INCIDENT

Aircraft Type and Registration:	Douglas DC-8-63F, YA-VIC
No & Type of Engines:	Four Pratt & Whitney JT3D-7 turbojet engines
Year of Manufacture:	1970
Date & Time (UTC):	11 August 2010 at 1045 hrs
Location:	Manston Airport (Kent International)
Type of Flight:	Commercial Air Transport (cargo)
Persons on Board:	Crew - 3 Passengers - 9
Injuries:	Crew - None Passengers - None
Nature of Damage:	Tail skid damage within operational limits. Damage to runway and adjacent surface, single approach light destroyed
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	55 years
Commander's Flying Experience:	15,000 hours (of which 3,000 were on type) Last 90 days - 0 hours on type Last 28 days - 0 hours on type
Information Source:	AAIB Field Investigation

Synopsis

During the takeoff the aircraft's tail skid struck the end of Runway 28 at Manston, and also the soft ground beyond. An approach light for the reciprocal runway was destroyed by the aircraft's main landing gear. Post-incident calculations showed that the aircraft weight was more than 25,000 lb above the maximum allowable takeoff weight for the prevailing conditions. The investigation highlighted a number of procedural failings by the flight crew, a lack of currency in line operations and a lack of operational oversight and control by the aircraft operator and the regulatory authority in the Islamic Republic of Afghanistan. Four Safety Recommendations have been made.

Background to the flight

The aircraft operator was based at Kabul in the Islamic Republic of Afghanistan, and operated international and domestic passenger and cargo flights. It was established in 2003 and held an Air Operators' Certificate issued by the Ministry of Transport and Civil Aviation (MoTCA). The operator had recently acquired two DC-8-63F aircraft (of which YA-VIC was one) from a cargo carrier based in the United Arab Emirates (UAE), along with two three-man flight crews. The incident occurred during a flight between Manston and Buenos Aires, which was the first commercial task for the operator's DC-8 fleet.

History of flight

The aircraft was chartered to fly a consignment of 36 polo ponies from Manston Airport in Kent to Buenos Aires in Argentina via a refuelling stop in the Cape Verde Islands. The aircraft flew from Ras Al Khaimah Airport in the UAE to Manston on the 10 August 2010, arriving at 1513 hrs. It carried two complete flight crews; the crew which was to operate the next sector from Manston to Cape Verde travelled from the UAE as positioning crew. After arrival at Manston, the flight crews left for a local hotel whilst ground crew from the airport and the chartering company began preparing the aircraft cargo hold for the ponies.

The flight crew reported for duty at 0600 hrs the next day for a planned 0800 hrs departure. The arrival of the ponies at the airport was delayed and further delays were experienced during their loading. According to ground staff, the flight crew appeared most concerned about the flight from Cape Verde to Argentina, which would be the most limiting in terms of payload. Several questions were asked of the ground crew about the mass of the penning equipment which, because the equipment was standard and frequently used, could be answered accurately. The commander was occupied away from the aircraft as he dealt with dispatch issues and tried to obtain route charts for South America. His concern was that an increase in expected payload might necessitate a refuelling stop during the onwards flight.

When the aircraft arrived at Manston, there had been a discussion between the flight engineer and refuelling staff; it was agreed that refuelling would take place in the morning, and that approximately 37,000 litres would be required. In fact, in the morning the flight engineer revised this figure to 61,000 litres, and later instructed that the refuelling should continue until the aircraft's refuel valves closed automatically. A total of 61,801 litres was delivered.

A load and trim form prepared by the flight engineer showed a total cargo weight of 43,409 lb[1]. The flight engineer also prepared a takeoff data card which was presented to the commander when he arrived on the aircraft. The aircraft's takeoff weight as shown on the load form was 335,410 lb, although the takeoff data card showed a takeoff weight of 343,000 lb, with takeoff speeds for this higher weight. No crosscheck of the flight engineer's calculations or takeoff performance figures was made by any other crew member. Later analysis would produce a calculated actual takeoff weight of 343,046 lb. Although this weight was accurately reflected on the takeoff data card, it was some 25,700 lb above the maximum (runway limited) takeoff weight.

The aircraft eventually left stand at 1028 hrs with the commander as handling pilot. On board were the three operating crew, the three positioning crew who had flown the aircraft from the UAE, and six grooms and vets who were to attend the ponies during the journey. The aircraft commenced takeoff from the beginning of Runway 28. The weather was generally fine, with a reported surface wind from 290°(M) at 7 kt. The temperature was 20°C and the runway surface was dry. The QNH was 1014 HPa.

The takeoff run was seen by several airport staff, including loaders, air traffic controllers and operations staff, who subsequently remarked that the aircraft appeared slow to accelerate. Rotation was initiated near the runway end, and a cloud of debris was thrown

Footnote

[1] Aircraft and cargo weights were reported in imperial units. Where so reported, metric units are also given.

up from beyond the runway as the aircraft climbed away. The commander later reported being aware of two jolts as the aircraft lifted off and suspected that a tail strike had occurred. Subsequent inspection showed that the aircraft had left a scrape mark on the runway, which extended into the soft ground beyond.

Manston Air Traffic Control (ATC) reported the suspected tail strike to London ATC who relayed the information to the aircraft commander. With aircraft systems appearing normal, he decided to continue the flight to Cape Verde, where the tail strike was confirmed by the evident damage to the tail skid assembly.

Runway examination

Manston Airport (also known as Kent International Airport) has a single runway, designated 10/28. The takeoff run available on Runway 28 is 2,752 m and takeoff distance available is 3,112 m. Airport elevation is 178 ft.

The runway is constructed of asphalt/concrete and is 2,752 m long and 61 m wide. At the departure end of Runway 28, a ground contact mark was visible to the left of the runway centreline, 24.6 m long and starting 35 m before the end of the paved surface. There was then a 23.8 m gap with no obvious ground marks, but containing a destroyed centreline approach light fitting. There was then a 30 m trench in the soil, up to 23 cm in depth, which continued as scoring to the grass surface. The total length of the ground marks was 117.5 m. The width and nature of the mark was consistent with contact by the sole plate of the aircraft tail skid. The light fitting was displaced from the ground mark by a distance equal to the displacement of the right main landing gear from the aircraft centreline, indicating that the right main gear had struck the light.

Aircraft examination

On arrival in Cape Verde an aircraft inspection revealed evidence of ground contact on the tail skid. The tail skid assembly contains an energy absorber which is designed to deform with any ground contact to prevent damage to the airframe; the degree of deformation can be measured to assess the severity of the contact. In this case the operator reported that the energy absorber had deformed by 7/16 inch, which was within the maintenance manual limit of 1/2 inch, and no further inspections were required. Photographs were supplied to the AAIB showing the sole plate contact marks and deformation of the shock absorber. The aircraft continued on to its final destination where the shock absorber assembly was replaced. No other damage to the aircraft was reported.

Recorded information

Takeoff technique

The aircraft operating manual (AOM) describes a takeoff technique which takes into account the extended fuselage of the DC-8 series 60 aircraft. Initial rotation is to 8° nose-up pitch attitude in about 4 seconds. After a pause of one to two seconds, the rotation was to be continued to 11 to 12°. A note warns that a tail strike will occur at 8.95° pitch attitude.

Flight data

Data from the aircraft's flight data recorder (FDR) showed that rotation was initiated at 159 kt IAS, consistent with the planned 160 kt target. Figure 1 shows a graphical plot of the data for aft control column input and aircraft pitch attitude. The graph covers about 12 seconds, from just after the start of rotation through the early climb to about 100 ft agl (the nature of the two plots reflects the different update rates for each parameter).

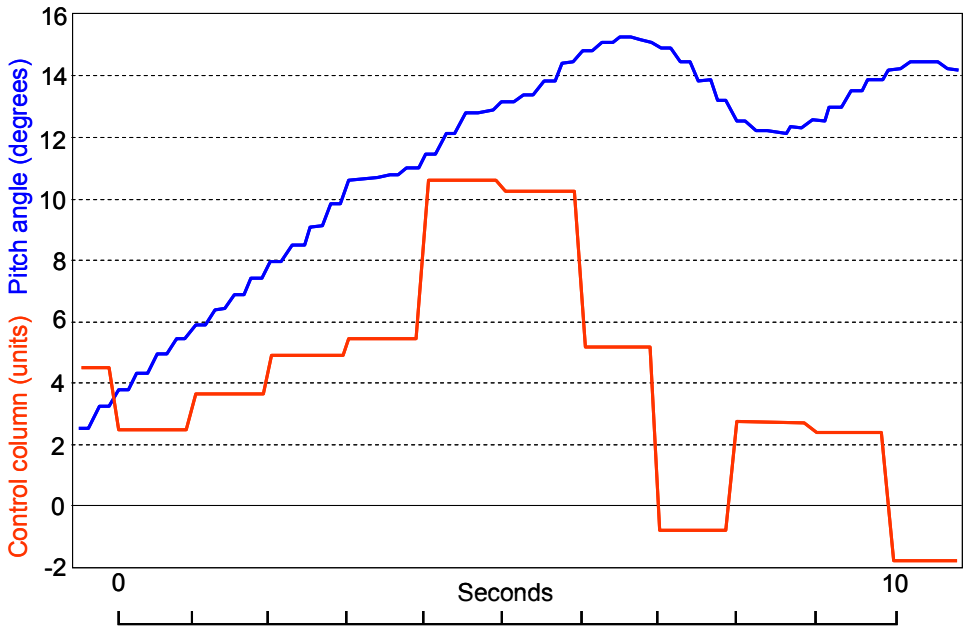

Figure 1

Aircraft pitch attitude and control column position during rotation

For the majority of the initial rotation, there was a steady aft movement of the control column (as far as can be determined, given the relatively infrequent update rate of once per second), resulting in a constant pitch rate. The aircraft reached 8° pitch in about five seconds and continued to increase at a constant rate until nearly 11°, at which point there was a marked reduction in pitch rate. A significant aft control column input was made at about this time, after which the pitch attitude continued to increase to a recorded maximum of 15.2°.

Target takeoff EPR[2] was 1.87. At 80 kt during takeoff, the target EPR was achieved on three of the four engines, with engine 4 producing a recorded 1.84 EPR. As airspeed increased towards rotation speed, only engine 3 remained at target EPR, with the other three falling to between 1.78 and 1.83 EPR. Shortly after liftoff, as pitch attitude reached maximum, all four engine EPRs increased within one second to between 1.83 and 1.91 EPR.

Footnote

[2] Engine Pressure Ratio: an indication of the amount of thrust being developed by a turbine engine.

Aircraft loading and performance

Fuel planning and uplift

The aircraft had arrived at Manston with 35,000 lb of fuel on board. A computer-generated flight plan was not immediately available when the commander agreed to the flight engineer's calculated fuel load of 120,000 lb. However, the captain of the positioning crew suggested that this figure might not be enough if the aircraft were to divert to an alternate airport. The commander agreed to load extra fuel as long as the aircraft would remain within the maximum landing mass at Cape Verde, which the flight engineer had told the commander was the most limiting performance factor. The aircraft technical log showed a total fuel load at engine start of 143,700 lb.

When the computer flight plan became available, it showed a total predicted fuel burn of 75,347 lb. Minimum required fuel was 97,661 lb, based on a payload of 60,000 lb and using an alternate airport 113 nm to the south of the destination.

Weight and balance

The cargo consisted of the 36 ponies, their feed and water, the penning equipment and aircraft items in the lower holds. At interview, the flight engineer detailed the equipment and weights used, and the chartering company confirmed that weights for penning equipment were known values.

The flight crew reported that the charter company's loading staff gave them an average weight per pony of 300 to 350 kg, while the charter company advised the AAIB that their standard weight for a pony was 450kg. This was considered a reliable figure and was that shown on the three air waybills. The cargo manifest, prepared at the cargo centre at Manston, also listed the ponies at 450 kg each. The aircraft's takeoff weight shown on the load and trim form was 335,410 lb[3], which had been calculated using a pony weight of 350 kg. Had the figure of 450 kg per pony been used, the calculated takeoff weight would have increased to 343,346 lb. Aircraft centre of gravity at takeoff was calculated at 22.8% MAC[4], which was approximately the middle of the allowable range.

Takeoff performance calculations

Using the payload as entered on the load form, a correction for the weight of the ponies and the actual ramp fuel entered in the technical log (which was 300 lb less than the load form figure), the actual takeoff weight would have been 343,046 lb.

Footnote

[3] Maximum structural takeoff weight was 358,000 lb.
[4] Mean aerodynamic chord.

The flight engineer completed the weight and balance form and a takeoff data card. The load form showed his calculated takeoff weight of 335,410 lb but the takeoff data card was completed using a weight of 343,000 lb. The flight crew could not provide a definite reason to account for the increased weight, other than to suggest that it was a conservative figure which would account for variations in the ponies' actual weights from assumed weights. In fact, the takeoff data card figure reflected the aircraft's actual takeoff weight if calculated using 450 kg per pony.

The speeds shown on the data card were: V_1 = 143 kt, V_R = 160 kt, V_2 = 172 kt.

The flight engineer did not refer to the runway performance analysis tables, which gave runway-limited weights for varying environmental conditions. The load form included a section "*Station Max. TO Wt*" in which the flight engineer had entered a value of 349,000 lb; it was not established how this figure had been reached. The table for Manston Runway 28 gave a runway limited maximum takeoff weight of 317,300 lbs in the prevailing conditions. Thus, at a takeoff weight of 343,046 lb, the aircraft was over 25,700 lb above the permitted maximum (runway limited) weight.

It was noted that data was available for a 'Flap 23' takeoff, which would have increased the runway limited weight by about 10,600 lb. The aircraft performed a Flap 23 takeoff in Cape Verde on the next sector.

The operator's procedures required that, where no load master was available, the first officer should complete the load form and the flight engineer should complete the takeoff data card. The commander was required to check the load form for accuracy and the first officer was required to check the takeoff data card. (These

procedures were the same as the crew had been using with their previous operator, and which had been adopted by the current operator.) The crew reported that no crosscheck had been made of the load form and data card prepared by the flight engineer. The crew attributed this to the commander's absence from the aircraft, distractions and time pressure.

It was noted that the takeoff performance calculations for the next takeoff in Cape Verde were based on a takeoff weight calculated using the same cargo weight as entered on the load form at Manston. The same flight engineer completed the load form for this sector. However, unlike the Manston takeoff, the data card (which on this occasion was completed by a different crew member) showed the same weight as the load and trim form, so takeoff safety speeds had been calculated using a weight which was in error by approximately 8,000 lb.

Flight crew information

General

The 55 year old commander had about 3,000 hrs on the DC-8 and in excess of 15,000 hrs total. The first officer was 60 years old, with 2,500 hrs on the DC-8 and also had in excess of 15,000 hrs total. The flight engineer was 62 years old and had 2,500 hrs on the DC-8, with 13,100 hrs total. All had held senior flight operations management posts with previous employers.

Flight crew training and licensing

The flight crew held valid licences issued by the General Civil Aviation Authority of the UAE, with type ratings for the DC-8. These had been accepted by the MoTCA's Civil Aviation Administration, which had then issued Afghan flight crew licences.

The commander's last simulator proficiency check was carried out whilst still with his previous company, on 12 April 2010. The date of his last flight on the DC-8 appeared to be in December 2009, and was certainly earlier than January 2010. He held a DC-8 Type Rating Examiner (TRE) authorisation, issued by the GCAA, and between 19 January and 8 August 2010, had conducted or taken part in a total of 22 details in the DC-8 simulator as instructor or examiner, most involving flight crews of other carriers.

The co-pilot last flew the DC-8 in December 2009. He next underwent a simulator proficiency check in the DC-8 simulator, on 5 July 2010. This was arranged and conducted by the commander of the incident flight, in his capacity as a TRE.

The flight engineer last operated the DC-8 on 20 December 2009. Between January and early August 2010 he also recorded a number of DC-8 simulator details, most of which involved instructing or checking of other operator's flight crews. His last recorded simulator proficiency check was on 12 April 2010, also whilst still with his previous company. His flying logbook recorded a simulator 'currency check' on 6 July 2010.

Apart from the co-pilot's proficiency check, none of the crew had undergone any operational training or checking since starting work for the operator in May 2010, nor had they been given any company induction training or familiarisation. At the time of the incident, the crew had not flown the DC-8 within the previous eight months, and were not current on DC-8 line operations.

Crew duty hours

Both crews had reported for duty at 0600 hrs on 11 August. The aircraft arrived at its Cape Verde

destination at 1630 hrs, a flight duty period of 10:30 hrs for the operating crew. The aircraft departed again at 1815 hrs for the flight to Buenos Aires, with the second crew as operating crew. Arrival in Buenos Aires was at 0315 hrs on 12 August. Thus the flight duty period for the second crew was 21:15 hrs. A form used by the crew to record crew duty hours and other operational data showed an incorrect start duty time of 0800 hrs with no entry for total flight duty time.

Computerised fuel planning

Computer flight plans (CFP) were examined for each of the three sectors: UAE to Manston, Manston to Cape Verde and Cape Verde to Buenos Aires. For the first two sectors, the flight crews had loaded significantly more fuel than that the minimum required - an extra 38% and 47% respectively. Aircraft weight was therefore much higher on these sectors than the weight used to generate the CFPs (which typically assume that minimum required fuel is loaded). As a consequence, the actual fuel burn figures for these sectors were in excess of that predicted on the CFP. However, the actual increases of about 28% for each sector appeared high. When the burn was corrected, using 'rule of thumb' figures, the actual burn appeared to be about 19% above expected, for both sectors.

The CFP did not contain factors to allow an accurate manual adjustment of fuel burn for aircraft weight, and the CFPs did not show any crew calculation regarding fuel burn figures. However, the load form for the incident flight did show an adjusted fuel burn figure (by about 6,600 lb - a reasonable adjustment).

The sector from Cape Verde was, according to the crew, the most limiting sector. The minimum fuel required on the CFP (146,000 lb) was loaded. As the cargo payload was less than that assumed on the CFP (by nearly 8,000 lb, even after the correct weight for the ponies is applied), the actual takeoff weight was below that assumed on the CFP on this occasion. Despite this, the actual fuel burn during the flight still exceeded the predicted burn, by some 9%. Flight levels achieved during the flight were close to those planned. The load form for the flight showed that the CFP predicted fuel burn had again been increased (by about 6,000 lb), even though the CFP takeoff weight was higher than actual.

Safety Assessment of Foreign Aircraft

The International Civil Aviation Organisation (ICAO) establishes minimum international safety standards and recommended practices for all aspects of civil aviation activity. Responsibility for ensuring that those standards are met rests with the State in which the aircraft is registered and, if different, the State in which the airline is based.

The Safety Regulation Group of the UK Civil Aviation Authority (CAA) is responsible for the safety regulation of UK-registered aircraft and UK-based airlines, but does not have regulatory responsibility for the safety of foreign aircraft and airlines. However, the UK Government's Department for Transport (DfT) takes a number of steps to ensure that airlines operating to the UK comply with international standards.

Before a permit is issued to a foreign airline to allow it to operate to the UK, the DfT checks that the airline has all the relevant approvals from the foreign government's regulatory authority and that certain other requirements are met. Where the DfT has reason to believe that an airline or aircraft may not comply with international standards it can arrange for that airline's aircraft to be inspected by the CAA in accordance with the European Community Safety Assessment of Foreign Aircraft (SAFA) programme. Where the CAA finds a matter

requiring attention it will be raised with the aircraft crew, airline and/or foreign authority as appropriate.

Safety action by DfT

On 27 August 2010 the AAIB informed the DfT's International Aviation and Safety Division of its concerns about the aircraft operation from the investigation to date. As a result of information gathered from a number of sources, the DfT then notified the aircraft operator that no further operating permits would be issued in respect of the operator's DC-8 fleet until the reasons for the incident were properly understood, and that any necessary corrective actions had been put in place. As required by applicable regulation[5] the DfT similarly notified the European Community of the measures it had taken.

In subsequent action, based on this event and at least one 'ramp check' in another EC member state, the European Commission added the operator of YA-VIC to its list of aircraft operators banned from operating in European airspace. This was confirmed in the updated 'Annex A' list published on 23 November 2010 by the European Commission, which also banned all air carriers under the oversight of the aviation regulatory body in the Islamic Republic of Afghanistan.

Organisational information

During the investigation, no evidence was forthcoming to show that the aircraft operator had exercised any meaningful operational control over its newly acquired DC-8 fleet. The commander at the time of the incident was the most senior member of the six flight crew, having held the position of Flight Operations Director with their previous operator. He was not promulgated as holding any flight management position with the operator but was, for all practical purposes, the fleet manager. There was no evident supervisory structure in place, so in effect the commander reported directly to the operator's Director of Operations.

It was understood by the investigation that the crew had not been interviewed for their post with the operator, nor had gone through any other selection process. The operator had not required further training or checking of the crew before releasing them to line operations, even though none of the crew had operated the aircraft 'on the line' since late 2009. It was not clear who, if anyone, was responsible for ensuring that the crew operated within applicable duty time limitations.

Safety action by operator and regulator

The aircraft operator

The aircraft operator conducted an internal investigation into the incident and produced a report. The report identified a series of failings on the part of the crew and identified remedial and disciplinary actions. Although the report did recommend revisions to the existing Crew Resource Management (CRM) training programme[6], it did not address organisational issues such as lack of formal training, supervision and operational control of the DC-8 fleet.

In response to the actions taken by the UK DfT and a recommendation by the MoTCA (see below), the operator notified AAIB of its intention to cease DC-8 operations as soon as practicable and to dispose of the aircraft and crews.

Footnote

[5] Article 6 of Regulation 2111/2005 of the European Parliament and of the Council of the European Union.

Footnote

[6] The flight crews had not undergone any formal company CRM training.

The Islamic Republic of Afghanistan's Ministry of Transport and Civil Aviation

In a letter to the aircraft operator, dated 28 September 2010, the MoTCA observed that the operator's DC-8s were aging aircraft which, although registered in Afghanistan, were not flying under the operational control of the operator, nor under the supervision and control of MoTCA. It was recommended that the operator cease DC-8 operations and remove the aircraft from the Afghan register. The operator's Air Operator's Certificate was subsequently re-issued with the two DC-8 aircraft removed from the Operational Specifications.

In October 2010, MoTCA's Flight Safety Department notified the aircraft operator that the Afghan flight crew licences for the three operating crew were to be revoked. Additionally, MoTCA required that the operator address the identified shortfalls in its CRM training programme and that anomalies in its Pilot Proficiency Check (PPC) system be addressed, with an updated PPC system to be submitted to MoTCA for approval.

ICAO Universal Safety Oversight Audit Programme

The ICAO Universal Safety Oversight Audit Programme (USOAP) aims to promote global aviation safety through the regular auditing of safety oversight systems in Contracting States. The mandatory programme entails some 40 safety oversight audits annually, with each ICAO member State required to host an audit at least once every six years. Specifically, the USOAP audits focus on the State's capability for providing safety oversight by assessing whether the critical elements of a safety oversight system have been implemented effectively. The audit teams also determine the State's level of implementation of safety-relevant ICAO Standards and Recommended Practices (SARPs), associated procedures, guidance material and practices. However, the ICAO confirms that, due to United Nations mission travel restrictions, it has not been possible to conduct a USOAP audit in Afghanistan of the state aviation regulatory structure.

Analysis

The FDR data suggests that the initial tailstrike occurred at about 11° pitch attitude, identified by a marked slowing of the rotation rate. As the AOM warned that tailstrike would occurr at 8.95° pitch, the aircraft had probably just become airborne when the tail skid contacted the runway. After the initial tail strike the right main gear struck the raised approach light.

The aircraft then continued to rotate as a result of the increased control input, causing the tail skid to contact the soft ground beyond the runway end. A second, lesser, reduction in pitch rate is evident on the FDR data at about 13° pitch, which probably marks the second tail strike. The time interval between pitch events is about 1.5 seconds, which is equivalent to the time the aircraft would have taken to travel the distance between start and finish of the ground marks at the liftoff speed.

Therefore, the tailstrike most probably occurred because of a deviation from the correct rotation technique, probably an instinctive reaction on the part of the commander to the rapidly approaching runway end. The overweight takeoff was thus a major contributory factor, and the lack of recent aircraft handling experience is also likely to have contributed.

Collectively, the flight crew was responsible for ensuring that the aircraft met the applicable performance requirements for takeoff, but this was not done. Although lacking recent experience on type, each of the operating and positioning crew were experienced on type and familiar with the requirements. Despite

this, the takeoff performance limiting weight was not checked, the allocation of tasks was incorrect and no crosscheck of the flight engineer's calculations took place. The crew cited the commander's distractions and time pressure as prime reasons, but with nearly four and a half hours between crew report and departure, and with other qualified crew members available, there should have been ample time and opportunity for the correct procedures to be followed and crosschecks to be made. The operator's observations regarding CRM training, made in their report on this incident, appear valid.

From the accounts of the flight and ground crews, it is clear the aircraft weight on the onward flight from Cape Verde was the crew's main concern. The difference between load-form weight and that used for calculating takeoff speeds exactly equates to the difference between pony weights, which strongly suggests that the crew knew the load form to be inaccurate, particularly as the correct pony weight of 450 kg was shown on the cargo manifest and air waybills. It is likely that their concerns over the next sector occupied the crew to the extent that they were diverted from the immediate task of ensuring safe takeoff performance at Manston.

The situation was exacerbated by the loading of significantly more fuel than required, even when due allowance was made for inaccurate CFP figures, which the crew seemed to be familiar with from previous experience and which probably influenced their decision.

No evidence was presented to the investigation that the aircraft operator exercised meaningful operational control over the flight. The crew had not received further training by the operator, the commander and flight engineer had not completed proficiency checks since starting employment with the operator and there was no formal supervisory structure in place. Flight support functions appear to have been vested wholly in the commander in his unoffical capacity as fleet manager. It was not clear who had responsibility for flight crew rostering and duty times, but the second crew had completed an excessively long duty period by the time the aircraft landed in Buenos Aires, with safety implications.

The MoTCA had ultimate safety oversight of the aircraft operator. However, it would appear unlikely that it exercised oversight of the introduction of the operator's DC-8 fleet, as the organisational shortcomings exposed by this incident should have been evident. Although the MoTCA susbsequently identified, in its letter to the operator, that operational control of the small and ageing DC-8 fleet was lacking, the MoTCA should have satisfied itself in this regard prior to approving the addition of the fleet to the operator's AOC. Therefore, the following Safety Recommendation is made:

Safety Recommendation 2011-006

It is recommended that the Ministry of Transport and Civil Aviation (MoTCA) review its processes for the regulatory oversight of commercial aircraft operators based in the Islamic Republic of Afghanistan.

When foreign states seek to satisfy themselves that applicable international standards have been met, they are dependent upon the regulatory authority in the State concerned exercising effective oversight of the airlines within that state. In this case, the operator was in posession of the required approvals from the MoTCA and thus there was no evident reason for UK DfT to withold an operating permit. ICAO, through its Universal Safety Oversight Audit Programme, carries out auditing of safety oversight systems in Contracting

States but, as described earlier, United Nations travel restrictions have prevented an ICAO USOAP audit in Afghanistan and a number of other States. The following two Safety Recommendations are made:

Safety Recommendation 2011-007

It is recommended that the International Civil Aviation Organisation (ICAO) establish an alternative to the USOAP (Universal Safety Oversight Audit Programme) procedure for those states, such as the Islamic Republic of Afghanistan, where security, or other, concerns prevent regular on-site auditing.

Safety Recommendation 2011-008

It is recommended that the International Civil Aviation Organisation (ICAO) conduct an aviation safety oversight audit of the Islamic Republic of Afghanistan.

As noted earlier, the operator in this case presented to the UK DfT the required approvals from the MoTCA and thus there was no evident reason for UK DfT to withhold an operating permit; this process is conducted by the DfT in the United Kingdom in a similar manner to that in other EU States. However, it is clearly less reliable as a measure of safety oversight when dealing with operators based in States where the ICAO USOAP process does not confirm an acceptable level of safety oversight. The following Safety Recommendation is made:

Safety Recommendation 2011-009

It is recommended that the UK Department for Transport (DfT) review their process for the issue of permits to aircraft operators where the ICAO auditing system does not provide an appropriate level of confidence in the State's regulatory oversight.