



House of Commons
Public Accounts Committee

**Ministry of Defence:
Chinook Mk 3**

Eighth Report of Session 2008–09

*Report, together with formal minutes, oral and
written evidence*

*Ordered by the House of Commons
to be printed 9 February 2009*

HC 247
[Incorporating HC 747–i, Session 2007–08]
Published on 5 March 2009
by authority of the House of Commons
London: The Stationery Office Limited
£0.00

The Public Accounts Committee

The Committee of Public Accounts is appointed by the House of Commons to examine “the accounts showing the appropriation of the sums granted by Parliament to meet the public expenditure, and of such other accounts laid before Parliament as the committee may think fit” (Standing Order No 148).

Current membership

Mr Edward Leigh MP (*Conservative, Gainsborough*) (Chairman)
Mr Richard Bacon MP (*Conservative, South Norfolk*)
Angela Browning MP (*Conservative, Tiverton and Honiton*)
Mr Paul Burstow MP (*Liberal Democrat, Sutton and Cheam*)
Mr Douglas Carswell MP (*Conservative, Harwich*)
Rt Hon David Curry MP (*Conservative, Skipton and Ripon*)
Mr Ian Davidson MP (*Labour, Glasgow South West*)
Angela Eagle MP (*Labour, Wallasey*)
Nigel Griffiths MP (*Labour, Edinburgh South*)
Rt Hon Keith Hill MP (*Labour, Streatham*)
Mr Austin Mitchell MP (*Labour, Great Grimsby*)
Dr John Pugh MP (*Liberal Democrat, Southport*)
Geraldine Smith MP (*Labour, Morecombe and Lunesdale*)
Rt Hon Don Touhig MP (*Labour, Islwyn*)
Rt Hon Alan Williams MP (*Labour, Swansea West*)
Phil Wilson MP (*Labour, Sedgefield*)

The following member was also a member of the committee during the parliament.

Mr Philip Dunne MP (*Conservative, Ludlow*)

Powers

Powers of the Committee of Public Accounts are set out in House of Commons Standing Orders, principally in SO No 148. These are available on the Internet via www.parliament.uk.

Publication

The Reports and evidence of the Committee are published by The Stationery Office by Order of the House. All publications of the Committee (including press notices) are on the Internet at <http://www.parliament.uk/pac>. A list of Reports of the Committee in the present Session is at the back of this volume.

Committee staff

The current staff of the Committee is Mark Etherton (Clerk), Lorna Horton (Senior Committee Assistant), Pam Morris (Committee Assistant), Jane Lauder (Committee Assistant) and Alex Paterson (Media Officer).

Contacts

All correspondence should be addressed to the Clerk, Committee of Public Accounts, House of Commons, 7 Millbank, London SW1P 3JA. The telephone number for general enquiries is 020 7219 5708; the Committee’s email address is pubaccom@parliament.uk.

Contents

Report	<i>Page</i>
Summary	3
Conclusions and recommendations	5
1 The Original Procurement of Chinook Mk3 helicopters	7
2 The Department's decision making	9
3 Operational issues	11
 Witnesses	 14
List of written evidence	14
List of Reports from the Committee of Public Accounts 2008–09	15

Summary

In 1995, the Ministry of Defence (the Department) ordered 14 Chinook Mk2a helicopters. Six of these were retained as Mk2a and have flown satisfactorily ever since they were delivered. The other eight were modified to an Mk3 standard in order to meet a requirement for Special Forces. We examined the procurement of these eight helicopters in our report on Battlefield Helicopters and considered it to be one of the worst examples of equipment procurement that we had ever seen.¹

The Department has a history of long delays and cost increases within its procurement projects. Even by these standards, the Chinook Mk3 project has been a catalogue of errors from the start. The original contract was ill defined, preventing easy access to software source code that was key to enabling certification for airworthiness. Further operational requirements and difficult commercial negotiations led to a five year period of protracted negotiation and slow decision making under a project known as Fix to Field.

The absence of these helicopters has meant that British troops in Afghanistan have had to make do with fewer helicopters, make an increased number of dangerous journeys by road and, due to the specialist nature of the Mk3, rely on heavily modified Mk2 helicopters for use on high risk special operations. The modification of the Mk2 Chinook cockpit to enable their use in low light conditions was a far from perfect solution and compounded safety risks. These delays have potentially put the lives of British service personnel at greater risk.

In 2007, under mounting pressure to provide additional helicopter lift to Afghanistan, the Department scrapped the Fix to Field project in favour of a new project called Reversion, designed to accelerate the helicopters' entry into operational service. In assessing the Reversion project, however, the Department failed to consult with Boeing, the manufacturer of the helicopters, with regard to the potential costs or timeframes, and the estimated cost of the project subsequently grew by 70%.

The cost of the eight Chinook Mk3 helicopters once they enter service will be in excess of £422 million, or £52.5 million each. Alternatives that may have been available at the time the original order was placed may have been cheaper than the final costs of these Chinooks.

On the basis of a Report from the Comptroller and Auditor General,² we took evidence from the Ministry of Defence on the original procurement difficulties, the Department's decision-making processes and the impact of the procurement on operations.

1 Committee of Public Accounts, Eighth Report of Session 2004–05: *Ministry of Defence: Battlefield Helicopters*, HC 386

2 C&AG's Report, *Ministry of Defence: Chinook Mk3 Helicopters*, HC (2007–08) 512

Conclusions and recommendations

1. **There have been serious shortcomings in the Department's decision-making on the Chinook Mk3 project which have had significant consequences for the timely delivery of the helicopters to troops on the front-line.** The Department took nearly five years to decide on the Fix to Field project. British troops in Afghanistan would have had the additional helicopter capability available to them today if procurement decisions had been made more quickly.
2. **The Department fundamentally changed its approach to delivering the helicopters in a matter of days, without an appropriate level of analysis and without going through its established approvals procedures.** The Department was so confident that it understood the risks, costs and timescale issues associated with the Reversion project that it did not consult Boeing, the manufacturer of the Chinook helicopters. This confidence was misplaced and the cost of the project subsequently increased by 70%. Its post hoc justification that the Reversion project subsequently passed its regular approvals process is flawed as, once the decision had been made, it would have compounded the operational shortfalls and introduced more delays to have reversed it.
3. **The problems with the Mk3 procurement stemmed from the Department's failure to specify in the contract that it required access to the software source code in order to assess the safety risks and establish whether the helicopters would meet UK airworthiness standards.** Given that software is key to the operation of most modern defence equipment, this is irresponsible. The Department should specify access to software as a clear requirement within any contract, especially where access to proprietary software is needed to provide airworthiness certification. The Department should also review its airworthiness approvals process to take into account the safety records of other nations in using similar software and equipment.
4. **In 2003, the Department introduced the Night Enhancement Package as a short-term, urgent operational fix. It will not be replaced until 2009 at the earliest, and the Joint Helicopter Command still assess it as a key safety risk.** The Department has to make difficult judgements to balance the safety risk of using capabilities like the Night Enhancement Package against the operational downside of not having it at all. However, the Department should examine whether its acceptance of the risks associated with short-term fixes like the Night Enhancement Package is consistent with the priority accorded to identifying funding for long-term solutions, the duty of care it has to personnel and the principles underpinning its approach to airworthiness.
5. **Scarce Chinook helicopters are being used for basic pilot training because the Department has failed to modify flight simulators to reflect the capabilities of helicopters currently flying in Iraq and Afghanistan.** To make better use of its Chinook helicopter fleet, the Department should routinely plan for the simulators to be incrementally upgraded to match, as far as possible, the current capability and equipment specifications of the operational Chinook helicopter fleet.

6. **The scale of the shortcomings on the Chinook Mk3 is not representative of all defence acquisitions, but does highlight some specific areas where the Department needs to revise its decision-making processes.** Given rapidly changing operational needs, the Department should:
- have agile decision-making processes (but this is not an excuse to ignore appropriate governance);
 - work with HM Treasury to establish minimum analytical and data requirements to underpin significant investment decisions;
 - agree with HM Treasury a formal mechanism for waiving these standards on the very rare occasions where operational or other imperatives mean they cannot be achieved;
 - analyse what it is doing differently on the Reversion project and reflect these lessons in the evolution of its existing acquisition processes, and
 - routinely draw on all available sources of knowledge, including industry partners in making investment decisions.
7. **The Department admitted that, particularly when buying existing equipment ‘off-the-shelf’, it tends to specify too many modifications, when what is needed is equipment that is safe, effective and can be made available for operations quickly.** To better inform future decisions on whether to specify modifications to off-the-shelf equipments, the Department should analyse all such recent acquisitions to determine how often technical problems have arisen or costs increased, and whether these outweigh the expected and/or delivered operational benefits.
8. **The Department, working closely with Boeing, has achieved 20% increases in Chinook helicopter flying hours by changing the way the helicopters are maintained.** This approach is being used with some success elsewhere in the Department and illustrates the scope to get better value from existing defence assets. The Department should establish knowledge sharing groups, involving those maintaining other equipment fleets and key industry partners, to make sure that successes in one area are shared and applied consistently. To foster this spirit of collaboration, the Department should monitor the rate of year-on-year improvement in helicopter availability to help quantify the effects of innovations as they are introduced.

1 The Original Procurement of Chinook Mk3 helicopters

1. In 1995, the Ministry of Defence (the Department) decided that, in order to meet the long standing requirement for dedicated helicopters to support special operations, an original order for 14 Chinook Mk2a helicopters from Boeing would be changed. Six were retained as Mk2a and have flown satisfactorily ever since they were delivered, but it was decided that the other eight would be modified to become Chinook Mk3 helicopters. The Chinook Mk3 helicopters feature unique cockpit avionics which, because of the Department's budgetary priorities elsewhere, ended up being a hybrid of analogue and digital systems, rather than a pure digital arrangement as used in the United States special operations Chinook (MH47-E) and by the Royal Netherlands Air Force.³

2. In 2005, the Department acknowledged that the Chinook Mk3 project had been badly handled and was one of its worst procurement experiences.⁴ The eight Chinook Mk3 helicopters initially cost some £259 million and the Department took delivery of them from Boeing in December 2001. The hybrid digital and analogue cockpit avionics could not be shown to meet United Kingdom airworthiness standards. As a result, the helicopters could only be granted a limited release to fly, and are restricted to flying on cloudless days above 500 feet where the pilot can navigate via landmarks. This makes them completely unsuitable for use on operations.⁵

3. One of the key reasons for not granting a full release to fly was that the software codes that maintained the instrument displays in the Mk3 cockpit could not be proven to be safe. The Department acknowledged that analysis of the code, which would help anticipate how the software, and hence the helicopter, would behave in all flight conditions, may have enabled it to certify them as safe. Boeing, in protecting their intellectual property rights, denied the Department access to the software source code. The Department accepted that the original contract, which did not mandate access to the codes, was not sufficient for the purpose of procuring helicopters that could be proven to be safe.⁶

4. Following the delivery of the aircraft to the United Kingdom in 2001, the Department undertook a protracted series of project reviews and analyses before deciding in 2004 on the Fix to Field solution.⁷ The Department acknowledged that these extended discussions between themselves and Boeing were informed by a desire not to repeat the mistakes of their predecessors and to fully de-risk the project.⁸

5. The procurement of equipment from other nations, especially the United States of America, is becoming more common, but has been problematic. For example, the Joint

3 C&AG's Report, para 1.2

4 Committee of Public Accounts, Eighth Report of Session 2004–05: *Ministry of Defence: Battlefield Helicopters*, HC 386

5 C&AG's Report, para 1.3

6 Q 16

7 C&AG's Report, para 2.4

8 Q 74

Strike Fighter, Apache Helicopters, and other equipment and weapons have suffered from time and cost delays in procurement due to the Department requiring modifications to the original specification. The Chinook Mk3 is another clear example of such changes. The United States Army Special Forces operate the Chinook “MH47E” and “G” model helicopters, on which the British Chinook Mk3 is based. If the Department had not been so willing to compromise on the specification of the cockpit, it might have been able to prove airworthiness in the same way as it has for other aircraft. For example, by using the safety cases put together by the United States for the C17 aircraft, the Department has been able to satisfy the British airworthiness authorities and use the aircraft operationally, without having to resort to analysis of the flight software. The Department acknowledged that it should not over-specify changes to equipment or platforms unless it had, for example, to fit United Kingdom specific communications equipment.⁹

6. British troops deployed to operational theatres do their job to the best of their abilities, often with just enough equipment and, on occasion, in the absence of key battle-winning equipment. It has been widely reported, and is acknowledged by the Department, that with more resources, in particular helicopters, operational commanders could do more, both in battle and in support of reconstruction efforts. The Department noted that, as with every aspect of military capability, there is not an inexhaustible supply of equipment. On occasion, requests for helicopter lift capability from officers in theatres have had to be declined, in particular, for reconstruction tasks, but core military requirements had always been met.¹⁰

7. The Department estimated that the final cost of the eight Chinook Mk3 helicopters upon entering service will be in excess of £422 million, or £52.5 million each. The Department acknowledged that, including the costs of the original flawed procurement and the projects to enable the helicopters to enter service, it has ended up spending more on the eight helicopters than planned.¹¹ For the amount of money spent so far, it should have been able to purchase more than just eight helicopters.¹²

9 Q 26

10 Q 100

11 Q 53

12 Q 144

2 The Department's decision making

8. The Department's approach following the original procurement of the Chinook Mk3 helicopters was one of caution and a desire to prevent further mistakes. However, this resulted in protracted negotiations and decision-making over the Fix to Field project. The period from the delivery of the helicopters in 2001 to the final cancellation of the Fix to Field project in March 2007 was 63 months, which the Department accepted was too long.¹³ The Fix to Field project was supported by a robust business case and a review by the Office of Government Commerce, which concluded that it would succeed in delivering the required capability.¹⁴

9. The Department acknowledged that the decision to cancel the Fix to Field project was initially taken in haste.¹⁵ The numbers of troops deployed to Afghanistan had increased significantly, and as a consequence, the demand for helicopters to support operations increased. The Department said that they had been looking at a range of options, from the purchase of Danish Merlin helicopters to the upgrading of the Sea King helicopter with state-of-the-art rotor blades.¹⁶ However, the Department had not fully eliminated the shortfall in helicopters and felt strongly that it was necessary to correct this shortfall. The Reversion programme, which would convert the Chinook Mk3 to a Chinook Mk2 standard, would provide more helicopter capability earlier than the Fix to Field project. While this was far from the ideal solution, the Department felt it was the most appropriate choice given the operational circumstances.¹⁷

10. In August 2007, the then Chairman of the Investment Approvals Board, the senior approving authority for procurement decisions in the Department, expressed disappointment at the level of evidence provided to the board in assessing the Reversion project, in particular, with regard to the operational imperative. The Department acknowledged that, while there were deficiencies in the evidence supporting the Reversion project, they believed that they had made the correct decision at the time.¹⁸ The Department said that it was conceivable, but unlikely, that the Reversion project would not have been approved by the Investment Approvals Board, regardless of the level of evidence presented. This was because the operational requirement was so great.¹⁹

11. The Defence Industrial Strategy outlines how the Department manages its relationship with key defence suppliers. The key elements of this document are that the relationships should be managed in the spirit of partnership, joint decisions taken and, where possible, information should be freely available to both sides. Boeing, being the sole supplier of the Chinook helicopter, was the prime contractor for the Fix to Field project. The Department, however, failed to consult with them over the decision to cancel Fix to Field, or to confirm

13 Q 39

14 C&AG's Report, para 2.8

15 Q 40

16 Q 2

17 Q 38

18 Q 93

19 Q 135

the costs of the Reversion project. The Department acknowledged that the initial estimates of cost were flawed. The estimate used to make the decision to cancel Fix to Field was 70% lower than the final contract cost.²⁰

3 Operational issues

12. As a consequence of the failure to make the Chinook Mk3 airworthy, the Department introduced a bolt-on capability called the Night Enhancement Package. This arrangement enabled the use of the Chinook Mk2 helicopters in very low light conditions when supporting special operations. The Department acknowledged that, in order to fly with the Night Enhancement Package, the pilots, who come from 7 Squadron RAF, need to be better trained as it is harder to fly compared with standard Mk2 Chinooks. The Department confirmed that there had been two accidents where the Night Enhancement Package had a bearing on the incident.²¹ In approving the Night Enhancement Package, the Department sought assurances that a funded project would be developed to mitigate the air safety risks associated with it. With the cancellation of Fix to Field project, however, this was no longer the case.²²

13. Military equipment is becoming more and more reliant on computers to assist in both their use and control. Equipment is often supplied by overseas contractors, such as the Joint Strike Fighter from Lockheed Martin or, in this case, the Chinook helicopter from Boeing. The use of software to enable equipment to function poses difficult questions for the Department in certifying that the aircraft are airworthy and safe to fly. The industry invests large amounts of money in the development of software integral to the operation of equipment. On occasion, in order to protect this investment, contractors may wish to restrict access to the software code. The original procurement contract for the Chinook Mk3 helicopter failed to specify access to the software as a key requirement. As a result, access to the code was denied and it was not possible to prove the Chinook Mk3 was safe to fly.

14. Flight simulators and other artificial training environments have been used successfully for many years by the Royal Air Force to augment the actual flying training achieved using helicopters. The ability to train pilots in other ways enables helicopters to be available for other forms of training, for example, pre-deployment training with infantry and other units. The Department's current Chinook helicopter flight simulators do not provide a close enough match to the helicopters currently in use to allow pilots to train effectively.²³ This has resulted in an increase in the number of Chinook helicopters required for use in pilot flight training, at the expense of combined pre-deployment training.

15. Through the Defence Logistics Transformation Programme, the Department have changed the maintenance of many key types of equipment, including helicopters. Most notably within the fast jet environment, the Department has increased the flying hours achieved while at the same time reducing the cost of maintaining these expensive aircraft.²⁴ In the last six months, the Department has increased the Chinook helicopter flying rate in

21 Q 11

22 C&AG's Report, para 3.7

23 Q 110

24 C&AG's report, *Transforming Logistic Support for Fast Jets*, HC (2006–07) 825

Afghanistan by 20% and over all helicopters deployed, it has increased flying hours available to commanders by a third.²⁵

Formal Minutes

Monday 9 February 2009

Members present:

Mr Edward Leigh, in the Chair

Mr Richard Bacon
Angela Browning
Rt Hon David Curry
Mr Nigel Griffiths

Rt Hon Keith Hill
Mr Austin Mitchell
Rt Hon Alan Williams

Draft Report (*Ministry of Defence: Chinook Mk 3*), proposed by the Chairman, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 15 read and agreed to.

Summary read and agreed to.

Resolved, That the Report be the Eighth Report of the Committee to the House.

Ordered, That the Chairman make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till Wednesday 11 February at 3.30 pm]

Witnesses

Wednesday 18 June 2008	<i>Page</i>
Sir Bill Jeffrey KCB , Permanent Secretary for Defence, General Sir Kevin O'Donoghue KCB CBE , Chief of Defence Materiel and Lt Gen Andrew Figgures CBE , Deputy Chief of Defence Staff (Equipment Capability), Ministry of Defence	Ev 1

List of written evidence

Ministry of Defence	Ev 16
---------------------	--------------

List of Reports from the Committee of Public Accounts 2008–09

First Report	Defence Information Infrastructure	HC 100
Second Report	The National Programme for IT in the NHS: Progress since 2006	HC 153
Third Report	Skills for Life: Progress in Improving Adult Literacy and Numeracy	HC 154
Fourth Report	Widening participation in higher education	HC 226
Fifth Report	Programmes to reduce household energy consumption	HC 228
Sixth Report	The procurement of goods and services by HM Prison Service	HC 71
Seventh Report	Excess Votes 2007–08	HC 248
Eighth Report	Ministry of Defence: Chinook Mk3	HC 247

Oral evidence

Taken before the Committee of Public Accounts

on Wednesday 18 June 2008

Members present:

Mr Edward Leigh, in the Chair

Mr Richard Bacon
Mr Ian Davidson
Mr Philip Dunne
Nigel Griffiths

Keith Hill
Mr Austin Mitchell
Dr John Pugh
Phil Wilson

Mr Tim Burr CB, Comptroller and Auditor General, National Audit Office, gave evidence.

Mr Jim Rickleton, Assistant Auditor General and **Mr Tim Banfield**, Director, National Audit Office, were in attendance.

Mr Marius Gallaher, Alternate Treasury Officer of Accounts, HM Treasury, was in attendance.

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL

MINISTRY OF DEFENCE: CHINOOK MK3 HELICOPTERS (HC512)

Witnesses: **Sir Bill Jeffrey KCB**, Permanent Secretary for Defence, **General Sir Kevin O'Donoghue KCB CBE**, Chief of Defence Materiel and **Lt Gen Andrew Figgures CBE**, Deputy Chief of Defence Staff (Equipment Capability) Ministry of Defence, gave evidence.

Q1 Chairman: Good afternoon and welcome to the Committee of Public Accounts where today we are considering the Comptroller and Auditor General's Report on the purchase of eight Chinook Mk3 helicopters. We welcome back to our Committee Sir Bill Jeffrey, who is the Permanent Secretary of the Ministry of Defence, Lieutenant General Andrew Figgures, who is the Deputy Chief of Defence Staff (Equipment Capability) and General Sir Kevin O'Donoghue, Chief of Defence Materiel. Just a general question. What I cannot understand is why there is this fetish in the MoD of always trying to modify everything that we buy from the Americans, to gold-plate it. Why do we not just buy the American helicopter and be happy with it? We see these other problems with Bowman and now with the Joint Strike Fighters, problems appearing with that. Why not just buy the American helicopter? They have Special Forces as well.

Sir Bill Jeffrey: This may be a question that it would be sensible for me to ask Andrew Figgures to comment on, but my own view is that we tend to do it too much frankly. There are undoubtedly specific adjustments that are necessary for us to operate equipment but the earlier parts in particular of this story suggest a degree of over-specification for our own requirements which we are trying to move beyond as a general issue.

Lt Gen Andrew Figgures: Yes, there are lessons that we have learned and we have tempered our capability requirements with what can be supplied, but there are also issues of a balance between our perception of particular threats and the perception of the United States of particular threats and it cannot always be said that we have used our equipment in the same

environment, although we have used our equipment together in other environments. However, even in theatres we would take a different view between, say, electro-optic threats and radar threats. We must take account of the threats and we owe it to our people that we do that. There are also issues with respect to specialist equipment and you mentioned Bowman. Well, we have the Bowman radio and therefore we have to fit it to our platforms such that we can communicate. The United States do not have a Bowman radio. We are doing a tremendous amount of work and this last day I have been engaged with my opposite number, Hon John Grimes in terms of interoperability and ensuring that our trunk communications and our strategic communications and our tactical communications are inter-operable. It is a factor that we are conscious of and we are working towards achieving.

Q2 Chairman: Anyway the fact remains that because we were not satisfied with the American product, we have had these eight helicopters sitting on the ground when they are desperately needed. You took five years to try to develop this Fix to Field project, did you not? You finally took the decision, because of the doubling of the troops in Afghanistan, that you had to get these helicopters into operation so you just withdrew from that and cancelled it. You did this very quickly. We read this in paragraph 2.13, if you would like to look at that "The decision to cancel the Fix to Field project and revert the Chinook Mk3 helicopters was undertaken quickly". Normally, if you invest such a vast amount of money into a project, as

Ministry of Defence

accounting officer there would be all sorts of processes you would go through before you took this decision. Was it right to take the decision so quickly?

Sir Bill Jeffrey: What happened in the early part of 2007 was that we had, and ministers had for some time, been looking at ways of increasing support helicopter capability. In the early part of 2007, there was, as you will recall, a decision to increase quite significantly the numbers deployed to Afghanistan. We had been looking anyway at a range of other options, including the purchase of the Danish Merlins and the kitting out with state-of-the-art rotor blades on the Sea Kings. However, we felt very strongly that it was necessary somehow to generate more helicopter capability.

Q3 Chairman: Yes, I understand all that Sir Bill and a mistake was made in the first place, we all know that. If this had been the Second World War, you would immediately have got these helicopters into service somehow, would you not? You would have gone back to steam-driven Mk2 helicopters. You took five years to try to modify them and then, virtually overnight, you cancelled that modification. We still do not have these helicopters. It just shows an appalling weakness in your decision-making process. You made an original mistake; well that was bad enough but we all make mistakes. Then, instead of just immediately accepting the consequences of that, stripping out these avionics and reverting back to the Mk2, you spent five years trying to develop a new system and you have gone back effectively to the old Mk2. What are you playing at?

Sir Bill Jeffrey: May I try to answer your first question? I was perhaps being a bit long-winded as I was setting context. A decision was taken in March 2007 that the operational need for more helicopters of this kind was so pressing that the right thing to do was to revert in the way that we are now doing. That decision was made known in general terms in a public announcement by the then Chancellor in fact and the Secretary of State for Defence at the end of March. Within the department we were always clear that although a decision in principle of that kind had been taken, a properly argued business case needed to be put together and needed to be put to our Investment Approvals Board. I gave instructions to that effect; that is what happened. We brought an information note to our Investment Approvals Board at the end of June and the project was, on the basis of a fully argued business case, taken through initial gate on 23 July. So albeit that the decision was taken in haste, one thing I was very anxious we should do was to appraise the case properly and reach proper decisions, partly for audit reasons.

Q4 Chairman: Why did you take five years to develop this Fix to Field project and then after five years you realised that there was no way you were going to get these helicopters in use in time so all that work was a waste of effort?

Sir Bill Jeffrey: I do not want to sound flippant about this but it depends when you start counting. When your predecessor committee looked at this

issue towards the end of 2004, we were at that point settled on the Fix to Field approach. The issue really is the progress we succeeded in making between about then and about the latter part of 2006, during which there were quite intensive negotiations with Boeing about the basis on which the Fix to Field project could be done. One can argue I wish it had been pursued more quickly over that period. On the other hand, the history of the project was such that I am sure that everybody on both sides, industry and department, wanted to pin things down.

Q5 Chairman: It says here in paragraph 2.13, third bullet point “Boeing was not consulted before the initial decision was made about the potential cost”. Do you think that failure to consult with Boeing has been one of the factors that has led to your estimate subsequently increasing by 70%?

Sir Bill Jeffrey: It is true that at the point when the decision was taken to adopt the reversion programme there was not a discussion with Boeing. We felt that we knew enough about the likely timescales for delivering Fix to Field for that not to be necessary but as soon as the decision was taken in principle, there were quite detailed discussions with Boeing, in which they participated enthusiastically I may say, about how best to pursue the more limited reversion option which we are now pursuing.

Q6 Chairman: We have had all these helicopters sitting in on the ground for all these years because you have been very cautious about the airworthiness of the Mk3, but it seems to me you have been prepared to take risks with the Mk2 and you have modified it with this Night Enhancement Package which is not perfect, a bit clunky, there were skills, the pilots’ views, we know all that, but you were prepared to take those risks. Why that difference in attitude between the Mk2 and the Mk3? Can I put this to General O’Donoghue? It really reverts to my original question which I am still trying to grapple with in my mind. If this had been the Second World War, we would not have had all these things lying on the ground all these years; somebody would have solved it, would they not? They would have said “Right, this new bit of kit doesn’t work, we’re going to strip it out and get these helicopters out to theatre”. Why did nobody in the Ministry of Defence have the nous to do that?

General Sir Kevin O’Donoghue: The requirement for additional helicopters in theatre happened when it was decided to put more troops into theatre. Up until that point the numbers of platforms and the numbers of hours were what theatre were asking for. It was when additional troops were about to be deployed to theatre that the pressure came on to get more platforms and more hours out into theatre and hence the urgency.

Q7 Chairman: I do not understand that answer. You are saying that you were happy to have these helicopters lying in an air-controlled hangar all these years, were you?

General Sir Kevin O’Donoghue: No, but where there are priorities for expenditure—

Ministry of Defence

Q8 Chairman: If you were happy with that, why did you order them in the first place?

General Sir Kevin O'Donoghue: It is a long time ago. I would need to go back to the people.

Lt Gen Andrew Figgures: It comes back to the balance of risk. You will recall from the original report that we ordered some for use by the Special Forces, Mk3 the balance was the MK2as. I would emphasise again that when we deployed to Afghanistan it was apparent to me on the equipment capability side, in conjunction with my work with the Deputy Chief of Defence Staff (Operations and Commitments) that the demand would increase. I was asked what the minimum requirement was to service that helicopter demand and this was a question of trading performance against getting hours on the ground, if that is an understandable expression. Could we meet the Special Forces requirement? Yes, we could meet the Special Forces requirement; you have alluded to it. What we needed were helicopters to support the green Army and this was a means of getting them into service sooner than otherwise. We have this expression in the Army from our mission analysis, question four: has the situation changed? The situation had significantly changed from 2004 to 2006–07 and you did not need to be a great seer or prophet to anticipate that with the heavy usage of helicopters 2006–07 and 2008–09, you would need to reinforce the fleet. We had done a lot of work. The Report makes mention of a lack of analysis. We had done a tremendous amount of analysis on the requirement side, the operational capability side, as to how we would deal with that issue. So although this is rather baldly expressed as suddenly we got up one morning and changed our mind, far from it. There had been months of work on how we were going to deal with this. You also made the point, why had we not consulted Boeing. Well you have to come to a view internally as to how you are going to approach this issue before you ask Defence Equipment and Support to start to deal with the supplier. There is no point in constantly shaking the supplier's confidence when you are looking at options. In retrospect, we will end up with a very much greater capability; we will manage the risk.

Q9 Chairman: In retrospect you will end up with a helicopter you could have had eight years ago.

Lt Gen Andrew Figgures: I do not think we would have done, with respect Chairman.

Q10 Chairman: You are going to end up with a Mk2 helicopter.

Lt Gen Andrew Figgures: We are going to end up with a fleet of 48 helicopters to the same build standard which will enable us to service the SF requirement and indeed the green Army requirement and indeed to provide greater performance in a more inclement and hostile environment than they otherwise would have. So in every cloud there is a silver lining.

Q11 Chairman: I think it would be unwise to mention clouds, given that these helicopters cannot fly with clouds in the sky; it would be unwise to mention that. Have there been any accidents as a result of the Night Enhancement Package?

Sir Bill Jeffrey: No.

Lt Gen Andrew Figgures: There have been two incidents.

Q12 Chairman: I was informed that there was a crash and the inquiry said that the Night Enhancement was a factor in the loss of that Chinook.

Lt Gen Andrew Figgures: There have been two incidents but they did not lead to the write-off of the aircraft; you might say it was rather like bending the fender on the car when you parked it. That may be a trivial analogy but the fact of the matter was the aircraft were recovered; indeed one of them was able to fly away. Was that solely due to the Night Enhancement Package? No, it was not due solely to the Night Enhancement Package and, again, there is a level of emphasis on this. It is harder to fly, you have to be better trained as a pilot and indeed the pilots of 7 Squadron are better trained and they are on longer tours than the pilots of the other Chinook squadrons, so that is how the risk is managed. A simple analogy is that it is a bit like driving a manual transmission car in the London traffic as against an automatic transmission car. You have to think rather more and have to have a lot more practice when you fly the Night Enhancement Package in a low-light environment.

Chairman: Especially as we read in the picture figure 7 that the screen is in front of where you are trying to see.

Q13 Keith Hill: I really want to start at the beginning, way back in 1995. What I want to know first of all is why, if we needed helicopters that could fly further and carry more weight, did we not specify this in the original contract?

Sir Bill Jeffrey: There were, as has been acknowledged in the past, not least by my predecessor in front of your predecessors, very serious shortcomings in the 1995 contract. For one thing, it did not specify that the aircraft needed to be compatible with our UK defence safety and assurance standards. It was also short on the basic requirements that we needed to fulfil and none of us is here to argue that that earlier part of the story was other than one of our worst procurement experiences.

Q14 Keith Hill: Does that mean then that actually in 1995 we probably already anticipated that we needed these adaptations?

Sir Bill Jeffrey: The sequence of events—my colleagues will remind me if I get it wrong—was that in 1995 we initially set out to acquire 14 Mk2 aircraft, which were the less-developed version. There was then a decision in 1997 to upgrade eight of them to Mk3 level with the addition of critical avionics software in particular. What went wrong really was that, whereas what we were initially trying

Ministry of Defence

to acquire in 1995 was essentially a helicopter to a standard already in service with the RAF, the eight that we selected for this purpose we were in fact developing into something more bespoke and therefore something where the shortcomings in the contract began to matter more.

Q15 Keith Hill: I have to say, I had not picked up from the NAO Report that it only took two years after the original contract for the decision to be made that you needed to make eight of these helicopters into the ultimate Mk3s. Could I ask a question about the so-called source code for the software? I understand that to adapt the helicopter to become a Mk3 helicopter apparently we needed the source code for the software. What is the source code for the software?

Sir Bill Jeffrey: You can get a more technically informed answer from one of my colleagues.

Lt Gen Andrew Figgures: In order to drive the instrumentation which the pilot flies with, rather as your personal computer, there is a software programme. In order to ensure that it meets our airworthiness standards, you need to be able to follow your way through it such that you can anticipate how it will behave in all parts of the performance envelope. We did not have visibility of that because we did not ask for it in the contract and, as a consequence, the manner in which it was developed would have made it very difficult to re-engineer. So we could not say with confidence that it would be safe to fly. You could make the presumption that it was safe to fly but you would have to do that on an empirical basis and at some stage, you would eventually cross the envelope for which you had given that clearance.

Q16 Keith Hill: I want to ask the question about airworthiness in due course, but before that could I ask why we did not specify access to the source code in the original contract?

Lt Gen Andrew Figgures: I do not know the answer to that.

Sir Bill Jeffrey: My interpretation of that, and we are talking 13 years ago now, is that at the point when the original contract was entered into, we were acquiring 14 Mk2a aircraft which were broadly similar to what the RAF was already using. The mistake was made, and it was a mistake, at the point when it was decided a couple of years later to adapt eight of them for use on special operations. At that point, it should have been realised that the original contract was not sufficient for the purpose because it did not give us the access that we would have needed.

Q17 Keith Hill: Why did Boeing not make the source code available? Is that not an unfriendly act? We are allies after all.

Sir Bill Jeffrey: Companies obviously regard the intellectual property that lies in some of these sophisticated computer-driven systems as a very valuable commodity but, beyond that, I do not know the specific answer.

General Sir Kevin O'Donoghue: It is fair to say that we changed the specification for eight of the aircraft and we were going to put in a glass cockpit. Then, for budgetary reasons, we changed that to a partial glass cockpit and those aircraft bore no resemblance to the original ones that Boeing provided and I can understand why Boeing would be reluctant to offer up—

Q18 Keith Hill: Why?

General Sir Kevin O'Donoghue: Because the aircraft was not what they had originally specified; it was a change in design.

Q19 Keith Hill: But it would have been very helpful to the United Kingdom, an ally of the United States, if they had supplied the source code, would it not?

General Sir Kevin O'Donoghue: It might have been helpful and if one spoke to Boscombe Down and the airworthiness people, they would say that given enough time and given the source codes, it might have allowed them to certify them.

Q20 Keith Hill: The NAO points out in paragraph 1.6 that you had to embark on gaining access to the source code which was going to take two years, but there was no guarantee it would be comprehensible anyway.

General Sir Kevin O'Donoghue: Correct.

Q21 Keith Hill: Why did you embark on that process?

General Sir Kevin O'Donoghue: It was not that there was no guarantee they would be comprehensible. It says "... no guarantee that the code would be written in a way which might make it comprehensible for analysis purposes".

Q22 Keith Hill: What does that mean?

General Sir Kevin O'Donoghue: It means that probably the airworthiness certification authorities would not be able to use those source codes in the British way of certifying airworthiness.

Q23 Keith Hill: On the issue of airworthiness then, could we have flown the adapted Mk3 helicopters according to US operating limits?

General Sir Kevin O'Donoghue: No, because they were not the same as US aircraft. Elsewhere in the report it talks about the Commander of US Aviation saying "If those are your airworthiness standards and regulations, then you were right not to certify them". They are different standards.

Q24 Keith Hill: Because they are different you could not apply them according to American airworthiness standards but they were not up to our airworthiness standards either.

General Sir Kevin O'Donoghue: Indeed or we could not prove that they were up to our airworthiness standards.

Ministry of Defence

Q25 Keith Hill: Why could we not prove they were?
General Sir Kevin O'Donoghue: Because those source codes were not necessarily analysable to produce the certification for airworthiness.

Q26 Keith Hill: It all comes back to these source codes, does it not?

General Sir Kevin O'Donoghue: It comes back to something the Chairman said originally. We should not overspecify changes to platforms unless we have to and if we have to, to fit UK communications or whatever, we need to be very careful about the way we go about it.

Q27 Keith Hill: I am sure we all trust we learn lessons for the future.

General Sir Kevin O'Donoghue: Indeed.

Q28 Nigel Griffiths: May I just go to the start of the report? In 1995 these were ordered. When was that in 1995? When were they approved?

Sir Bill Jeffrey: I will try to find that information. If I cannot, we will supply it.

Q29 Nigel Griffiths: There were two Defence Secretaries in that year, if I am not mistaken and the modification took place when in 1997?

Sir Bill Jeffrey: The purchase of the original Mk2 aircraft was approved in March 1995 and the contract amendment with Boeing for the replacement partial digital cockpit was agreed in November 1997.

Q30 Nigel Griffiths: Table five on page 12 sets out the options in Afghanistan. Am I right in my interpretation of this, that there were problems with these hot and high conditions which required modifications to be undertaken?

Sir Bill Jeffrey: Yes, it is fair to say, my military colleagues will say this with even more feeling than I will, that Afghanistan does present particular challenges. It is hot and high and it is also, and this is relevant to the Night Enhancement Package, a country over large parts of which at night it is extraordinarily dark compared even with Iraq, for example.

Q31 Nigel Griffiths: I take it the conversion, the modern defensive aids suite, is counter-measures against being shot down and others.

Sir Bill Jeffrey: Yes, it is.

Q32 Nigel Griffiths: Why did the Merlins have to undergo that conversion?

Sir Bill Jeffrey: These are the Merlins that we acquired from the Danes. They were simply not equipped with the defensive aids suite that we would expect for use with our helicopters.

Q33 Nigel Griffiths: The purpose the Danes used them for was different. The altering of the maintenance arrangements has effectively increased the flying hours by 8, 9, 10%, something like that.

Sir Bill Jeffrey: This is an area in which we have achieved quite a bit in the last year or so. As the Secretary of State said in a statement on 19 May, in the last six months we have increased Chinook flying rates on operations by 20% and if you take all of our helicopters that we use in southern Afghanistan, the total amount of flying time has increased by over a third since March. This is really about getting more out of what we have already plus the adjustment of the Sea Kings so that they are more deployable in Afghanistan than they would have been before.

Q34 Nigel Griffiths: How frustrated are our military gentlemen at the problems that have been encountered over the course of this project?

General Sir Kevin O'Donoghue: Of course it is frustrating, but, setting aside, if I may, the procurement issue and the way that that was gone through, I believe that from the time we set out to start Fix to Field, from the time it was decided that actually the imperative in theatre was to get more platforms into theatre, it has gone well. I go back to the Chairman's comment about how long it took. Do bear in mind that, having gone through the procurement issue, people were very cautious of getting it wrong again, partly cautious because it was a complex issue to resolve, the engineering and technical issues were complex because it was a partial glass cockpit and because it was different and the safety issues. Both the project team and the company, Boeing, were very aware that they had to get it right this time. The Fix to Field assessment phase, the preparation phase stretching out was right and that was derisking the project. It was also right when the imperative came to get more platforms into theatre to change to the reversion programme.

Q35 Nigel Griffiths: Let me pick up your comment on the bubble. Why did we need a different bubble from the Americans?

General Sir Kevin O'Donoghue: A glass cockpit was put in the Mk3. The Americans are changing their aircraft to glass cockpits; instead of the old analogue cockpit with all the dials on it is a glass cockpit and there is a screen. It is just modernising.

Q36 Nigel Griffiths: You were trying to future-proof it a bit better.

General Sir Kevin O'Donoghue: Indeed.

Q37 Nigel Griffiths: For our operational requirements which the Americans did not, at that time, share.

General Sir Kevin O'Donoghue: No, they had some with glass cockpits and they are now progressively changing all theirs to glass cockpits, as we will do over time under this new programme.

Q38 Nigel Griffiths: Paragraph 2.13 stresses that the reversion of the Mk3s was undertaken quickly. Was it the right decision?

General Sir Kevin O'Donoghue: Absolutely the right decision.

Ministry of Defence

Sir Bill Jeffrey: I must say it was. If I may, in an effort to help the Committee and come back to the Chairman's original point about operating fleet of foot in warfare conditions, I take the force of that completely. We may not be moving as fast as he would wish or indeed any of us would wish, but as a matter of fact the things we have done in the last year or so and in particular the acquisition of the Danish Merlins and this decision to move as quickly as we could to revert the ex-Mk3s, if I can put it that way, they both deliver helicopter capability significantly quicker than the normal route would. The world demand for helicopters is such that one cannot just take them down off the shelf even if one wanted to, so both of these approaches may take a year or so to deliver but they will take a lot less than any other route would have taken.

Q39 Nigel Griffiths: How much have the changes in operational requirements and the greater intensity of the operational needs affected how you implemented the recommendations of this Committee from 2004? In other words, circumstances were obviously changing, how much did that affect your ability to carry out efficiently what the Committee and the NAO agreed was needed?

Sir Bill Jeffrey: I would say there are two different aspects to this. One is that we have followed up the recommendations of this Committee from 2004. In the earlier stages this project was one of a handful of projects that were defining experiences for the MoD. When I arrived in the latter part of 2005, it was clear that the failures in the earlier part of the Chinook Mk3 acquisition were part of a handful of issues that had really influenced developments prior to my arrival. We have followed up on recommendations, our processes are much more rigorous about prioritising requirements and tracking them and we are placing much greater emphasis on investing effort early on to reduce risks. Arguably that is what happened on Fix to Field, but we invested quite a bit of time in reducing the risk in what was quite a risky project. It is worth noting that although Fix to Field took longer than any of us would have wished to get to the stage it did in late 2006, very close to that time an Office of Government Commerce report, as the NAO Report quotes, and a United States Army red team both concluded that this was a high quality project which was on course. So we have learned lessons. Separate from that, I would say that you are undoubtedly right to say that the environment in which we are trying to generate this capability has changed greatly because we are learning in real time in the field what is needed and it is very hard sometimes to respond to the requirements.

Q40 Nigel Griffiths: What do you think a fair and balanced conclusion after studying this Report would be for this Committee?

Sir Bill Jeffrey: To the extent that you concentrate in some of your questions on the earlier part of the story, I think your predecessors gave my predecessor it between the eyes on that part of the story in 2004. I do not take a different view from the one that you

and he did. If you look from 2004 onwards, I hope you will feel that, although the early stages of the Fix to Field programme took longer to develop than they might have done, there were reasons for that and it was, as the OGC said, a well-managed project. I hope you will feel that the decision that we took in the early part of 2007, albeit one that was initially taken in haste, was properly taken and was the right one to take.

Q41 Mr Bacon: Sir Bill, the total cost of these Chinooks, by the time they had been through the entire process and had the reversion, is £422 million. Is that correct?

Sir Bill Jeffrey: Is this the total cost as taken from the Report?

Q42 Mr Bacon: Page 14 of the Report. I just want to be clear that we are talking about the same thing. That £422 million is for the eight Mk3s as developed, as then pushed through the reversion and so on. Is that correct?

Sir Bill Jeffrey: It is £389 million, as the Report says, for the Mk3s themselves plus £32.3 million for the installation of the Night Enhancement Package.

Q43 Mr Bacon: What did you say again? Just tell me the number again.

Sir Bill Jeffrey: I am quoting, as I thought you were, from figure 8 of the Report.

Q44 Mr Bacon: I am not actually looking at figure 8. Could you just repeat the figure you gave?

Sir Bill Jeffrey: Three hundred and eighty-nine point four one is the total expenditure on Mk3s.

Q45 Mr Bacon: How much was the Night Enhancement Package?

Sir Bill Jeffrey: Thirty two point three.

Q46 Mr Bacon: So that is where we get our £422 million from?

Sir Bill Jeffrey: Yes.

Q47 Mr Bacon: I was actually looking at the bullet point on page 6. That is for these eight helicopters, is that right?

Sir Bill Jeffrey: That is right.

Q48 Mr Bacon: So that works out at £52 million each. Is that right? I am just dividing £422 by eight.

Sir Bill Jeffrey: If you include the Night Enhancement Package, but they are in fact on different helicopters.

Q49 Mr Bacon: Let us forget the Night Enhancement Package; we will go back. You said it was £389 which, divided by eight, would be £48 million per helicopter.

Ministry of Defence

Sir Bill Jeffrey: Yes.

Q50 Mr Bacon: What would have been the price of an MH47e at the time this negotiation first started, in other words, the enhanced Special Forces version of the Chinook that the Americans were using and that we decided was too expensive for us?

Sir Bill Jeffrey: I do not have that figure in my head.

Q51 Mr Bacon: Is there anybody who does?

Lt Gen Andrew Figgures: The model that we would have been looking at is in a way academic; it would not have been available to us because the American Special Forces were going through that process of converting their Es to Gs and Ds to Fs.

Q52 Mr Bacon: The MH47e was the craft that the RAF would have liked to have had had it not been for budgetary constraints, was it not? This would have been the early to mid-1990s; 1992 to 1995. Was that not what they wanted?

Lt Gen Andrew Figgures: I cannot say because I was not there in 1995. Again, there would have been a question at the time as to whether that would have been available to them.

Q53 Mr Bacon: What you ended up doing was paying a lot more to save a bit of money. You ended up paying a lot more because you did not want to pay a bit more in the first place to buy a slightly more expensive helicopter and you ended up paying a lot more for something that was less useful.

Sir Bill Jeffrey: My recollection is that the version you allude to is not one that we would have been able to acquire from the Americans. What I would not dispute is that through this whole process we have ended up spending more on eight helicopters than we might have done.

Q54 Mr Bacon: This is from an Army website and they were discussing the price, the £259 million which we looked at in October 2004. It was £259 million for the eight; this still somehow weighs in at over £32 million each instead of the around £7 million from 1995 prices with today's exchange rate. It really does make you wonder how they do it: a cost-cutting measure makes the product four times as expensive on a per unit basis and means they are completely useless, thus needing even more money to be spent on them. That is roughly accurate I am afraid, is it not?

Sir Bill Jeffrey: It is undoubtedly true that if you take the whole sequence of events, including the flawed procurement over the 1990s of the Mk3s, we have ended up spending more than we might have done on eight helicopters of the kind that we will end up having.

Q55 Mr Bacon: In fact I found somewhere else on the same website actually a wonderful summary of the situation, it was basically someone saying, in the immortal words that I apply when I go to Tesco's and buy a can of baked beans, that you pay for what you get. If you had not tried to scrimp and save at the

outset and you had bought what the RAF wanted at the outset, you would have ended up saving a lot of money, would you not actually?

Sir Bill Jeffrey: That is possibly so. What I do not have any way of validating is what you say the RAF wanted at the time because none of us is in a position to know that.

Q56 Mr Bacon: There must be somebody who knows whether this is what the RAF wanted to start with. Let me just summarise for you. I have found a wonderful summary— at least I think it is and there are others that have contributed to this website since who agree—that the RAF wanted to purchase off-the-shelf MH47e helicopters as used by USAF SOCOM—I suppose that is the Special Operations Command—from the outset. The budgeters insisted the MK47e helicopters were a gold-plate solution above that needed by the UK. The IPT, that is the Integrated Project Team, fall for the Boeing offer of a cheaper hybrid analogue digital system based upon a contract with a loop so big you could drive an ocean-going liner through it. Boeing said that the helicopters that they delivered were compliant with what the website calls the “pants” IPT specification. The helicopters were delivered, one was damaged during the off-loading at the port, the realisation dawns that the HC3s, that is the Mk3s, are not fit for purpose and then there is a long period of legal wrangling. MoD said “The new helicopters do not work, we want our money back”. Boeing said “They work as you requested them to, sod off”. Finally MoD pretty much gives up and elects to convert the hybrid HC3s to the analogue HC2 standard, in other words back to the old Mk2s and of course, as we all know, in the process spent a great deal of money. Now what is actually fundamentally flawed or inaccurate about that summary, apart from the fact that a “pants” specification is probably not the way the MoD would describe it?

Sir Bill Jeffrey: It is very graphically expressed, but as you will have heard me say earlier, I am not questioning for a moment that the handling of the Mk3 project, in the period up to the point at which your predecessor Committee, with you as a member Mr Bacon, addressed it, was a badly handled project.

Q57 Mr Bacon: Is there anything largely inaccurate about that?

Lt Gen Andrew Figgures: I do not think there was an IPT in 1995.

Q58 Mr Bacon: You do not think there was an Integrated Project Team?

Lt Gen Andrew Figgures: No, not in 1995.

Q59 Mr Bacon: Was it just called something else? By the way, on the subject of IPTs, Group Captain Mark Sibley is the current project team leader, is he?

General Sir Kevin O'Donoghue: Correct.

Q60 Mr Bacon: Who was his predecessor or his effective predecessor?

Ministry of Defence

Lt Gen Andrew Figgures: The point the Permanent Secretary made, that we learned significant lessons which have changed the way in which we carry out our procurement as a result of this Chinook procurement, has resulted, amongst other things, in the fact that a strong customer who has money and a requirement has to trade between the two and the supplier, the Integrated Project Team—

Q61 Mr Bacon: What is the answer to my question?
Lt Gen Andrew Figgures: Of?

Q62 Mr Bacon: What is the answer to my last question?
Lt Gen Andrew Figgures: On?

Q63 Mr Bacon: I asked a question and you have answered it with something completely different. What is the answer to my question?
Sir Bill Jeffrey: What was your question?

Q64 Mr Bacon: Who was the predecessor as the head of the Integrated Project Team or its equivalent to the present one, Group Captain Sibley?
Sir Bill Jeffrey: I do not know the answer to that.
General Sir Kevin O'Donoghue: Do you mean the project team in the DLO or the project team in the DPA.

Q65 Mr Bacon: If there were two, then both because they did manage together, did they not?
General Sir Kevin O'Donoghue: They have now merged.

Q66 Mr Bacon: If there were two, then both of them.
General Sir Kevin O'Donoghue: Those are names we need to find for you.¹

Q67 Mr Mitchell: Mr Bacon has given a better example of what is to be said about this project by quoting from the website than I can possibly give. Our predecessor Committee said it was one of the worst examples of equipment procurement that it had seen. The financial figures are in the Comptroller and Auditor General's Report but is there any quantification or analysis of the operational consequences of this? How many injured troops are not transported to hospital because there are not the helicopters to do it? How many supplies do not get through or have to go by road because helicopters are not operational? What are the failures that can be attributed to the absence of these helicopters in Afghanistan?

Sir Bill Jeffrey: There is quantifiable effect in the sense that one knows how many elements of helicopter capability have not been available because these aircraft could not be used as was originally intended. If you are asking the question in terms of impact in operational theatres, what we have succeeded in doing throughout is to provide the helicopter hours that military commanders require. They could always have used more and part of the effort that I described earlier, to use ground support

more imaginatively, to generate more hours, to acquire Danish Merlins, indeed to do what this project is doing, has been designed to generate more helicopter hours but we have never failed to provide the hours that are operationally required.

Q68 Mr Mitchell: And that despite the fact there have been regular complaints that the helicopters are not available and that there are excessive breakdowns and the difficulty in operating them. These complaints have been coming from Afghanistan regularly.

Sir Bill Jeffrey: There have. One has to go back to the number of hours that joint command headquarters are commissioning, what is required on the ground, and that, in terms of hours supplied, has actually been met. That is not to say that things do not go wrong. Of course they do.

Q69 Mr Mitchell: May I go back to the initial mistake? I was not on the Committee at that time, but the Report is at pains to say, for some reason "... although Boeing met its contractual obligation". I do not know whether that is put in so Boeing will not sue us or anything, but Boeing met its contractual obligations, therefore the fault is in the order. Because the avionics software could not be shown to meet UK standards, the helicopters can fly but they are restricted to flying on cloudless days above 500 feet, presumably in a straight line up and down. Is anybody flying them? Have they been flown? Have these been flown even for fun?

Sir Bill Jeffrey: The problem, as we highlighted earlier, is that because of the shortcomings in the contract, the means to demonstrate to the UK safety authorities that these aircraft, as originally delivered, were safe to fly were not there, so they had to be grounded. They can be flown.

Q70 Mr Mitchell: They have mainly sat in the hangar.

Sir Bill Jeffrey: Yes, they have been for most of that period.

Q71 Mr Mitchell: In that case, the point still applies because Boeing met its contractual obligations. So the mistakes in the order, the avionics software, must be the MoD's.

Sir Bill Jeffrey: They are. I do not want to plead double jeopardy, but this Report is principally about the events since your Committee last looked at this and I would not, and nor would either of my colleagues, for a moment deny that the Mk3 project from 1995 onwards was very badly handled in exactly the way that you are implying.

Q72 Mr Mitchell: That was followed by a series of other cock-ups which we will look at in a minute. I wonder whether anybody was on the product team or whatever team does these orders throughout. Can you give us, perhaps in a letter to the Committee, an indication of who stayed with the project all this time to make all these cock-ups or are folk constantly moving on?

¹ Ev 16

Ministry of Defence

Sir Bill Jeffrey: Again this is an issue your predecessor Committee went into. We are talking essentially here about events that happened 10 years ago and we can certainly see what information we can provide for the Committee, but it is quite some time ago.²

Q73 Mr Mitchell: Yes, but has there been any continuity of personnel dealing with this order and this problem through that period?

Sir Bill Jeffrey: I am confident that there will have been nobody who has been with this throughout. One thing that we are trying to address within the department is the need sometimes to create greater continuity within these teams because there is benefit in continuity and not having too much disruption.

Q74 Mr Mitchell: It would be useful to have some indication of what continuity there was. Let us move on to the Fix to Field modification. The Report says, I do not know why, that it was an exemplary programme, it appears to tick all the boxes and yet it took 30 months to develop a programme of work; paragraph 2.6. Why did it take so long?

Sir Bill Jeffrey: The original plan was to complete the preparation phase in eight months. Our view is that that was over-optimistic. The reason I believe is the one given by either or both of my colleagues earlier, which is that, starting from where we were in late 2004, developing a sophisticated Fix to Field solution that would meet UK safety requirements was not straightforward technically or commercially. The earlier stages of this have been a very bad experience for all the reasons the Committee is going into. I suspect that the discussions between our people and Boeing were informed by a natural caution not to repeat the mistakes of their predecessors. It took longer than I would have wished, certainly. On the other hand, in the OGC's estimation, it was a well-managed project that was heading in the right direction.

Q75 Mr Mitchell: It was not an argument over money, was it?

Sir Bill Jeffrey: It was, in part, an argument over money because in March 2006, Boeing proposed to us a price which was very significantly higher than we could afford, £105 million higher, and quite a period was spent negotiating that down to something that was affordable.

Q76 Mr Mitchell: Then, before that programme had been implemented, exemplary as it was according to the Report, comes a panic. You do not have enough helicopters in Afghanistan. There was a panic, was there not? You suddenly found you had a need for more helicopters and there were those eight sitting there.

Sir Bill Jeffrey: I would not use the word "panic", as you would not expect me to, but my own recollection, because I was on the scene over the latter part of 2006 and early 2007, is that there was very consistent ministerial, senior military, senior

official interest in finding ways by which we could generate more helicopter capability quickly because we knew that we were in prospect of scaling up in Afghanistan in the way that we did.

Q77 Mr Mitchell: So you junk Fix to Field at that point and revert to reversion, as it were, and yet that will not be implemented until 2009–10. Why does that take so long?

Sir Bill Jeffrey: As I said earlier, these may be timelines that are hard for the Committee to understand, but it is a great deal quicker than acquiring entirely new capability would be. In other guises, I argue internally, the Committee argues for us being realistic about these things and not wishing that things will develop more quickly than they will. We think that this is a realistic timeframe; we think that we can begin to deliver these into operational use during the course of next year.

Q78 Mr Mitchell: Keith Hill asked about the source code. Did we not get the source code for commercial reasons or for US defence reasons?

Sir Bill Jeffrey: I believe that it was principally for commercial reasons because it was not in the original contract.

General Sir Kevin O'Donoghue: Yes.

Q79 Mr Mitchell: When you were changing to the reversion operation, Boeing was not consulted. Why was that? Had relations broken down? Why were they just not consulted?

Sir Bill Jeffrey: Relations had not broken down; it was simply that at the point when the decision was taken to go for reversion we felt we knew enough about the Fix to Field programme's timelines. As soon as that decision had been taken in principle, we engaged directly and intensively with Boeing and what I am certainly being told now is that the relationship with Boeing under the reversion project is extraordinarily good.

General Sir Kevin O'Donoghue: The reversion project will deliver to time and to cost and the relationships with Boeing are extremely good.

Q80 Dr Pugh: Often on these occasions we are maybe hyper critical and grubbing around for a few points to make again, but today it is really rather like shooting fish in a barrel because this is possibly one of the worst procurement decisions made by the military. May I start off on a comparatively easy question which puzzled me a little bit? In section eight, page five, it talks about the cost of reversion, a recent decision, and it uses the interesting expression I have not seen before about an estimate being "immature". I have heard of estimates being wrong or inaccurate or improbable or whatever but what is an "immature" estimate? Maybe the NAO can help me here.

Mr Burr: I am afraid it is a Ministry of Defence expression.

² Ev 16

Ministry of Defence

Q81 Dr Pugh: Is it a synonym for inaccurate?

Mr Burr: No. It simply means it is not fully developed, as I understand it. It does not take account of all the factors that will be relevant.

Q82 Dr Pugh: With all due respect, would you not expect estimates to be fully developed and reasonably accurate?

Mr Burr: Yes; absolutely.

Q83 Dr Pugh: It was 70% out.

Sir Bill Jeffrey: In the context that we were describing earlier, the decision taken in March 2007 was taken pretty quickly. We were advising ministers on what the options were to generate more helicopter capability. This was one of them. The question was asked “How much would a reversion project cost?” and a very quick, as it turned out imperfect, estimate was made.

Q84 Dr Pugh: You said “Give or take 70% this is our estimate”.

Sir Bill Jeffrey: Within a month or so, and we were talking about it earlier. When the case was brought to our Investment Approvals Board, we had a much more realistic estimate that was actually above what we ended up with later in the year.

Q85 Dr Pugh: The core of the whole thing is obviously the avionics and the difficulties you have had with that and I just want to touch on points made by Mr Mitchell and Mr Hill about the source code. We know this is, in a sense, history but is it standard practice, in military procurement like this, to specify that you possess the source code?

Sir Bill Jeffrey: It varies. Sometimes it is part of the contract; sometimes it is possible—the C17s are a good example as the Report brings out—because we are essentially using aircraft that have been fully cleared so there is no need to have the source code.

Q86 Dr Pugh: Could I put it another way? Is it likely that the Americans possess helicopters for which the avionics source code is unknown to them?

Sir Bill Jeffrey: I would guess not.

Q87 Dr Pugh: No. Is it likely that the Russians would?

Sir Bill Jeffrey: I do not know.

Q88 Dr Pugh: Or the Chinese or the French, in fact anybody really?

Lt Gen Andrew Figgures: I think it is likely that you could possess an airframe which you bought for a particular purpose and you would not, unless you had a particular need to, have visibility of the source code. After all, why would you, if you fly it within the same envelope as the nation from which you bought it? The point comes out in the Report that these were to be modified and as a consequence we had to have access to this.

Q89 Dr Pugh: We have acknowledged it is good military practice to have possession of the source code, particularly with things that are quite technical.

Lt Gen Andrew Figgures: Or the source code to be constructed to a military standard such that you could understand it and modify it to reflect the increased capability that you might want to put into the platform.

Q90 Dr Pugh: Could you just enlighten me on one other technical issue? You talk about the digital and the analogue cockpit and I understand that analogue communications and so on are capable of being scanned, disrupted and so on. Is a digital cockpit essentially safer from the military point of view?

Lt Gen Andrew Figgures: Really it is how you design it. For instance, you could get military cockpits which are digital where, say, for instance you wanted to get to the altimeter or you wanted to get the inclination of the aircraft and you would have to scroll through the various displays. Depending on how you dealt with that man/machine interface, some would be safer than others. So for a high performance aircraft that you were trying to operate in dark, day, night, all weather, you would require perhaps a more sophisticated interface and therefore a more complex source code to drive the displays than you might for a purely passenger aircraft.

Q91 Dr Pugh: In a modern age is the digital cockpit a safer machine at the end of the day?

Lt Gen Andrew Figgures: Subject to it being built to the appropriate standards.

Q92 Dr Pugh: As long as it works; of course. I know that a lot of the blame has been laid off historically but I was interested in the abandonment of the Fix to Field. I looked at the NAO comments there and I picked up a couple of things on that particular page of the NAO Report, page 13, where they say the “... decision ... was not based on the level of detailed analysis we would usually expect”. They say “Boeing was not consulted before the initial decision was made about the potential cost of the project”, we are talking 2007 now, we are not talking ancient history and they say “... the Chairman of the IAB” that is the Investment Approval Board, expressed “... disappointment that the paper submitted had not included a more robust explanation of the operational imperative”, which you would expect it to I suppose. Those are flaws dating to 2007 in a sense and you will appreciate the point that it does not necessarily give us confidence that things have improved massively.

Sir Bill Jeffrey: On the point about consulting Boeing, I have dealt with that in response to two questions already. On the speed with which the decision was taken, it is true that against the urgent background that I described, the decision in principle was taken and made known publicly but we then very quickly took this project through our

Ministry of Defence

normal processes and examined it very carefully. In other contexts we would be being criticised for not moving quickly enough.

Q93 Dr Pugh: Why was there not a more robust explanation of your proposals?

Sir Bill Jeffrey: I have looked into this and I have gone back to the original papers because I was concerned about this. Although the note that included this comment from the then chairman of the IAB was dated 2 August, after the initial gate business case had been approved, in fact it was a comment on an earlier information note which was submitted to the committee in late June, which simply gave the committee a heads-up on where things stood. The initial gate business case included much more detail and was approved by the committee. All I can say is that everybody who was there at the time, including the two gentlemen on either side of me, were in no doubt about the urgency of this operational requirement and that is what was driving us and although the particular information that the then chairman of the IAB was commenting on may have been deficient, in substance we believe we were doing the right thing.

Q94 Dr Pugh: May I share with you an email that I got from a constituent of mine about this after the NAO Report was published? They wrote "I cannot begin to tell you how disgusted my husband and I are regarding the Chinook helicopter fiasco" and then they said, amongst other things "In denying the troops a pay award on the ground of cost, getting them into a war for which they do not have the equipment or support they so justly deserve and at the same time spending half a million pounds on an air-conditioned hangar to store a quarter of a billion pounds worth of vital equipment for the last seven years, somebody must be held to account". Is that not a pretty fair summary of how things stand?

Sir Bill Jeffrey: I understand why anybody will react in the way that you have just described in that email. I would repeat what I said about the recent history in particular. I certainly feel myself being held to account by the Committee.

Q95 Dr Pugh: How many people have been sacked over this whole fiasco?

Sir Bill Jeffrey: I do not think anybody has been sacked.

Q96 Dr Pugh: Nobody has been sacked. How many people have resigned?

General Sir Kevin O'Donoghue: I do not think anybody has.

Q97 Dr Pugh: Nobody has resigned. Well, you can understand to an extent their feeling, can you not? Even though in answer to Mr Mitchell's question you said that you do not believe life has been lost through this, it is certainly the case, I think you would agree, that things could have gone an awful lot better had this been delivered on time in the form originally envisaged.

Sir Bill Jeffrey: I am agreeing with that in relation to the earlier course of events because there is really no alternative to doing so. However, I would still ask the Committee to consider the argument that in the two key years when we were trying to deliver the Fix to Field project, first of all, as the Report says, it was a well-conceived, well-managed project.

Q98 Dr Pugh: Sorry? It was a well-conceived, well-managed project?

Sir Bill Jeffrey: That is what the OGC said, that is what the NAO Report said actually. Secondly, although over that two-year period we could and arguably should have made more progress; there were reasons for that in the technical complexity of it, in the fact that the starting point in 2004 was by no means ideal.

Q99 Chairman: Fix to Field took 30 months for the department and Boeing to agree an affordable programme of work. 30 months.

Sir Bill Jeffrey: It is certainly longer than I would wish Chairman. I do not want to overstate it, but starting from the deeply unsatisfactory position that we were starting with in late 2004, it was technically quite a complicated discussion to have with Boeing and it was not helped by the fact that there was quite a difficult negotiation over price.

Q100 Mr Dunne: Sir Bill, to your knowledge have officers in theatre requested helicopter lift capacity which has had to be declined? This may be a question better addressed to the generals, but have officers in theatre requested helicopter lift capacity which has had to be declined?

Lt Gen Andrew Figgures: There have been, inevitably, requests for both airframes and hours but, as with every aspect of military capability, there is not an inexhaustible supply. So we have put in place the wherewithal to increase the helicopter hours, increase the airframes, increase the crews and operations have been matched to the capacity, the numbers of troops, the amount of transport, the ammunition, the whole lot, to what has been provided and that is one of the eternal verities of the military existence. The soldier, the airman or the sailor would always want more but you have to support it and he has to match his task to the assets he has been given.

Q101 Mr Dunne: Are transport requirements being met on the ground through land vehicles which would otherwise be met through helicopter lift were these helicopters available?

General Sir Kevin O'Donoghue: Yes, I think they might be now; yes, that is a fair comment.

Q102 Mr Dunne: Is it also a fair comment to suggest that most of the very regrettable military deaths have taken place through roadside attacks on our land-based vehicles which might have been avoided were helicopters available?

General Sir Kevin O'Donoghue: That is a very dubious statement.

Ministry of Defence

Q103 Mr Dunne: It was a question not a statement. **General Sir Kevin O'Donoghue:** I think you would find that a lot of instances are where soldiers need to be on the ground and that is what they are for. Flying from A to B is one thing; actually patrolling on the ground is something different.

Sir Bill Jeffrey: I would be cautious about answering your first question completely in the affirmative but I do revert to what I said earlier that the flying hours required by military commanders in theatre have been met.

Q104 Mr Dunne: Returning to the measures that you have taken to provide alternative lift capacity, has the MoD sought or received offers of additional platforms over and above the Danish Merlins referred to in figure five?

Sir Bill Jeffrey: There was one possibility that was considered around the same time as these decisions were taken involving some Pumas which the Portuguese had and the conclusion was reached that they would not meet our requirements for a number of reasons.

Q105 Mr Dunne: It appeared in the media that that offer had been made.

General Sir Kevin O'Donoghue: They were very old.

Q106 Mr Dunne: The Report refers on page nine, paragraph 1.7, to the Dutch Chinooks. I found it hard to understand precisely what was meant here in the Report. If I have read it correctly it suggests that the digital cockpit which has been installed in the Dutch Chinook fleet would also fail to meet the same airworthiness tests that the British have adapted or have imposed. Is that the way it should be read?

Lt Gen Andrew Figgures: Not necessarily the airworthiness test but it was not, and it was a point that I made earlier, sufficiently responsive for the demands of flying in support of Special Forces. The Dutch use their helicopters on a green basis rather than flying them in the demanding envelope and conditions required for the insertion and extraction of Special Forces.

Q107 Mr Dunne: That presumably includes flying sometimes through cloud, sometimes at night? That is what our craft do for Special Forces.

Lt Gen Andrew Figgures: The Special Forces would fly in different levels of illumination, different weather states and so on; it is a much more demanding regime.

Q108 Mr Dunne: On page 7 it says "The helicopters can fly but are restricted to flying on cloudless days above 500 feet". Are these helicopters the Mk3 that are currently in storage or are these the Mk2a helicopters which are currently in use?

Sir Bill Jeffrey: They are the Mk3 which are currently in storage.

Q109 Mr Dunne: The Report also refers to the training capacity on page 16, paragraph 3.9, the fourth bullet. It says that the "... flight simulators

do not match the requirements for flying the current Chinook helicopters", so that is presumably referring to the Mk2 and Mk2a, is it?

Lt Gen Andrew Figgures: They do not reflect the Mk2a NEP modification. The crews achieve a level and then they carry out flying in a number of areas to ensure that they achieve the necessary operational standard.

Q110 Mr Dunne: So we have no simulator at present on which to train crews to use the night equipment.

Lt Gen Andrew Figgures: We have a simulator, you can fly at night, but the instrumentation does not reflect at this stage, although it is part of the through-life plan for the Chinook fleet, that we have a simulator which provides the necessary level of fidelity such that crews can fly and train off the platform. In the final analysis, flying in this demanding environment requires crews to fly the platform in that environment such that they have the confidence to discharge the mission.

Q111 Mr Dunne: Turning to the contract negotiation which has been touched on by other members of the Committee, what proportion of the Mk3 negotiation revolved around construction of part of the equipment in the United Kingdom? Was that an issue?

Sir Bill Jeffrey: From my own reading of the earlier papers I do not recall that being an issue.

Q112 Mr Dunne: Was there to any degree a concern by Boeing that providing the avionics source codes would have broken US technology restrictions or laws on data transfer?

Sir Bill Jeffrey: My recollection from my own reading of that early history was that this was about intellectual property and commercial interests rather than the American regime. I would like just to check that.

Q113 Mr Dunne: So you will write a note to us to confirm. Thank you.³

Sir Bill Jeffrey: Yes.

Q114 Mr Dunne: Given the widely recognised shambles of this procurement, can you enlighten the Committee on how many people are involved within the MoD in procurement of this project at present and how those numbers have changed over the time that you have been involved?

Sir Bill Jeffrey: It would be wise for us to offer you a note on that because the IPT has changed in composition and number over the period. Certainly more recently, as the Committee knows, we have brought together the through-life project team in what was the Defence Logistics Organisation with the Integrated Project Team in the old Defence Procurement Agency. The sensible thing for me to do is probably to offer you a note on that, if that is acceptable.⁴

³ Ev 16

⁴ Ev 17

Ministry of Defence

Q115 Mr Dunne: That would be helpful and could that note also cover the tiers of authorisation and approval within that team, so that it is clear how many different levels a decision has to be taken through.

Sir Bill Jeffrey: Certainly; yes.⁵

Q116 Mr Dunne: Do you know who is responsible for procurement at the end of the day? Is it you General?

General Sir Kevin O'Donoghue: Yes and the approval process goes up through a committee structure at various levels. I have certain delegated powers, but for this it went to the Investment Approval Board.

Q117 Mr Dunne: Do you have to approve projects of this magnitude through other departments, through the Treasury for example?

General Sir Kevin O'Donoghue: Yes, we are cleared by the Treasury.

Sir Bill Jeffrey: Yes; the Treasury only in fact. Treasury approval for projects of this size is required but within government, no-one else.

Q118 Mr Dunne: Perhaps you could show, if you were to do a decision tree of the tiering of decisions, where the Treasury come in. That would be very helpful.⁶

Sir Bill Jeffrey: We could certainly do that.

Q119 Mr Dunne: What changes have you made? You referred to bringing the two departments together but what changes have you made to the procurement team as a result of the lessons that you have learned from this? You described them as valuable lessons; I would describe them as costly lessons.

Sir Bill Jeffrey: We had a session with this Committee some months ago about the Major Projects Report in which you gave us an opportunity to talk a bit about changes we had been making across the procurement function in the ministry generally. I feel that although the structural change being made in bringing the procurement agency and the logistics organisation together was the right thing to do, it is not the whole story. The main focus of our effort has been in building skills, in learning lessons rightly, about investing effort early on and taking risks out of projects and in trying to imbue our staff with a sense of managing a project through life and not just up to the point when we acquire the kit. There are and have been big changes afoot. Although we would not in any sense claim perfection, a project as badly scoped as the original Mk3 project was would not now be signed off.

General Sir Kevin O'Donoghue: What you said is very fair. My executive committee of my main board goes through the major projects, those that are looking as though they might overrun in cost or overrun in time and we make decisions as to what we

are going to do about it. The governance around the whole project procurement issue is much, much tighter than it was.

Q120 Mr Davidson: I remember when I was in a local authority any time the social work department made a real disaster of something they described it as a valuable learning experience. I am not sure we can afford any more learning experiences like this. May I ask whether you were aware that the initial decision on this was taken by a new procurement minister on his very first day in office?

Sir Bill Jeffrey: Are you talking about the 1995 decision?

Q121 Mr Davidson: Yes.

Sir Bill Jeffrey: I have to say I was not aware of that.

Q122 Mr Davidson: I had a group of Royal Marines in on Monday who were berating James Arbuthnot as the Defence Select Committee Chairman about the lack of helicopters in Afghanistan and he confessed that he was the man who had taken the original decision and it had been taken on his very first day. That does sound rather as though he was ambushed, does it not, by people who were taking advantage of the new boy?

Sir Bill Jeffrey: I do not believe the department works that way frankly and you would not expect me to say it even if I did. However, I know that the tradition in this Committee, more than tradition, a very important constitutional principle, is that I am here to answer for events that took place before my arrival, but 1995 is quite a long time ago.

Q123 Mr Davidson: Okay. James Arbuthnot said that, so I presume it is true. If we leave aside then the question of the bad boys who did it and then ran away, moving on from that, may I just ask you about the relationship with Boeing? At the moment, am I correct in thinking that Boeing cannot meet demand for Chinooks so that if we wanted more, they could not supply us?

Sir Bill Jeffrey: They are certainly very fully subscribed. I think we could get them over time.

Q124 Mr Davidson: If we wanted them now, we could not get them. I do not know what to believe about this point about the access to codes because you went into the technicalities of it. Am I right in getting the impression that Boeing really were not as helpful as they could have been on that question?

Sir Bill Jeffrey: I think they were standing by their contractual entitlements.

Q125 Mr Davidson: So that is a yes.

Sir Bill Jeffrey: There were periods during which, later, and I am talking here about the Fix to Field project, when they themselves acknowledged, in discussions with us, that they could be moving quicker and during which Sir Peter Spencer, who was the Chief of Defence Procurement at the time, had discussions with senior people in Boeing. We now have a very good relationship with them

⁵ Ev 17

⁶ Ev 18

Ministry of Defence

because they accept that this project is important to them reputationally as well and their support arm is working very closely with us to deliver the reversion.

Q126 Mr Davidson: So it is fair to say, certainly in the early stages of this disaster, that Boeing were most certainly not as helpful as they could have been. Turning to paragraph 2.6, am I right in reading into that that Boeing basically recognised that the MoD were over a barrel and that they were just making the most of it by not agreeing on any terms other than those that were most advantageous to themselves? When I read the first highlighted point and then the second highlighted point it does look rather as though they know that they have you by a particularly tender part of your anatomy and that they are not going to concede except on their own terms. Is that a fair reading of this?

Sir Bill Jeffrey: I would not put it in that way.

Q127 Mr Davidson: No, I would not expect you to.

Sir Bill Jeffrey: It was a commercial negotiation. Over that period I certainly can recall once or twice being briefed to raise progress on this project with senior Boeing management. There was a realisation on their part that this was reputationally significant for them as a company. On the other hand, they had fulfilled their contractual obligations in the earlier part of this saga and they had a business to run, so I would not read too much into that.

General Sir Kevin O'Donoghue: They are complex negotiations. If you sign up to a price too soon, then you are liable to pay a big risk premium because the contractor will not be clear on how much risk he is bearing. It takes a while to talk through that risk, work through the risk, decide exactly what is good value for money and what is not and they are not things with these complex contracts that can be done that quickly.

Q128 Mr Davidson: I do understand that, but in paragraph 2.6, the first bullet point, the first sentence does actually say "It took longer than expected" so presumably the expectation took account of all these complexities and difficulties. It is not unreasonable for me to draw the conclusion that Boeing are a bad lot basically and they took advantage of what could have been classed as an incompetent customer and saw the opportunity to exert the maximum influence for their own game which is not really what we would normally expect from an ally. Leaving aside the initial disasters and so on, could I now turn to the question of whether or not you then responded as best you could? I thought the nature of the decisions you have been taking to recover were pretty reasonable until I started looking at paragraph 10 on page 6 where it does say "The Department's progress up to the point of committing to reversion . . . was protracted". Then the next paragraph "Had the Department progressed the Fix to Field project more quickly the Reversion project would have been unnecessary". We are entitled to be slightly anxious about that, are we not?

Sir Bill Jeffrey: That is a logical statement in the sense that if we had succeeded in delivering Fix to Field significantly earlier than we were on course to deliver it, then sticking with it might well have been the right course. As it was, we decided on reversion because we knew it could deliver us some usable helicopters two years earlier.

Q129 Mr Davidson: That is right. It is the point that how they could be made operational was protracted. It is the protraction and to some extent that has been covered by the point about Boeing.

Sir Bill Jeffrey: It goes back to your point about paragraph 2.6. I would certainly not draw the conclusions you do about Boeing's operation on this. What is undoubtedly the case though is that the discussions with them about the preparatory phase of the Fix to Field project took longer than had been expected. Arguably the expectation was unrealistic because this was a very complex issue as it turned out.

Q130 Mr Davidson: May I just ask about the ability of the Chinooks that were in the shed, as it were? Am I right in thinking that they could not be used at all, that they were not able to fly under any circumstances or could they have been used to free up other equipment for Afghanistan?

Sir Bill Jeffrey: I would make a distinction between whether they were flyable, which they clearly were, and whether they could be flown, given the fact that they were not safety assured and therefore had not been released to service. The latter was certainly true. We could not fly them operationally because of the safety issue but the safety issue only arose because we were not able to prove to the safety authorities that they were safe to fly.

Q131 Mr Davidson: I was under the impression—maybe I picked this up wrongly—that they were not fit to fly in the very extreme circumstances in which you had originally hoped to use them. Had you just wanted to use them as basic planes, would they have been usable then?

Lt Gen Andrew Figgures: They were not suitable for flying in the support helicopter role of the green Army, as we would say. So they had a very limited flight envelope and the Report gives reference to it.

Q132 Mr Davidson: They could not even have freed up anything that was otherwise available in the UK?

Lt Gen Andrew Figgures: They would not have given us any military utility.

Q133 Mr Davidson: They could not even have been used for royal junkets?

Lt Gen Andrew Figgures: I do not think there is a requirement for a royal junket.

Q134 Mr Davidson: May I ask about paragraph 2.13? I understand why, in the circumstances you were in, urgent pressure for helicopters, you scrapped the Fix to Field and reverted. What I am interested in is this question of the detailed business case being subsequently approved. What would

Ministry of Defence

have happened if the detailed business case had not been approved or was the urgent operational need so great that no matter how it started up it was going to be approved because the need was so desperate?

Sir Bill Jeffrey: The need was as great as you describe it. What the business case needed to do though was not simply to address the question of whether there was an operational need for early helicopters. It needed to go into a whole range of other issues around the particular means by which we would meet the special operations requirement which Fix to Field was intended to meet but also a great deal of detail about how the reversion project was also going to be pursued, its timeframes, the contractual aspects of that. There was still very important business to be done in order for the department to satisfy itself that it was a well-founded project and we did that.

Q135 Mr Davidson: Were there circumstances in which that might have not been proceeded with given the operational requirements?

Sir Bill Jeffrey: It is conceivable, but unlikely I would say.

Q136 Mr Davidson: So effectively we should not draw any consolation from the fact that detailed business cases were subsequently prepared and approved. Unless they were absolutely wild then they were going to be because you needed them so enthusiastically.

Sir Bill Jeffrey: I think you should draw comfort from that. In my estimation as accounting officer it is still important that government departments should operate on the basis of properly constructed business cases which get into all the detail of a project, even if there is a view in principle that it is what needs to be done.

Q137 Mr Davidson: My final point is on this question of other alternatives which were available to get the capacity. Am I right in thinking that you could not buy any more from Boeing because they did not have the capacity? You could not borrow any from allies at all and I am not sure whether there was none available or nobody would lend them to you.

Sir Bill Jeffrey: There were discussions with the Americans in particular about whether we could use Chinooks that they could provide, but their own requirements were such that that was not possible.

Q138 Mr Davidson: Was there nobody else, Australia, New Zealand, anybody else at all from whom we could have borrowed stuff?

Sir Bill Jeffrey: The truth is that in the two significant campaigns that we, the Americans, the Australians and others are engaged in, helicopter support resources of this kind are at a premium. In fact, there is in my view a strong need to persuade NATO allies in particular to be ready to deploy their own helicopter capability on their own account. At the point in time you are referring to, we did explore with Americans in particular and we found it just was not possible.

Q139 Mr Davidson: In the same way that it would appear the French want to borrow our aircraft carriers, if you read the front page of *The Sun*—and it must be true because it is in *The Sun*—there was nobody from whom we could tap helicopters at the time then?

Sir Bill Jeffrey: No.

Q140 Phil Wilson: What is the lifespan of a Chinook?

Lt Gen Andrew Figgures: We have plans in hand to increase their life to 2040. We are going to have a life extension programme.

Q141 Phil Wilson: How long would you expect a Chinook to last for, 20 years, 30 years?

Lt Gen Andrew Figgures: We are going to work over about another 33 years if our plans work out as we intend. It may well be, depending upon the usage, that one could extend it beyond that. One takes into account the hours they have flown, the state of their avionics, the state of their engines and so on, in order to ensure that we have put in place the necessary provision to do it and have a uniform fleet.

Q142 Phil Wilson: So you are saying about 30 years.

Lt Gen Andrew Figgures: Yes.

Sir Bill Jeffrey: Thirty plus.

Q143 Phil Wilson: So does the time these Chinooks have been in the hangar count towards that life expectancy or does the life expectancy start once they enter service?

Lt Gen Andrew Figgures: Because they have not flown any hours and they have just been kept in care and maintenance we expect that really the degradation of the airframe has been very limited. Yes, we would anticipate that they would go out of service in the region of 2040.

Q144 Mr Bacon: I have found the quote I was looking for earlier. Even when shopping for a can of beans at Tesco's I live and die by these immortal words "You get what you pay for". I found another summary which puts it even better than the one I read out earlier. The Mk3 is supposed to come with a glass cockpit like the Dutch ones. The pilots saw that and said "Cool, we'll take it". The MoD looked at the back of the brochure, saw the poverty spec which ripped out half the glass and replaced the old stuff. Boeing went "Hang on. Are you sure? Nobody buys that spec ever". MoD said "But it's cheap. We'll have that". Boeing built it and, because nobody else uses the weird mixture of cockpit controls, the software that runs the whole thing is not up to the job, hence not fit to fly. MoD sues Boeing. Boeing goes "You got what you asked for even though we told you it was a stupid idea". MoD goes "Oh dear, oh well, it is only helicopters, not like we need them or anything". It would be funny except there are people dying in Afghanistan and it is not possible to prove empirically or causally—or perhaps it is and this will doubtless become public, it is a session held in public,

Ministry of Defence

and we will hear from people in the forces who have had direct experience of where they did not have lift and where their comrades died as a result. It is not easy to show empirically that a particular piece of kit, certainly not from this distance, would have saved lives on a given occasion, but it seems pretty likely. Even if you stick with your £389 million figure, it is also pretty evidently the case that you could have had dozens of high spec Special Forces helicopters that worked for a lower price than you paid for eight which do not work properly. That is true, is it not?

Sir Bill Jeffrey: I do want to respond to your earlier comments but on your very last point I would not say dozens. We could have got more than eight but not dozens.

Q145 Mr Bacon: And they would have worked better. You could have got more and they would have worked better.

Sir Bill Jeffrey: They might, but we are on a course now which will deliver capable aircraft. On your earlier points, I read websites or blogs of that sort as well and it is important for us to understand the strength of feeling which lies behind comments like the ones you have just read out. We take it seriously. I hope this Committee accepts that even though there are occasional failures in this area, aspects of this story do constitute failure. We are deeply conscious of what hangs on it and we are very committed to providing support for those in theatre that we are all responsible for providing.

Q146 Mr Bacon: One more question about the contracts. I quote again. "While the contracting for the HC3s is a complex issue it was not prescriptive enough"—I referred earlier to the contract being full of holes—"one of the holes being the evidence to support the safety case for the hybrid cockpit". Do you think that is fair that one of the omissions was that there was not in the contract a requirement for a safety case to support the hybrid cockpit?

General Sir Kevin O'Donoghue: I think that is probably fair.

Q147 Nigel Griffiths: It was put to you that the MH47e or g was the helicopter that the RAF really wanted in 1994 in the lead-up to the 1995

procurement but the MoD could not afford it. What were the budget trends in MoD spending in the years leading up to that?

Sir Bill Jeffrey: Certainly in the period after the end of the Cold War the defence budget fell in real terms quite substantially.

Q148 Nigel Griffiths: That is fine; that answers my question.

Sir Bill Jeffrey: If I may, I would just like to check what we know of the history. I do not know for a fact whether this was the RAF's preferred solution and whether it was not pursued on cost grounds. I should like to check that and if we discover anything which is inconsistent with what we have been saying this afternoon, we shall draw it to the Committee's attention.

Q149 Nigel Griffiths: To take the words Mr Bacon has just used, it appears that troops are dying in Afghanistan because of chronic failures in the mid-1990s and one of the worst examples of procurement that we have seen.

Sir Bill Jeffrey: I have accepted most of the second of these charges. I have been around too long to be drawn into the political comment that is implicit in the first.

Q150 Chairman: That concludes our hearing but I will leave the last word to you, if you wish. Seven years after these helicopters were delivered, they are still languishing in climate-controlled hangars despite the fact that they are desperately needed in Afghanistan. Do you wish to apologise?

Sir Bill Jeffrey: If you take the whole course of events from 1995 onwards, it is not a good story and it is one that departmentally we should be expressing regret for. I come back to what I was saying earlier, that I hope the Committee will look at the principal subject of this Report, which is what has happened during the last few years, and conclude that in what was a bad situation we have not actually managed the follow-through as badly as all that.

Chairman: Thank you gentlemen. On a more positive note, our Comptroller and Auditor General, Tim Burr, received a CB over the weekend and we would like to congratulate him and thank him for all his help. That concludes our hearing.

Memorandum from the Ministry of Defence

Questions 64-66 (Mr Bacon): *Who was the predecessor as the head of the Integrated Project Team or its equivalent to the present one, Group Captain Sibley?*

In line with Cabinet Office guidance¹ and the principle that employment matters are a matter of confidence and trust (extending beyond the end of employment) the Ministry of Defence is unwilling to release publicly the names of the previous Chinook IPT Team Leaders. The Senior Responsible Officer for Helicopters, is currently Capability Manager (Battlefield Manoeuvre) Maj Gen Chris Wilson. He is responsible for ensuring the delivery of benefits for helicopter projects and sits on the MOD's Joint Capabilities Board.

Question 72 (Mr Mitchell): *Can you give us, perhaps in a letter to the Committee, an indication of who stayed with the project all this time to make all these cock-ups or are folk constantly moving on?*

No member of staff has worked continuously on the Chinook Mk3 procurement from its original approval in July 1995. Postings to the Chinook IPT, in common with postings across the Ministry of Defence, are normally between two and five years in length.

Questions 112-113 (Mr Dunne): *Was there to any degree a concern by Boeing that providing the avionics source codes would have broken US technology restrictions or laws on data transfer?*

Only Boeing can give an authoritative answer to this question, but we are aware of no need to qualify the reply given by the Permanent Secretary during the hearing.

Questions 114, 115 and 118 (Mr Dunne): *Given the widely recognised shambles of this procurement, can you enlighten the Committee on how many people are involved within the MOD in procurement of this project at present and how those numbers have changed over the time that you have been involved? [What are the] tiers of authorisation and approval within that team? Perhaps you could show [also], if you were to do a decision tree of the tiering of decisions, where the Treasury come in*

Chinook Mk3 procurement team evolution

Today, the Defence Equipment & Support (DE&S) Chinook IPT as a whole (including both equipment procurement and support arms), comprises 92 posts. This figure does not include MOD staff outside of the Chinook IPT, who have Chinook helicopters as part of their portfolio of responsibilities.

The size of the equipment procurement arm of the Chinook IPT has changed over the lifetime of the Chinook Mk3 procurement. The table below provides estimates of the number of Chinook equipment procurement posts during the periods selected which correspond to the dates of significant MOD procurement re-structuring:

<i>Date</i>	<i>Procurement team name</i>	<i>Approximate average number of posts</i>	<i>Notes</i>
Mar 95–Dec 04	Director Helicopter Projects (Chinook ²), later Chinook IPT	10	Initially part of MOD (Procurement Executive) Director Helicopter Projects. Later transferred to Defence Logistics Organisation (DLO) in 1999 and Director Helicopter Projects disbanded.
Jan 05–Mar 07	Chinook Future Heavy Lift IPT	18	Project transferred to Defence Procurement Agency (DPA).
Apr 07–to date	Chinook Future Heavy Lift	23	Creation of DE&S in Apr 07 following merger of DPA and DLO. Chinook Integrated Project Team (IPT) and Chinook FHL IPT brought together as Chinook IPT.

¹ Para 75, Departmental Evidence and Response to Select Committees, dated Jul 05

² Staff were not dedicated to the Chinook Mk3 procurement and also had responsibility for Chinook Mk2 and Mk2a.

MOD equipment approvals

Projects are divided into four categories (A to D) determined largely by value but also on whether they are considered novel or contentious. The Investment Approvals Board (IAB), or in some cases the Defence Board, considers Category A projects. Responsibility for the approval of lower value proposals is delegated to subordinate Approving Authorities. The table below details the Category, Cost and Approving Authority of all equipment procurement projects:

<i>Category</i>	<i>Procurement Cost</i>	<i>Approving Authority</i>
A	Above £400M	DE&S Investment Board, IAB, MOD Ministers and HMT
B	£100M to £400M	DE&S Investment Board, IAB Delegated Approving Authorities
C	£20 to £100M	DE&S Chief Of Staff, IAB Delegated Approving Authorities or TLBs
D	Under £20M	Relevant DE&S DG or IPT Leader

Treasury approval level

The Ministry of Defence makes investment decisions under delegations given by the Treasury. These vary by project type as shown in the table below:

<i>Type of Project:</i>	<i>Equipment</i>	<i>IS-enabled Business Change</i>	<i>Estate Projects</i>	<i>Service Provision and Support Provision</i>	<i>In-Service Support</i>	<i>PFI/PPP Projects</i>
MOD Delegation	£400m	£100m	£100m	£400m	£400m	£100m

Any projects with costs in excess of these figures must be approved by the Treasury at the main decision points. The Treasury can also require the department to seek its approval for lower value projects on a case by case basis. This is most likely to arise when some aspect of the project is regarded as novel or contentious.

ISBN 978-0-215-52666-3



9 780215 526663