



National Audit Office

Report

by the Comptroller
and Auditor General

Ministry of Defence

Military flying training

Summary

1 The Ministry of Defence (the Department) trains aircrew for each of the armed services. For example, Wildcat helicopter pilots for the Royal Navy, Apache helicopter pilots for the Army, and Typhoon fast-jet pilots for the Royal Air Force. The process involves several stages:

- **Aptitude testing and selection**

Students are selected based on their performance in a range of tests that measure mental agility, hand-to-eye coordination and situational awareness.

- **Core flying training**

Student pilots learn the basics of flying and progress on to training to prepare them for their future role (for example, helicopter training). Rear-crew students learn skills such as navigation, surveillance and use of weapons systems.

- **Operational flying training**

Students that complete core flying training join operational training units. Here they are trained on specific front-line aircraft, such as a Wildcat helicopter, Apache helicopter or Typhoon fast-jet (**Figure 1** on pages 6 and 7).

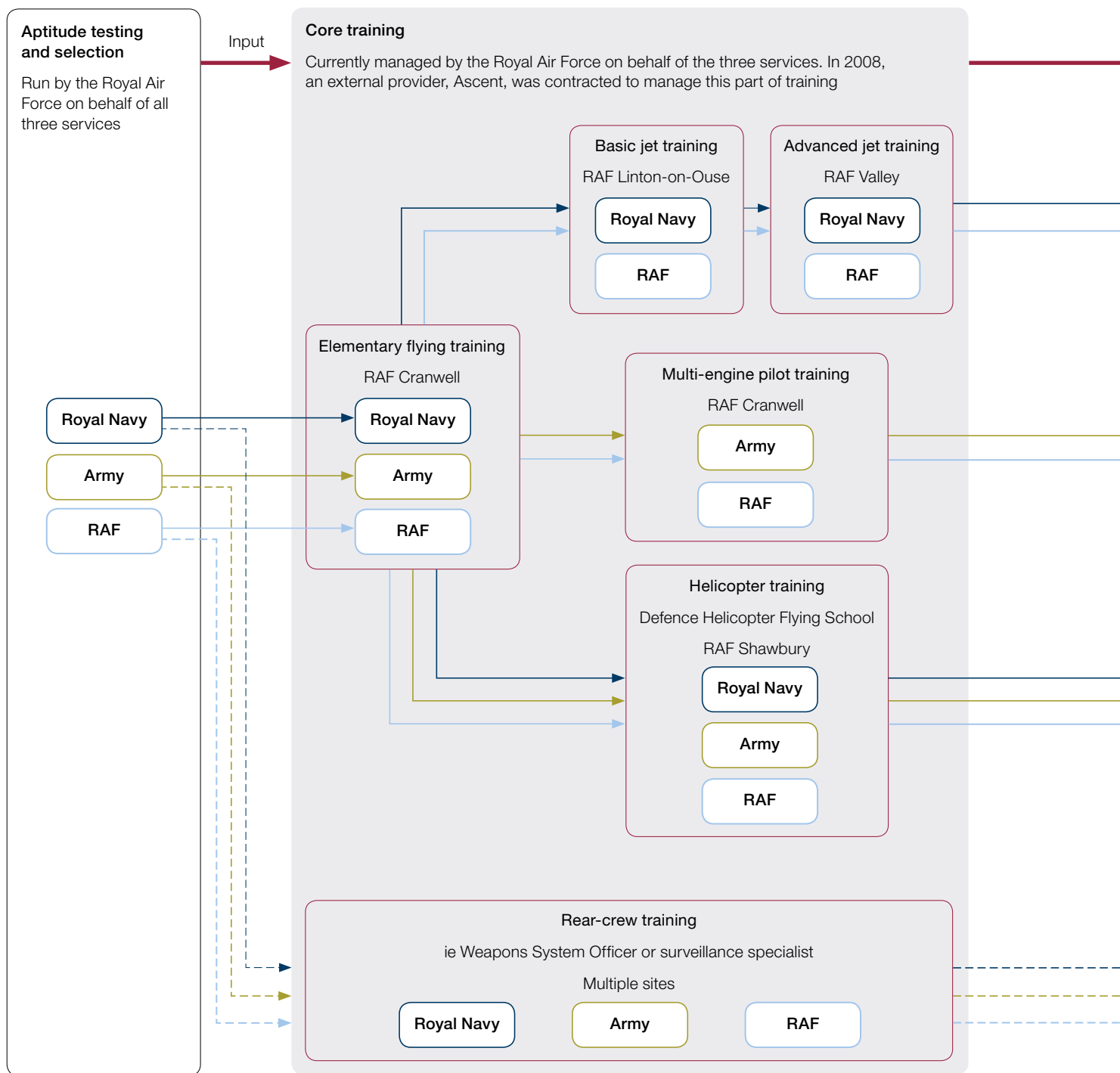
2 The Royal Air Force manages aptitude testing and core flying training on behalf of the Department. This involves personnel from all three armed services and many contractors. From civilian flying instructors to aircraft engineers and air traffic controllers. Each of the armed services run operational training for their aircrew once they complete core training.

3 Our 2000 report, *Training new pilots*, found:¹

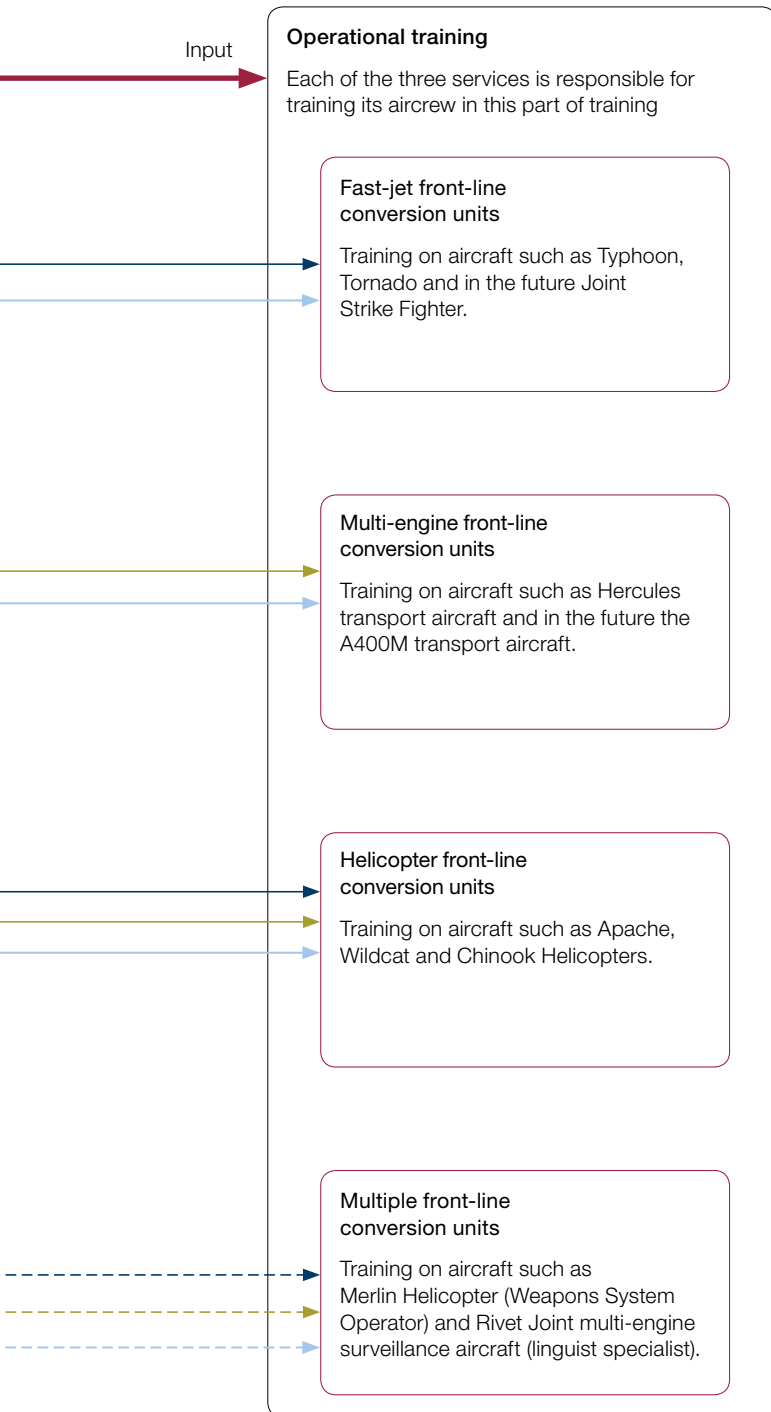
- existing core flying training was taking too long;
- training costs were increased due to student failure rates and delays in students moving through training; and
- monitoring of training performance was limited.

¹ Comptroller and Auditor General, Ministry of Defence, *Training new pilots*, Session 1999–2000, HC 880, National Audit Office, September 2000.

Figure 1
Military flying training



Source: National Audit Office



Notes

- 1 **Elementary flying training:** Aircrew who pass aptitude testing (and flying grading for the Army and Royal Navy) begin elementary flying training. Students learn the basics of flying, such as navigation and basic handling in a light aircraft. Successful students progress on to other courses based on flying ability and military need.
- 2 **Basic jet training:** Prepares students for advanced jet training by teaching more advanced manoeuvring and tactics on more powerful aircraft.
- 3 **Advanced jet training:** Students learn handling, night flying, low level navigation as well as weapons and tactics training on a jet-driven aircraft. The training prepares them to move to front-line fighter jets, such as the Typhoon.
- 4 **Multi-engine pilot training:** Students learn how to fly large, multi-engine propeller and jet driven aircraft, such as the Hercules transport aircraft. They learn general handling, navigation and asymmetric flying (where an engine on one side of the aircraft is not functioning).
- 5 **Helicopter pilot training:** Students learn basic manoeuvring, such as hovering, through to more advanced training such as night flying and mountain flying.
- 6 **Rear-crew training:** Training for rear crew varies by service and aircraft. Rear-crew do not fly aircraft, but operate weapons systems, navigate or undertake surveillance activities.
- 7 **Operational training:** Students learn to fly on front-line aircraft such as a Typhoon fast-jet or an Apache attack helicopter. Students learn handling, tactics and weapons systems operation. Once competent, students are declared combat ready and join a front-line squadron.

4 The Department recognised core flying training was complicated, disjointed and inefficient. It concluded that new core training, run by an external training provider, could help it reduce the time and cost of training aircrew. It would also help it replace obsolete training equipment that was leading to greater use of more expensive front-line aircraft in operational training. The external provider would have no role in aptitude testing or operational training.

5 In 2008, the Department contracted an industry provider, Ascent, to develop and manage a new approach to core training. The new approach is called the United Kingdom Military Flying Training System (UKMFTS). The Department's objective is for industry to provide training to meet three high level aims. These are to:

- optimise time in training;
- close the gap between the skills of aircrew finishing training and the skills needed to use front-line aircraft; and
- reduce the overall cost of flying training.

6 Under the new approach, Ascent is responsible for providing aircraft and simulators for training, running training courses and training an agreed number of aircrew each year. The Department remains responsible for many aspects of core training. These include providing military instructors, determining the number of students it needs and setting the training input and output standards. The Department considered that having an external provider would enable it to:

- transfer risk (for example, buying and making available enough aircraft for training);
- increase flexibility to respond to changes;
- promote continuous improvement and innovation; and
- integrate better the different stages of core training.

7 Ascent's contract is for 25 years. The Department is moving from existing core training in phases, through five different training packages, to minimise disruption. In 2011, the forecast cost was £6.8 billion, with the majority of the costs for providing new aircraft to support training. The new core training was expected to be running by 2012 and at full capacity by 2014.

Scope of the report

8 This report examines the Department's progress in implementing new core training (Part One). It also assesses whether the Department is getting the benefits expected from an external provider (Part Two) and how well it can achieve and measure the expected benefits of new core training (Part Three).

Key findings

9 Full implementation of new core training has been delayed by nearly six years. Several events have affected the Department's original assumptions about how its 25-year contract with Ascent would work. These include a substantial reduction in the number of aircrew entering training each year and a decrease in overall funding from a forecast £6.8 billion to £3.2 billion. There were also delays to new helicopter training because the Department thought it owned existing training aircraft when it did not. The Department also designed Ascent's contract assuming that it would finance the costs through the private finance initiative (PFI). This assumption changed, which has challenged overall affordability. The changes have taken time to resolve and the new core training is now scheduled to be running at full capacity by December 2019 (paragraphs 1.13 to 1.14 and 2.19 to 2.36).

10 The Department still controls many factors that affect training, which complicates its ability to manage the contract with Ascent. Ascent is responsible for factors such as training design and availability of aircraft bought through its contract. The Department is responsible for factors such as student selection, providing military instructors, availability of airspace for training and aircraft bought outside its contract with Ascent. It also has wide-ranging approval rights and it has become involved in aspects of Ascent's work, such as courseware design. This undermines the Department's ability to hold Ascent to account for activities it has sought to transfer out. The risk to UK military capability of not training enough aircrew to meet military needs ultimately rests with the Department and cannot be transferred (paragraphs 2.4 to 2.12).

11 The Department has struggled to fully hold Ascent to account for its performance. As at 31 March 2015, the Department had paid Ascent £143.3 million for training services. The Department had deducted just £308,000 from Ascent's payments for it failing to meet its responsibilities. We found that the Department has struggled to apply financial performance deductions, with some agreed only after many months of negotiation. This is despite the Department having significant concerns about Ascent's performance between 2008 and 2012, including its cost and schedule control and the quality of its work. The Department raised these concerns with Ascent's shareholders, who acted to address them. The Department considers that, since 2012, Ascent's performance has improved (paragraphs 2.13 to 2.16).

12 Contract incentives, set by the Department, do not encourage Ascent to improve training quality or reduce overall training time and cost. Incentives for improving core training form only around 1% of potential payments to Ascent. They also incentivise completion of training by number of students, rather than skills when they join operational training units. Greater incentives are available to Ascent for undertaking training work. Ascent's motivation to look for cost reductions has also been affected by reductions in the overall value of the programme to implement new core training. Its potential earnings have reduced while its planning and infrastructure costs have been largely unaffected by the changes (paragraphs 2.39 to 2.43).

13 Contracting with an external provider for fixed training capacity means the Department has less flexibility to respond quickly to changes. Training aircrew takes many years. Rebalancing the infrastructure and personnel required to train them takes time and carries costs. Historically the Department has had capacity to increase or decrease core training and has had full control of training activity. Implementing the new core training incrementally helped the Department avoid buying excess training when it reduced the number of aircrew it needed. However, the new core training has little spare capacity. Once fully implemented, increasing the training needed will take time and add costs. Having a contracted for service also means that any future decreases in the amount of training needed will require contract renegotiations. It could increase the unit cost of training aircrew as the contractor would still need a return on any investment in training infrastructure (paragraphs 2.26 to 2.28).

14 Moving to the new training packages by 2018 will put pressure on the Department's ability to train the right number of aircrew at the right time. The Department needs enough capacity to provide military instructors for both current and new training systems during the move. Equipment, and in some cases the legacy contracts, cannot be extended. Further delays could increase the risk of a gap in training that would result in fewer trained aircrew than needed. The Department is developing plans to create a surplus of trained students to cover training gaps. These plans are at an early stage and cannot be formally agreed until the fixed-wing and helicopter training packages are agreed (paragraphs 1.15 to 1.18).

15 The Department does not use effectively the data it has to understand current training performance. The Department has data on training activity but does not hold it centrally – rather in pockets throughout the Department. The Department does not routinely analyse it and subjects it to limited quality assurance. This means that when the Department contracted for an external provider it had no robust baseline for actual training time and cost, or aircrew ability at each stage of training from selection to combat ready. This lack of robust data limits the ability of the Department to understand performance or set Ascent meaningful performance targets. Without a robust performance baseline it will also struggle to measure the impact of changes to training and to assess whether future performance is better (paragraphs 3.7 to 3.36).

16 The process for reducing the overall cost of flying training is not clear. Staff understand high level responsibilities for getting benefits from new core training. However, many benefits of improved core training will be realised in operational training, which is managed under different funding, accountability and reporting arrangements. It is not clear whether cost and time savings will be identified and used to improve operational training or released to reduce overall costs to defence. It is also unclear how the armed services will be incentivised to seek opportunities to identify and exploit these benefits (paragraphs 3.4 to 3.5).

Conclusion on value for money

17 Implementing the new core training has been complicated by budget reductions, scope reductions and changes in the planned approach to financing. These changes have undermined the Department's original assumptions about how its long-term contract with Ascent would work. The legacy of these changes has understandably taken the Department time to resolve and has resulted in lengthy delays. The new core training has not been fully implemented and there is much to do if the Department is to get the planned benefits of the new approach.

18 Combining military and industry involvement in flying training has been challenging, particularly in relation to ownership of risk. The contracts already let have not effectively incentivised industry to help the Department achieve its aims for new core training. The Department needs to more fully understand training performance and what affects it before it can leverage significant improvements in core training. If the Department does this, and its training requirements do not fundamentally change again, there remains a significant opportunity to improve the value for money of military flying training. If it does not, there is a real risk that moving to the new core training will affect the military's ability to train the right number of aircrew at the right time.

Recommendations

19 The Department should encourage better performance from Ascent by more effectively incentivising it to work as a partner to achieve the aims of the new core training. The Department needs to develop contract incentives that better encourage Ascent to improve quality, and reduce time and cost. For example, once it has set a credible baseline, it could explore how it might share with Ascent the benefits of any performance improvements and cost efficiencies achieved.

20 The Department should assess the cost and time implications of increasing training capacity. Any extra flying training needed (for example, increases in military needs or international defence training) will affect capacity in the new core training. The Department should work out how much it will cost, and how long it would take, to increase training capacity in response to small, medium and large scale changes in need.

21 The Department should agree formal contingency plans for covering gaps in training during the move to the new core training. The Department needs to be able to respond quickly to any gaps in training that affect its ability to train aircrew. The Department is developing contingency plans but these need to be agreed formally across the services. The Department must set out what actions it will take, and criteria for triggering them.

22 The Department should set out and communicate clearly roles and responsibilities across the whole training system.

Ascent will run the new core training but the Department is still responsible for many factors that will affect its ability to get benefits. For example, student selection affects time, cost and quality in core training. The Department must ensure that roles and responsibilities are understood by all who can have an affect on training and that it is managed as a single system from aptitude testing to combat ready.

23 The Department should establish a robust baseline to measure, monitor and evaluate performance across the whole training system.

Without robust data on training cost, time and quality – from aptitude testing to combat ready – the Department cannot set an accurate baseline to track and challenge performance. It will also be unable to tell if it is achieving its aims for the new core training.

24 The Department should establish a clear process to get benefits across the whole training system and between services.

The Department needs to ensure it is clear who is responsible for getting all the benefits, including those outside core training. For example, reducing the number of training flights needed in operational training due to increased aircrew ability following completion of core training. It must ensure there is an agreed approach to getting benefits, and a mechanism which incentivises the services to actively seek time and cost savings that can be released for use between services or elsewhere in defence.