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THE ATTACHED TRANSCRIPT WAS TYPED FROM A RECORDING AND NOT COPIED FROM AN ORIGINAL SCRIPT. BECAUSE OF THE RISK OF MISHEARING AND THE DIFFICULTY IN SOME CASES OF IDENTIFYING INDIVIDUAL SPEAKERS, THE BBC CANNOT VOUCH FOR ITS COMPLETE ACCURACY.

“FILE ON 4”

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STICKLER: As the debate rages over equipment provided to our armed forces, File on 4 investigates the state of military aircraft and asks are they fit to fly.

LAWRENCE: It was hard to take in that this accident had happened and Marc was involved, he wouldn't be coming back. It just didn't want to believe it, and even now I don't think either of us want to.

CHAPMAN: [Crying] Mum opened the door and she said she'll never forget those words. "Sorry, we regret to inform you that we think your son's missing in action, presumed dead."

STICKLER: Relatives of servicemen killed in the skies over Afghanistan and Iraq: lives lost because of unprotected outdated planes that simply weren't up to the job. For the last month File on 4 has been investigating military airworthiness. We've spoken to former engineers, crew and senior RAF chiefs. We've seen restricted documents and uncovered evidence of blatant safety breaches, where warnings have been ignored or over-ruled.

COOPER: People should be given proper equipment to serve their country and do their duty, be it a helmet, be it a Land Rover or be it an aircraft. These are all tools for members of the armed forces.

## SIGNATURE TUNE

## ACTUALITY IN BLOOMSBURY

STICKLER: The hustle and bustle of Bloomsbury, Central London. Behind the imposing wrought iron gates and façade of St George's Court are the offices of what's known as the Nimrod Review. This is the starting point for our investigation. Over the last year and a half the eminent QC, Charles Haddon-Cave, has been conducting an independent inquiry about the loss of Nimrod XV230. On the 2<sup>nd</sup> of September 2006, the aircraft exploded mid-air over Afghanistan, killing all fourteen service personnel on board. It wasn't shot down – it was due to a fuel leak.

KNIGHT: That's a picture of his passing out parade. That was when he got his coveted wings at Cranwell.

STICKLER: And you've got the folded Union Jack.

KNIGHT: The folded Union Jack, that was what was laid on his coffin in Kandahar when he was put on board the aircraft. And the flower that we've got there, the dried flower, that was from his brother's wedding that we kept, because he couldn't be there for his brother's wedding.

STICKLER: A display cabinet in the corner of Graham Knight's living room holds treasured possessions: a poignant memorial to his son. Sergeant Ben Knight, aged 25, was a Weapons Systems Operator on Nimrod XV230.

KNIGHT: The picture of him actually on the tarmac with the sunglasses on, we always said that was his Tom Cruise pose. That was him living his dream really, but it turned into a nightmare. A lot of people had taken their eye off the ball and



STICKLER: And according to Flight Commander Jones there were fundamental flaws with the fuelling system – ageing seals that hadn't been serviced – on an aircraft that was now under increasing pressure.

JONES: When we started using Nimrod in Afghanistan and also Iraq, Air to air refuelling became a more or less routine event. Most flights involved air to air refuelling. And it's when we use air to air refuelling at higher flow rates and higher pressure do the seals have a problem. Fuel leaks became a real issue when they started to do air to air refuelling.

STICKLER: And are we looking at just one of the aircraft or do you believe this was the entire fleet?

JONES: No, no, it was all, the problem was across the fleet.

STICKLER: It was only during the Coroner's inquest in 2008 into the loss of Nimrod XV230 that the full extent of the problems came to light. There was a fundamental design flaw: there were fuel couplings in the same compartment as hot air piping - the aircraft should not have been passed as safe to fly. In May 2008, the Coroner Mr Andrew Walker called for the fleet to be grounded. The families of service personnel were holding a press conference when the news of the Government's response came through. They were shocked to hear that the Coroner's recommendation had been rejected by the then Defence Minister, Bob Ainsworth.

EXTRACT FROM RADIO 4 'PM', MAY 2008

MAN: Bob Ainsworth has just said in the last few minutes that he would like to apologise again to the families, and he says, "I would like to reassure all those concerned that the Chief of the Air Staff has reaffirmed to me that the Nimrod is airworthy and that we are dealing with all the issues ...."

MAN 2: That statement from Bob Ainsworth is frankly an insult to everybody in this room, it's a disgrace. But this plane is not airworthy, it's not been airworthy for forty years, it's not airworthy today by the MoD's own regulations.

STICKLER: Speaking on Radio 4's PM programme, Mr Ainsworth suggested that the design fault identified during the Coroner's inquest had come as a complete surprise to the MoD and the RAF.

#### EXTRACT FROM RADIO 4 'PM'

AINSWORTH: There were clear failures, this aircraft had been flying for many years with a fundamental design fault which just hadn't been recognised, and it took this crash in order for it to be recognised.

STICKLER: But this File on 4 investigation has seen evidence that problems with the hot air piping and fuel systems had been highlighted before. We've seen a restricted Flight Safety Investigation report into an incident involving another Nimrod in 2004 – two years prior to the accident. The detail of this report is alarming. A hot air leak – of up to 400 degrees Celsius – was effectively boiling a fuel tank. The report made seven recommendations, in particular the introduction of a hot air warning system. The Station Commander's conclusions on the findings of the report were that it was indicative of problems across the fleet.

READER IN STUDIO: This incident highlights that it is particularly important that all who are involved in operating ageing aircraft be aware of the potential for failure in areas not previously subject to inspection regimes. This is not the first on the Nimrod MR2 in recent months. Airworthiness and design authorities need to be cognisant of this fact as new servicing schedules are proposed and debated; the unexpected failure should be ever at the forefront of our minds.

STICKLER: In the autumn of 2005, a year before the loss of Nimrod XV230, this Flight Safety Investigation report was copied to – amongst others - the Directorate of Aviation Safety, the MoD and RAF Group Command. The hot air warning system was never fitted. The Board of Inquiry into the loss of Nimrod XV230 refers to this incident and says: "such a fault is a possible cause of [the] fire and, thus, of the loss of the aircraft." Air Vice Marshall Stephen Hillier is the current head of 2 Group – responsible for the Nimrod fleet.

HILLIER: Our view, based on our assessments of airworthiness processes and procedures, was that the aircraft was airworthy and safe to fly. As an operational commander, I simply would not allow my air crew to fly if I felt it was otherwise. Now what the loss of the Nimrod in 2006 has tragically demonstrated is that there were shortcomings in our understanding of the airworthiness of that platform. What we have done is done an enormous amount of work to understand what those shortcomings were and to address them to ensure that the Nimrod is today airworthy and safe to fly.

STICKLER: The RAF was aware of problems with the fuel system and the hot air system back in 2004?

HILLIER: The Board of Inquiry into the loss of XV230 researched back into all of the Nimrod MR2 and Nimrod R1 losses and looked at the recommendations from the various inquiries to see what the connections were between the platforms, to see if there was something in one of the earlier accidents which could have clearly pointed to the loss of 230. And if there had been a direct connection between the two, then that would have been clearly highlighted in the Board of Inquiry.

STICKLER: It was clearly highlighted. It says, I have got the Board of Inquiry in front of me here, and I'll quote from it: 'such a fault is a possible cause of XV230's fire and thus of the loss of the aircraft.'

PRESS OFFICER: Sorry, hang on a second, Angus.

STICKLER: The interview was interrupted by a press officer.

PRESS OFFICER: Angus, we are just banging on here about XV227.

STICKLER: Well, we are, because it's absolutely pertinent.

PRESS OFFICER: We have not had the opportunity with the Air Vice Marshal to go exhaustively through XV227. We're not doing any more questions on 227.

STICKLER: There is a very pertinent question because the recommendation for a hot air leak warning system was turned down on grounds of cost.

PRESS OFFICER: We are not doing detailed questions on 227.

STICKLER: We informed the RAF that we wanted to talk about the twelve page report the day before the interview. The Press Office later issued a statement. It confirmed that the recommendation to introduce a hot air leak warning system was not implemented. It says that "as part of the mitigation measures put in place after the loss of Nimrod XV230, the supplementary cooling pack ducting and engine cross-feed ducting are no longer used in flight." These are basically the hot air pipes. This is of little comfort to Graham Knight.

KNIGHT: I don't believe anything the MoD or the RAF or the Secretary of State says any more. The whole truth hasn't come out. They have been sort of misleading people, whether it's a question of defence policy, we are a strong military nation and they don't want to show the enemy, whoever they are, any weakness. Or whether it's just they would like to cover up all these flaws, it's hard to know really.

STICKLER: It's difficult to take in that your son basically lost his life because of these catastrophic failings?

KNIGHT: If I could sit him down in front of me now, he would be absolutely mortified that he was let down so badly by the people that he believed were watching his back and weren't. There's different layers, and each layer was doing something wrong. And people weren't told about things, and it just didn't filter down to the people who mattered, which were the air crew.

STICKLER: Since the loss of Nimrod XV230 there's been a constant drip feed of new information emerging about the current state of the fleet. Between January 2007 and March 2008 there were 310 reported fuel leaks. The fleet continued to fly. On the 1st July last year, Bob Ainsworth, then Defence Minister, made a statement to the House of Commons, giving assurances over the airworthiness and safety of the aircraft.

AINSWORTH: Nobody to do with aircraft safety will talk about completely or 100%. That is not in the vocabulary that they use. But they judge the Nimrod, they, the technical expertise available to the RAF, to the IPT, to QinetiQ and to BAE Systems, judged the Nimrod today, as it is today, safe to fly.

STICKLER: QinetiQ Limited is one of the world's leading defence technology and security companies. Eleven days prior to Mr Ainsworth's statement, it had completed the first draft of a review of the Nimrod Hot Air System at RAF Kinloss. The Executive Summary of this internal report is specific.

READER IN STUDIO: Currently there is insufficient information available regarding the hot air ducting and its insulation to draw any demonstrable conclusion on the overall risk being carried.

STICKLER: There were concerns that the hot air system was still not safe. In response, the MoD says the measures it took, such as turning off the hot air system and stopping air-to-air refuelling, reduced the risk of fire and explosion. In February of this year, QinetiQ also produced the results of a tear down, an investigation pulling a Nimrod to pieces to see if there were any other hidden problems. It revealed 1,495 observations or faults - 26 of which had potential airworthiness implications. These included chafed wiring and fuel pipes, all of which could have led to a fire and explosion. These issues were rectified. But in March of this year – nearly two and a half years after the loss of Nimrod XV230 - the bulk of the eighteen-strong fleet was finally grounded. We wanted to ask the Secretary of State about this. In particular, why did he reject Coroner Andrew Walker's demand to ground the Nimrod fleet, insisting they were safe to fly? Why did he say that the MoD did not know about a design fault with the Nimrod when similar problems were highlighted two years earlier? He declined the offer of an interview. The MoD maintains that the Nimrod fleet remains safe to fly.

#### ACTUALITY AT BLOOMSBURY

STICKLER: Sir Charles Haddon-Cave QC has been hearing evidence now for eighteen months. This Nimrod review is going to look at how systems and procedures may have failed. It will examine whether lessons should or could have been



GILBERT: To protect ourselves from bullets, we actually sat on flak jackets because we had no armoured protection on the aeroplane. And in terms of seeking missiles, giving a warning of a missile in the air, we had nothing at all. What we did do is we stationed a couple of ground engineers in the parachute doors and their job was to literally observe the windows, if they saw any flashes of light or a missile to tell us which direction it was coming in, and then it was my job to manoeuvre the aeroplane to try and get us out of the way of the missile. So it was really back to the Second World War.

STICKLER: So they would shout at you from the back of the plane, “Something port, something starboard”?

GILBERT: Their job was to shout, “Brake right,” or whatever they saw. Various things would come out of their mouths, but their job was to communicate to us that there was a missile heading towards the aeroplane.

STICKLER: It’s now believed that it wasn’t a sophisticated missile that brought down the Hercules XV179, but that it may have been a single bullet. It’s not known for sure, but an inert object penetrated a fuel tank and the wing exploded. Since the 1960s and the Vietnam War, US planes have been fitted with a relatively low cost foam safety device, which stops fuel tanks exploding, even when they are pierced by a bullet. Sarah Chapman remembers being told by an officer that had the foam been fitted to the Hercules, it could have saved her brother’s life.

CHAPMAN: And he started with showing with, you know, the aircraft, explaining everything and then showing where the shot would have gone through and what had happened. I can remember him saying all of these things, you know, sitting there looking at him, sitting on my hands and taking every single ounce of mental and physical strength not to lurch forward and just hurt someone, shout and scream at them. They lost the wing and they lost their balance and they can’t come back and, and I was so angry, God, I was livid.

STICKLER: In December 2005 the MoD published the Board of Inquiry report. It announced that the fitting of a fuel tank inerting system was being investigated as a matter of urgency. But three years prior to the loss of Hercules XV179, pilots and crew, concerned about the vulnerability of the fuel tanks, had already asked for it to be fitted. In 2002, Squadron Leader Chris Seal drew up a report for senior staff.

SEAL: I compiled the squadron's 'Lessons Identified'. It was a serious document, four or five pages long, identifying all the problems from when we first went out to Afghanistan.

STICKLER: You did alert your senior chain of command that foam was something that you needed in the wings?

SEAL: I listed a number of things that I thought that we needed. We needed better defensive aid suites, we needed better night vision goggle capabilities, we needed foam in the wings. In fact, they had been talking about foam at high levels for some time. They couldn't afford to take the aeroplanes out of service to fit it. Sadly, I think they should have taken the planes out of service and fitted it, and not to fit it was actually, verging on negligent, as senior officers saying, "No, we need to carry on the job." The unfortunate fact was that these aeroplanes were bringing supplies and bullets and even bog roll to guys on the ground, without which they couldn't carry on the fight.

STICKLER: Understandable operational requirements - priorities. But File on 4 has uncovered more evidence – documents which prove that the MoD, the RAF have known about Explosion Suppressant Foam for decades. The Ministry of Defence Procurement Executive drew up specifications for it in April 1982, more than twenty years before the loss of the Hercules, two decades during which foam could have been fitted to the fleet. Again we put these points to Air Vice Marshal Stephen Hillier.

HILLIER: It wasn't a question of not knowing that there was the ability to fit explosive suppressant foam. It was a question of prioritisation. Did we assess that this threat was sufficiently great to make us treat this issue as the highest priority and get on and do something about it?

STICKLER: The US were using it in Vietnam, you have a design specification for it in 1982, you've known about it for twenty, thirty years, surely that's enough time to fit it in a plane?

HILLIER: Well, I mean, clearly it's enough time to fit in an aircraft if that's what you decide is the priority that you wish to follow. I think what it's important to emphasise is that there's the US example in Vietnam, but the way that we were using the C130 was not in the way that the US had been using the aircraft in Vietnam. This wasn't the highest priority.

STICKLER: So we were complacent?

HILLIER: No, I don't think that's true at all. As I say, we made a rigorous assessment of the threats, we prioritised those threats, we spent a lot of money and a lot of time in protecting against those threats. When I look at the work that's been done on the C130 over the years, you know, it's certainly not the case that we were in any way complacent.

STICKLER: The MoD has conceded that the aircraft's manufacturer, Lockheed Martin, offered Explosion Suppressant Foam to the RAF in 2004. Even though the risks had been identified, it was rejected on the grounds that the vulnerability of the fleet did not justify the costs of fitting it. The Hercules fleet has now been fitted with foam and that is largely due to the constant campaigning by the bereaved families and former servicemen and women. But they believe they've had to force the issue. There is a growing sense of anger with the Government and now they've launched a High Court action against the MoD. The barrister, Bernard Colleary, details the basis of their case.

COLLEARY: Our claim is rooted in the systemic negligence that stems from the use of an outdated aircraft that was beyond its use by date.

STICKLER: You have a list of thirty-plus specific failures, is that right?

COLLEARY: Yes, and the failures relate as well, to the failure to enforce defence standards, that is, breaches in effect of air law.

STICKLER: On this list of thirty-plus failings, have the MoD contested any of them?

COLLEARY: No, it appears that the Ministry of Defence have conceded all of them.

STICKLER: Does that mean that they are basically admitting to all these failings?

COLLEARY: Yes. This tragedy hopefully will result in a systemic review of defence standards, responsibility and political decision making. This case is just not about unfortunate events in a hostile combat situation, this case goes to the very root of maintaining armed services.

STICKLER: The basis of the claim is that the Hercules was not fit for purpose. The list of failings includes the lack of foam, an ineffective Defensive Aids Suite, the outer wings were beyond their safe life. During the course of our investigation we became aware of other cases – again more air accidents where safety warnings had been ignored.

#### ACTUALITY OF SEA KING

STICKLER: Squadron 849, the Royal Navy's Sea King helicopters operating in the Gulf in 2003. On the 22<sup>nd</sup> of March that year, two of the helicopters collided during operations. All seven service personnel were killed. Lieutenant Marc Lawrence, aged 26, was an observer with one of the crews. His parents, George and Anne Lawrence, remember him telling them he was going to war.

ANNE LAWRENCE: I was worried, of course I was worried, but he assured me that the Navy – what was it? “Do you think the Navy have spent so much time and effort training me to just put me in danger? This is a safe job, I'm as safe as anyone, do stop worrying.”

GEORGE LAWRENCE: That was his comment, one of his last comments before he left home really to join the Ark Royal.

STICKLER: Marc gained his wings as a Sea King observer in 2002 – just two years before his service career came to a tragic end.

GEORGE LAWRENCE: We didn't actually find out until half past one that day that Marc was involved. We had actually heard on the news that all families had been informed and we were just virtually saying we feel sorry for these other families, only to find out that it was our son that had been involved in this collision.

ANNE LAWRENCE: I do remember actually falling on the floor in the hall and dragging my daughter down with me.

STICKLER: It was ten weeks before Marc's body was found. The Board of Inquiry report concludes that the primary cause of the accident was the lack of avoiding action from either aircraft. Witness saw the impact, sighting a fireball within the aircraft and then seeing the wreckage fall vertically into the water. The reason they collided was they couldn't see each other – their anti-collision lights had been switched off. The report states that the lights did not comply with Defence Standards. They were detrimental to crews' vision - and because of this, the pilots were allowed to turn them off. The Board concludes that they were unfit for purpose. But according to Anne and George, this was not the impression given by the Royal Navy officers who visited them to help them go through the Board of Inquiry findings.

ANNE LAWRENCE: We did raise these issues, but we were effectually patted on the head, or figuratively speaking ....

STICKLER: You believe given the wrong impression about the findings?

ANNE LAWRENCE: Definitely.

GEORGE LAWRENCE: Yes, by the two officers that came up to see us, actually sat in this lounge ...

ANNE LAWRENCE: They moved on then and started discussing other things, I mean, it was just a bit, it took about as long as it took for you to say thank you for the coffee, it was just whitewashed, moved over. To my mind, and I'm sure if you were to speak to any of the other families, the implication was that the crew were responsible for their own demise. Not just implied, but that two crews with green rated pilots saw each other, acknowledged seeing each other and then flew into each other.

STICKLER: I mean, that would be a bizarre reading of the Board of Inquiry report to have any suggestion that it was avoidable, down to the crew rather than in terms of the technical?

ANNE LAWRENCE: Well, correct me if I'm wrong, but I'm sure that was the impression that I left the inquest with. Okay .... But they weren't going to discuss anything relative to the aircraft itself, they were merely going to discuss what the men did.

STICKLER: We've spent a month investigating this case. The anti collision lights are known as High Intensity Strobe Lights – or HISLs. We wanted to know why they'd been fitted to the Sea King. Had they been properly evaluated or tested? Why, if the Navy knew they were interfering with pilots' vision, were they still on the aircraft? We tracked down a senior MoD engineer who worked on the Sea King. He wishes to remain anonymous – an actor speaks his words.

ENGINEER: None of these conclusions or recommendations regarding the aircraft came as any surprise to anyone familiar with the programme.

STICKLER: You're saying that the Board of Inquiry finding that there were problems with the strobe light didn't come as a shock to you? I mean, we're talking about the safety of an aircraft here.

ENGINEER: Yes.

STICKLER: With service personnel on board.

ENGINEER: I could never envisage myself approving such a design.

STICKLER: You were responsible for it, so how come these lights were fitted? Did you know that they were to be fitted?

ENGINEER: The Naval Service Modification hadn't been appraised fully in accordance with the design and airworthiness requirements. There were faults in the design. The HISL design should be fully appraised. HISL was not compliant with the regulations at the time.

STICKLER: Did you ring alarm bells about this?

ENGINEER: Yes, that was formally notified to line management in the Project Office.

STICKLER: And what did your bosses say about it?

ENGINEER: I got no response.

STICKLER: You held up a red flag here saying, "Do not put this piece of kit on the aircraft"?

ENGINEER: Yes. After my final warning or red flag that the design still wasn't acceptable or stable, I left the project shortly after that. And what happened in the next two years I don't really know, but then you get the Board of Inquiry report from early 2004, which says it was non compliant, so the implication is that the regulations were still not implemented properly.

STICKLER: We have seen documents which support what this engineer has told us. We took our findings to George and Anne Lawrence. If can show you some of the detail of what we've found here. In May 2000, specifically





ARBUTHNOTT: Yes, it is on the grounds of cost. It is because we have always tried to take an essentially penny pinching attitude to each new procurement, rather than going for the quality equipment that we could. This a real concern for the Defence Committee. It's raised it on a number of occasions and we will continue to do so.

STICKLER: The people we have spoken to talk of systemic failures with the military airworthiness system.

ARBUTHNOTT: That is something that we have not looked into, but it is certainly an accusation that the Ministry of Defence has got to take very seriously indeed. There are some very important questions to be answered here.

STICKLER: It warrants further examination?

ARBUTHNOTT: I think it does, yes.

STICKLER: Issues that the Secretary of State for Defence, Bob Ainsworth, refused to discuss with us. The MoD issued a statement, saying it rejects the suggestion that there are systemic airworthiness failures across the Armed Forces. It says, "If our aircraft were not safe, then they would not fly." The Haddon-Cave Review will focus on the loss of the Nimrod in 2006. It's expected to report its findings this October. But the families and former crew we've spoken to hope it will cast its net wider and look at the issue of military airworthiness as a whole. With our armed forces coming under increasing pressure in Afghanistan, they argue it's a broken system – servicing old fleets, which in some cases are not fit for purpose and in a lethal state of disrepair.

SIGNATURE TUNE