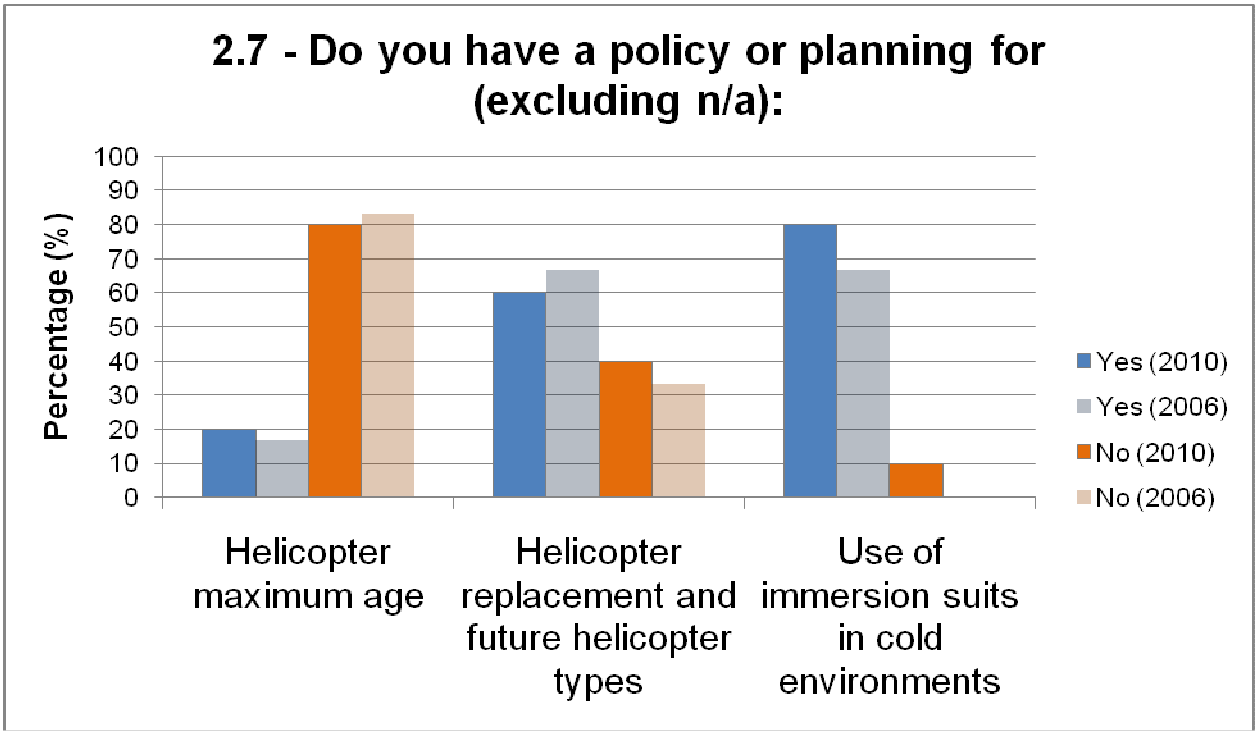
2.3 - Evacuation and emergency planning. Please provide the following information:

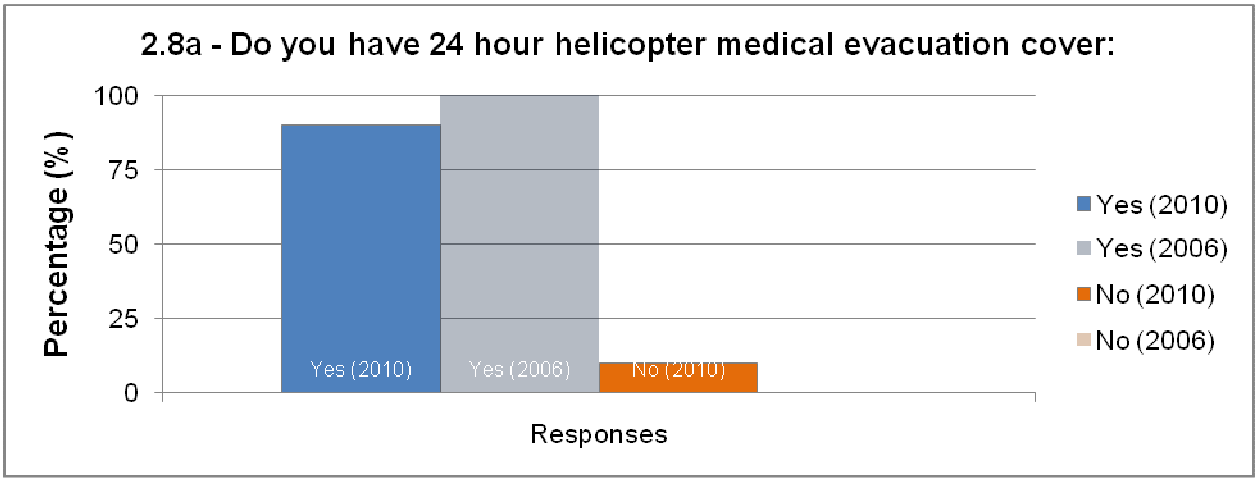
	2010 Location	Average OS POB	Planned trips to downman	Total time to downman	2006 Location	Average OS POB	Planned trips to downman	Total time to downman
Apache	Varanus	90	n/a	2 Days	Varanus	100	6	3 Hours
	Stena Clyde	110	7	2 Days	Stag	22	3	3 Hours
					Ensco 106	80	6	4-8 Hours
					Ensco 67	75	6	4-8 Hours
AGR	FPSO Crystal Ocean \	32	3	60-90 Mins	no response 2006			
BHP Billiton	Stybarrow Venture	40	1	60 Mins	Griffin Venture	32	1	1 Hour
	Pyrenees Venture	40	1	60 Mins	Atwood Eagle	100	6	6 Hours
	Ocean Epoch	100	6 - 9	13.5 Hours over 2 days				
Chevron	Barrow Is.	400	Nil	n/a	no response 2006			
	Thevenard Is.	30	Nil	n/a				
	Atwood Eagle	115	6	2 Days				
	Ensco 7500	120	4	2 Days				
Conoco Phillips	Transocean Legend	120	10	2 Days	Timor Sea – JPDA – Bayu-Undan	140	Varies	Varies
	Bayu Undan	180	13	2.5 Days	Timor Sea – Barossa-1 Well/Stena	90	12	21 - 36
Esso Australia	Barracouta Platform	14.7	2		no response 2006			
	Bream Platform	15.8	2					
	Cobia Platform	17	2					
	Flounder Platform	26.6	3					
	Fortescue Platform	19.8	2					
	Halibut Platform	19.7	2					
	Kingfish A Platform	18.4	2					
	Kingfish B Platform	18.4	2					
	Marlin Platform	17.4	2					
	Mackerel Platform	16.9	2					
	Snapper Platform	15.7	2					
	Tuna Platform	23.6	3					
	West Kingfish Platforn	16.3	2					
	West Tuna Platform	17.3	2					
Nexus Energy	Drilling at Crux Field (A	90	5 - 6	72 Hours	no response 2006			
	Field ops - Lontom fiel	90	6 - 7	48 Hours				
Origin Energy	Yolla	10	1	45 Mins	Yolla	12	2	3.5
PTTEP Australasia	Jabiru	33	n/a	not provided	Challis	40	3	12
	Challis	33	3	not provided	Jabiru	43	1	4
					Jabiru	43	3	12
Woodside Energy	North West Shelf	463	26	3 - 5 Days	Broome / NH 6	100	7	3 Days
	Learmonth	254	14	3 Days	Karratha NRA / GWA / CP	96 / 96 /	?	3 Days
	Truscott	40	3	2 Days	Karratha JB / OB / S 703	00 / 100 / 100	?	3 Days
	Otway	0	n/a	n/a				
	NWS - Pluto	369	31	5 Days				

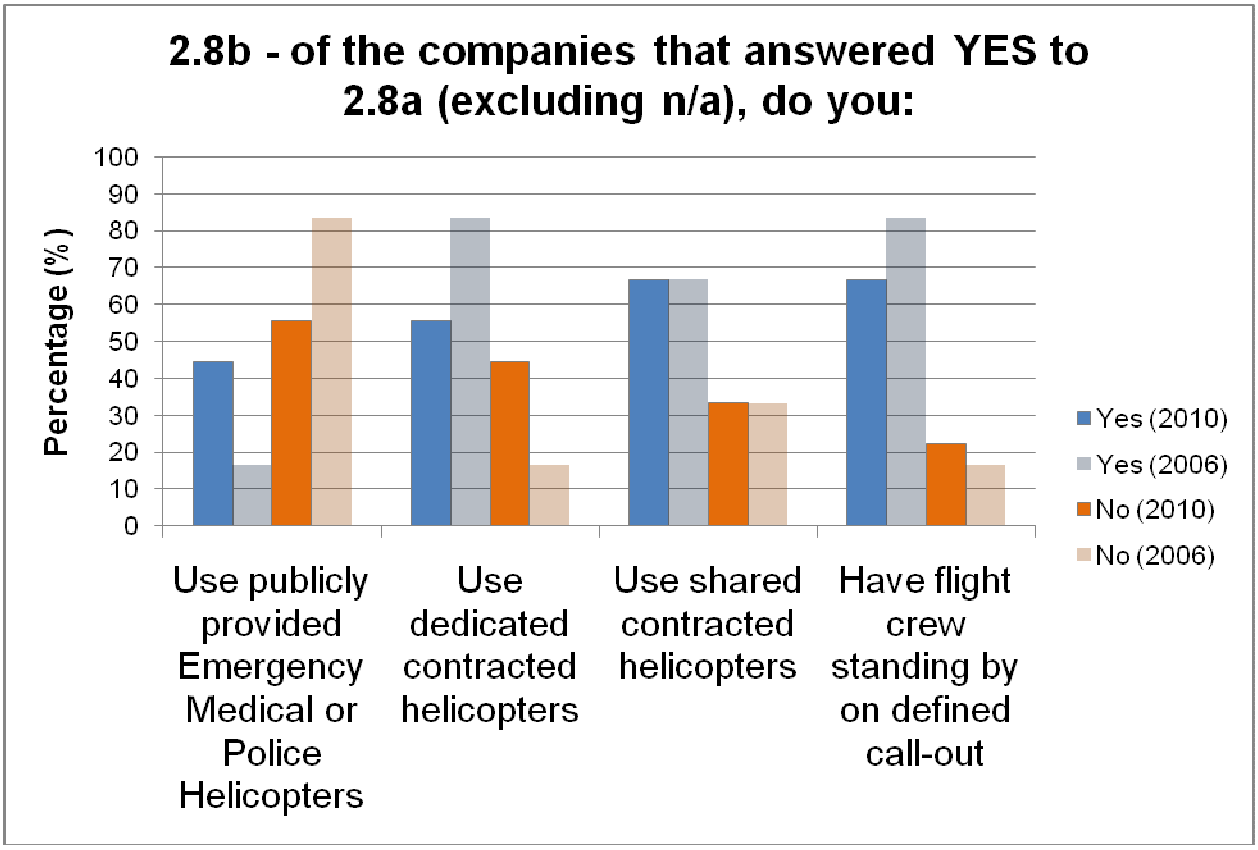

2.4 - When tendering for helicopter services, do you specify:
Percentage (%)
100
90
80
70
60
50
40
30
20
10
0
Preferred Aircraft Type
Detailed Aircraft Equipment
Health and Usage Monitoring Equipment (HUMS)
Safety Managements Systems, Flight Operations Quality Assurance or Other Safety Programs
Pilot experience, licensing, recency and training
Yes (2010)
Yes (2006)
No (2010)
No (2006)

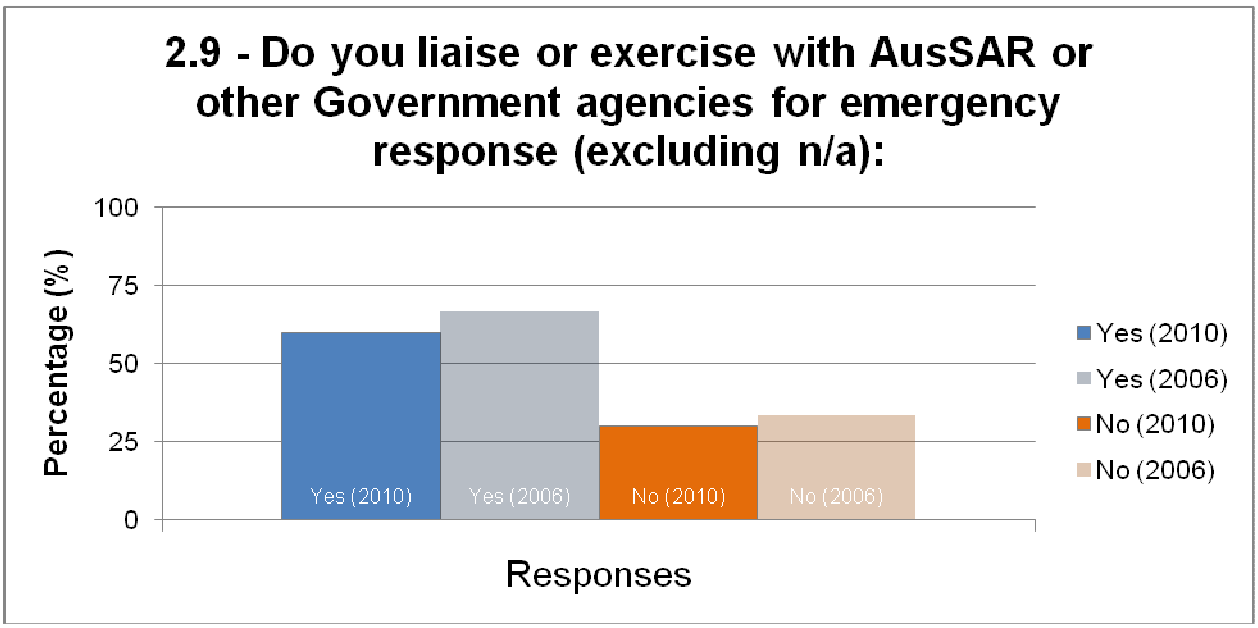

2.5 - When setting technical and safety requirments for helicopters, do you follow:
Percentage (%)
100
90
80
70
60
50
40
30
20
10
0
Company Policy, standards or Guidelines
International Association of Oil and Gas Producers Guidance (OGP)
APPEA guidance
Other
Yes (2010)
Yes (2006)
No (2010)
No (2006)

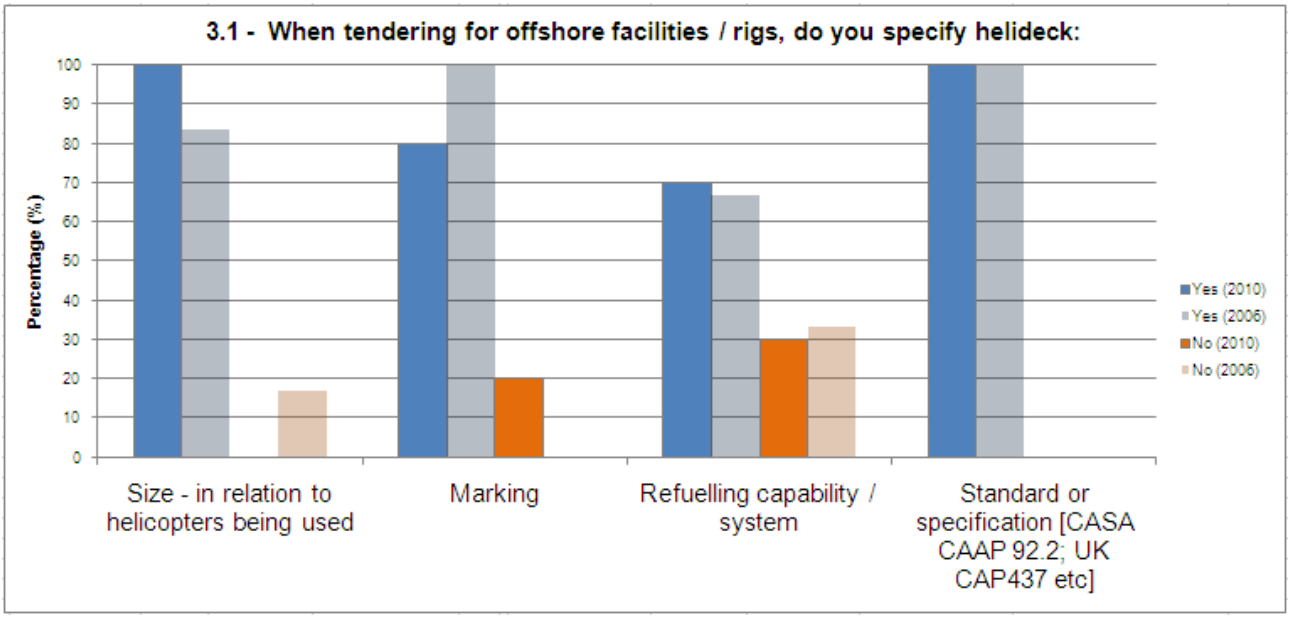

2.6 - Do you have an ongoing safety audit program for helicopter operations?
Percentage (%)
100
75
50
25
0
Yes (2010)
Yes (2006)
Responses
Yes (2010)
Yes (2006)
No (2010)
No (2006)

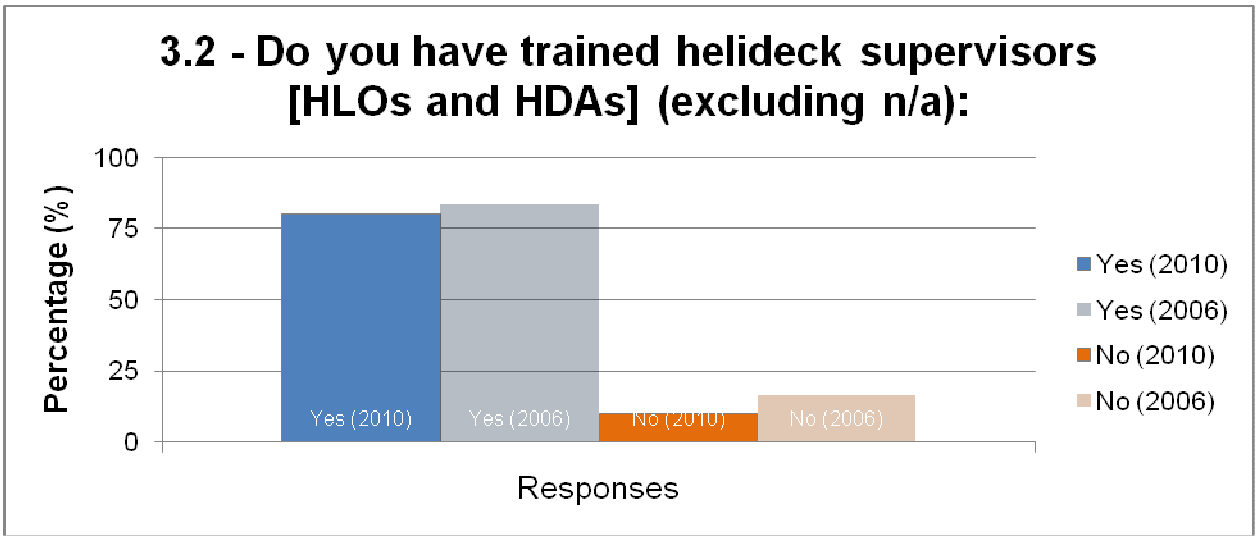

2.7 - Do you have a policy or planning for (excluding n/a):
Percentage (%)
100
90
80
70
60
50
40
30
20
10
0
Helicopter maximum age
Helicopter replacement and future helicopter types
Use of immersion suits in cold environments
Yes (2010)
Yes (2006)
No (2010)
No (2006)

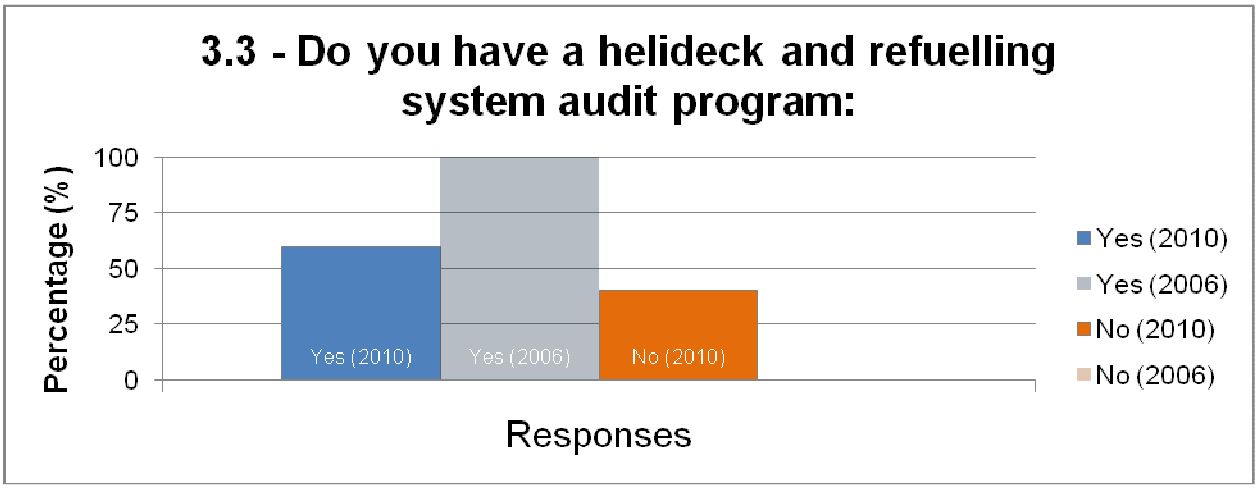

2.8a - Do you have 24 hour helicopter medical evacuation cover:
Percentage (%)
100
75
50
25
0
Yes (2010)
Yes (2006)
No (2010)
Responses
Yes (2010)
Yes (2006)
No (2010)
No (2006)

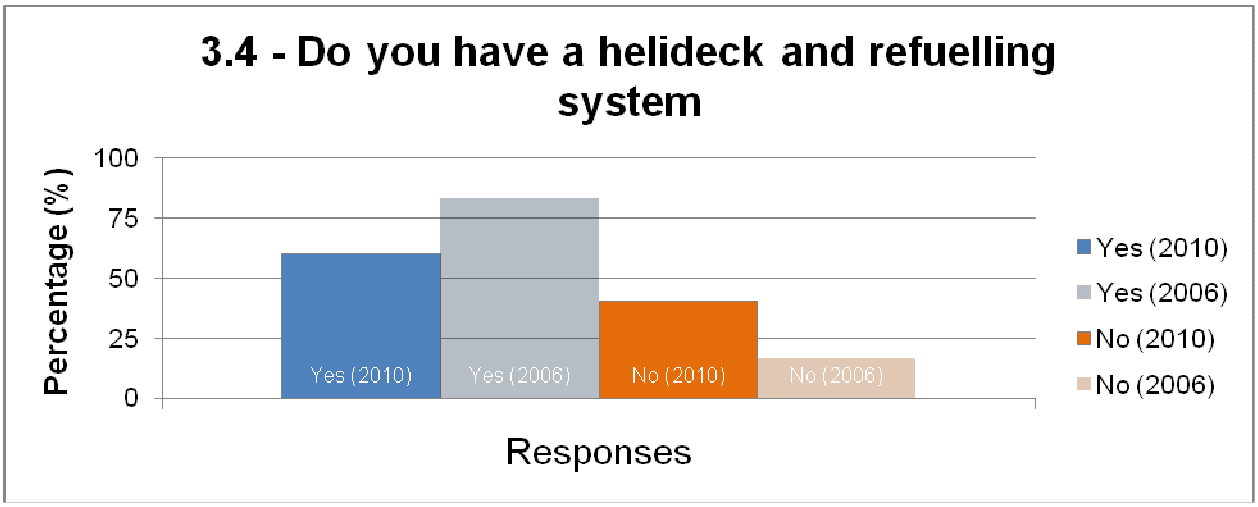

2.8b - of the companies that answered YES to 2.8a (excluding n/a), do you:
Percentage (%)
100
90
80
70
60
50
40
30
20
10
0
Use publicly provided Emergency Medical or Police Helicopters
Use dedicated contracted helicopters
Use shared contracted helicopters
Have flight crew standing by on defined call-out
Yes (2010)
Yes (2006)
No (2010)
No (2006)


2.9 - Do you liaise or exercise with AusSAR or other Government agencies for emergency response (excluding n/a):
Percentage (%)
100
75
50
25
0
Yes (2010)
Yes (2006)
No (2010)
No (2006)
Responses


3.1 - When tendering for offshore facilities / rigs, do you specify helideck:
Percentage (%)
Size - in relation to helicopters being used
Marking
Refuelling capability / system
Standard or specification [CASA CAAP 92.2; UK CAP437 etc]
Yes (2010)
Yes (2006)
No (2010)
No (2006)


3.2 - Do you have trained helideck supervisors [HLOs and HDAs] (excluding n/a):
Percentage (%)
100
75
50
25
0
Yes (2010)
Yes (2006)
No (2010)
No (2006)
Responses


3.3 - Do you have a helideck and refuelling system audit program:
Percentage (%)
100
75
50
25
0
Yes (2010)
Yes (2006)
No (2010)
Responses
Yes (2010)
Yes (2006)
No (2010)
No (2006)


3.4 - Do you have a helideck and refuelling system
Percentage (%)
100
75
50
25
0
Yes (2010)
Yes (2006)
No (2010)
No (2006)
Responses
Yes (2010)
Yes (2006)
No (2010)
No (2006)

8.7 ABBREVIATIONS USED IN THIS REPORT

AAIB	Air Accidents Investigation Board
ANO	Air Navigation Order
APPEA	Australian Petroleum Production & Exploration Association
CAA	Civil Aviation Authority
CAAP	Civil Aviation Advisory Publication
CAO	Civil Aviation Order
CAP	Civil Aviation Publication
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation
CRM	Crew Resource Management
ELT	Emergency Locator Transmitter
FDM	Flight Data Management
FDR	Flight Data Recorder
HDA	Helideck Assistant
HLO	Helideck Landing Officer
HOMP	Helicopter Operations Monitoring Programme
JAR	Joint Aviation Requirement
kg	Kilogramme
LCRPT	Low Capacity Regular Public Transport
MTOW	Maximum Take Off Weight
n/a	Not Applicable
NOPSA	National Offshore Petroleum Safety Authority
NWS	North West Shelf
OGP	International Association of Oil & Gas Producers
OPS	Operations
PLB	Personal Locator Beacon
PTS	Passenger Transport Service
RPT	Regular Public Transport
SAR	Search & Rescue
SMS	Safety Management System
UK	United Kingdom

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