

INDIVIDUAL HISTORY

VICKERS VALIANT B (k) Mk.I XD818/7894M **MUSEUM ACCESSION NUMBER 1994/1352/A**

Built by Vickers- Armstrongs to contract 6/Aircraft/9446/CB.6(c) dated 20 April 1953, which was for 38 aircraft, serial numbers XD812 - XD875. Built as a bomber with provision for conversion to the tanker role.

- 04 Sep 56 First flight.
- 08 Sep 56 Noted at Vickers' airfield at Wisley, newly constructed and presumably undergoing flight trials.
- 14 Nov 56 Awaiting collection.
- 14 Nov 56 To A Flight, No.49 Squadron, Wittering, Northants - one of 10 RAF Squadrons to operate the Valiant from 1955. No.49 Squadron had re-formed with Valiants in May 1956, and was being equipped for a new role. The delivery flight from Wisley to Wittering on this date is recorded in the flying logbook of signaller Sgt B D Matthews (Photocopy with DoRIS). Flight time 35 minutes.

XD818 was one of eight Valiants specially modified by Vickers for involvement in Operation `Grapple' - the testing of Britains' first H-bomb. The modifications included measures to protect the aircraft and crew, instrumentation for scientific operations and the addition of extra and special equipment for navigational and bombing requirements. For drawing of XD818 with all these modifications, see Eric Morgan's Vickers Valiant (AeroFax) pp.75-76.

XD818 was the first of these specially equipped Valiants to be delivered to No.49 Squadron and became the personal aircraft of the Squadron CO, the late Wing Commander (later Group Captain) Kenneth G Hubbard OBE DFC AFC, who passed away 22 January 2004, and the ensuing operations are fully described and illustrated in his book `Operation Grapple' (DoRIS Ref.016805). The modified aircraft carried metal anti-flash screens for the crew and bomb bay cameras to record the bomb drop characteristics.

- 21 Nov 56 Wg Cdr Hubbards' first flight in XD818 - a short test flight. This and his other flights in '818 are recorded in the microfilm copy of his logbook for that period, DoRIS Ref.MF10014/16.
- 03 Dec 56 Sgt B D Matthews' logbook records a 6-hour nighttime cross-country flight with his usual pilot, Flying Officer Sinclair `Tiff' O'Connor.
- 03 Mar 57 Wg Cdr Hubbard flew XD818 from RAF Wittering to the Christmas Island base via RAF Aldergrove, Northern Ireland (refuelling stop), Goose Bay (Newfoundland), Namau, Travis AFB California, Honolulu (Hawaii) and hence to Christmas Island, a coral atoll in the South-west

Pacific (now known as Kiritimati), base for the tests which involved at this stage four No.49 Squadron Valiants including XD818. XD818 arrived at Christmas Island 12 Mar.

- 11 May 57 Dropped 10,000lb high-explosive bomb.
- 15 May 57 XD818, piloted by Wg Cdr Hubbard OBE DFC, dropped Britain's first live H-bomb (thermo-nuclear fusion device), a Green Granite device within a Blue Danube ballistic case weighing 10,000lb (4,536kg) off Malden Island, 400 miles south of Christmas Island, which was an air burst yielding 150 to 200kt. For this drop the codename was 'Short Granite', the drop occurring at 11.38 local time from a height of 45,000 feet (13,716m). The crew boarded the aircraft at 0750, taking off at 0900, making a navigation run over the target to check the accuracy of the navigation equipment, followed by a dummy run, followed by the live run at Mach 0.76. For Photos see RAFM P014236/7, P015196/7, P016369, P014500(C) and P016783; also Aeroplane Monthly Jan 96 p.64. For photo of W/Cdr Hubbard and his crew boarding XD818 – Vickers Valiant (Morgan, AeroFax) p.78.
- 21-26 Jun 57 Return flight to RAF Wittering.
- 05 Jul 57 High level bombing over Jurby ranges - 12 x 100lb practice bombs dropped. See Sgt Matthews' log book.
- 3 & 5 Sep 57 XD818 took part in flypasts at the SBAC Farnborough display which included another Christmas Island Valiant and two Vulcans. Photo: Flight 6 Sep 57 p.396. Mentioned in logbook extract of Flt Lt Brown, DoRIS Ref.B3737.
- 12-13 Sep 57 Flew Wittering - El Adem (Libya) and return on practice bombing flight.
- 06 Oct 57 Wg Cdr Hubbard flew XD818 from Wittering for further weapons drops at Christmas Island, following a similar route to the first exercise, arriving on 11 Oct for operation 'Grapple X'.

Photo album with colour shots of XD818 and its ground crew on Christmas Island acquired 1999- DoRIS ref. X001-2370/010
- 13 Nov 57 Wg Cdr Hubbard flew XD818 back to Wittering, arriving 18 Nov, one day late, after a hold-up through weather conditions at Travis AFB.
- 11 Dec 57 Trial flight with Bomber Command Devt Unit. See Sgt Matthews' log book.
- 1957/58 After 'Grapple X' flew three bombing trips to El Adem, each time carrying 18 x 100lb practice bombs, since visual bombing in the UK was expensive on flying hours for bombs dropped.

- 30 Jan/
01 Feb 58 Cross-Country flight Wittering - Kinloss and return. See Sgt Matthews' logbook.
- 19 Mar 58 With Wg Cdr Hubbard again at the controls XD818 took off from Wittering for Christmas Island, arriving on 23 Mar, for operation Grapple Y, for a further live drop (by another Valiant), diverting to McClelland AFB California due to bad weather.
- 28 Apr 58 Live drop, of the largest nuclear device ever dropped by the British, with XD818, pilot F/ Lt T E B Chambers, orbiting 50 miles (80km) from the drop position.
- 04 May 58 XD818 left for Wittering from Christmas Island, completing the 9000nm journey on 9 May.
- 07 Jul 58 3¼-hour practice bombing Flight - 2 x 100lb bombs dropped from 40,000ft over Orfordness. See Sgt Matthews' log book.
- 23 Jul 58 Wg Cdr Hubbard took off for Christmas Island from Wittering for Operation Grapple Z, arriving 27 July.
- 08 Aug 58 XD818 flew to Honolulu to collect AVM John Grandy, Commodore of the Grapple Task Force.
- 30 Aug 58 2 hour 2 minute Grandstand rehearsal flight from Christmas Island - See Sgt Matthews' logbook.
- 26 Aug 58 Took off from Wittering at 13.45 for two-hour air test. Captain F/Lt Tom Chambers. Nav/Radar Ron Piper.
- 02 Sep 58 XD818 acted as `grandstand' (observation) aircraft for the live drop by Valiant XD822 `818 being flown by Flt Lt S. O'Connor. The first live drop using blind radar technique. Flight time 1hr 45 minutes. See log book of Sgt B D Matthews (Copy in DoRIS) codename `Flagstaff'.
- 18 Sep 58 XD818 left Christmas Island for return to Wittering, arriving 23 Sep.
- 21 Oct 58 XD818, piloted by Wg Cdr Hubbard, led a formation flight of three No.49 Squadron Valiants during a visit to RAF Cottesmore by HRH Princess Margaret, with a dress rehearsal on 17 Oct.
- 01 Dec 58 With the decision to end the `Grapple' Tests, No.49 Squadron reverted to its standard bomber role, and the aircraft was demodified from `Grapple' standard, Wg Cdr Hubbard last flying XD818 on 3 Dec. Training flights including `Lone Rangers' and navigation exercises continued, including a detachment to Malta March/April 1959. See file letter from W F Caple 11 Dec 1994.
- 1 Dec 58 Took off at 14.15 for 3 hr 5 mins continuation flying flight. Capt F/Lt Tom Chambers.

- 02 Jan 59 The Aircrew Flying Logbook of navigator S/Ldr W. Radice (held by the RAFM) records a four-hour navigational exercise flight piloted by Wing Commander Broadbent, taking off at 11.16am.
- 26 Jan 59 Ron Piper logbook records F/Lt Tom Chambers (Capt), Dave Brook (Co-Pilot), Ron Piper (Nav RAD) Alan Thompson (Nav Plotter) and Arthur Ward DFM (AEO) flight Wittering – El Adem; 27 Jan El Adem to Eastleigh (Nairobi); 29 Jan Eastleigh to Khormaksar (Aden); re-routed to Bulawayo for a flypast to commemorate Bulawayo's centenary celebrations, flying to Salisbury (Rhodesia) 30 Jan, with a low-level flypast at Bulawayo the following day. Hence 2 Feb 59 Salisbury to Eastleigh; 3 Feb Eastleigh to Embakasi, and on to El Adem; 4 Feb 59 El Adem to Marham for customs clearance, then on to Wittering.
- 13 Feb 59 Detached for 'Sunspot' long-distance navigation and visual bombing practice exercise over Maltese and Libyan ranges.
- 06 May 59 4-hour practice bombing flight - 8 x 100lb practice bombs dropped. See Sgt Matthews' log book.
- 29 May 58 Continuation Flying, taking off at 13.10 from Wittering; 3hrs 45 minutes, Captain F/Lt Tom Chambers. (File Note - Ron Piper, Nav Radar)
- 05 Jun 59 Damaged Cat 3R.
- 17 Jun 59 Returned to No.49 Squadron, repairs completed.
- Sep 59 Displayed statically at Battle of Britain Display at RAF St.Athan. Photo: Jackson, V-Bombers (013299).
- 20 Sep 59 Participated in BoB display at Amberley. Pilot Sqn Ldr Caillard. See Sgt Matthews' log book.
- Sep 59 Four Valiants including XD818 flew to Australia for Queensland Centenary celebration, route via Akrotiri - Karachi - Kananike (Ceylon) - Kuala Lumpur - Darwin.
- 5 Oct 59 Instrument Rating test for Station Commander, Gp Capt. Boxer; two hours.
- 23 Nov 59 To Vickers at Hurn (Bournemouth) for modifications, including removal of 'Grapple' modifications.
- 26 Jan 60 Modifications complete.
- 01 Feb 60 Returned to No.49 Squadron.
- The logbooks of Air Electronics Officer Sgt A.J.McIntyre (DoRIS AC1997/101) record a number of flights on XD818 between Feb 1960 and June 1961.

- 01-12 Mar 60 Detachment to Akrotiri (Cyprus) for bombing practice flights using 1000lb bombs at El Adem ranges. Recorded in Sgt B D Matthews' logbook, and also that of observer Squadron Leader D.W. Padbury, ref. X001-2362/035-036. Pilot was S.L. Gordon.
- 22 Mar 60 Akrotiri; transit to Tarhuna bombing range at El Adem, Libya. (Chambers/Piper) Dropped six 1,000lb bombs, returning to Akrotiri. Flying time five hours.
- 12 Apr 60 Took off from Wittering at 18.14 for 5hr 40 min exercise; Capt. F/Lt Tom Chambers; Nav Radar Ron Piper.
- 4 May 60 Flew Wittering - Luqa for exercise Regex - see Padbury logbook.
- 9 May 60 Returned to RAF Cottesmore from Luqa.
- 13 May 60 Participated in Bomber Command Bombing Competition - see Sgt Matthews' log book.
- 13 May 60 Other flights to El Adem and Akrotiri ('Lone Rangers') and 'Western Rangers' to Offutt SAC HQ, Nebraska. Also 'Ranger' flights to Salisbury, Rhodesia. The El Adem flights occurred 13-17 May 60. (See Sgt Matthews' log book.)
- 15 Sep 60 Flew to Jersey Battle of Britain Air Display, with a recce flight for the display the previous day (McIntyre logbook)
- 17 Sep 60 Battle of Britain display - Padbury logbook X001-2362/035.
- Sep 60 Used for conclusion of 'Sunspot' exercises.
- Late 60 To St. Athan for major inspection.
- 3 Oct 60 Flew Wittering - Goose Bay and on to Offutt AFB, Nebraska the next day - Padbury logbook. Returned via same route 6-7 October.
- 29 Oct 60 Took off at 11.00 for 5 hrs 5 mins Radar Bombing sortie (RBS). Capt F/Lt Tom Chambers.
- 7/9 Nov 60 Padbury logbook records exercise Kingman flight to Pershore and a cross-country flight.
- 8 Nov 60 Took off at 10.42 from the dispersal airfield at Pershore, Worcs for a 5 hrs 20 mins RBS cross-country flight. Capt F/Lt Tom Chambers.
- 02 Jan 61 To BAC, Filton (Bristol) for further modifications. Photo - Out of The Blue No.6 p.5. Left Wittering at 12.07hrs; Capt F/Lt Tom Chambers, Nav Radar Ron Piper.
- 08 Feb 61 Modifications complete.

- 10 Feb 61 Returned to No.49 Squadron at Wittering.
- 21 Mar 61 5 hr 55 minute flight from Wittering; Captain Tony Alder, Co-Pilot Paul Tilling. Nav/Radar Ron Piper.
- 14 Apr 61 Bombing at Jurby ranges - McIntyre logbook.
- 26 Apr 61 Logbook of F/Lt R.G. Paveley (DoRIS microfilm) records the first of four flights in XD818 by Paveley, on this occasion of 2.40 hours duration for the Squadron Commanders check flight for this newly posted second pilot. Pilot Wing Commander Chamberlain, Squadron Commander.
- 5 May 61 Took off at 07.17 for Lone Ranger to Tarhuna, El Adem including eight 100lb practice bombs. Seven-hour flight; Captain F/Lt Alder.
- 8 May 61 Took off at 08.40 for 2hr 30 minute flight to Tarhuna, dropping eight 100lb practice bombs. At 14.06, left El Adem for Wittering on 4hr 45 minute flight; Captain F/Lt Alder.
- 26 Jun 61 No.49 Squadron moved to RAF Marham, Norfolk, joining three other Valiant Squadrons there (No's 148, 207 and 214) - part of a 'Tactical Bombing Force' allocated to NATO Supreme Allied Commander Europe (SACEUR).
- 16 Jul 61 Allotted to Vickers/32 MU for modifications at Hurn, converting the aircraft to tanker configuration, being given a refuelling probe in the nose and provision for a hose-reel pack in the bomb bay as one of 45 BkI Valiants with in flight refuelling capacity. Valiants formed the UK's only in flight refuelling tanker force at this time.
- 28 Jul 61 Cross-country flight - 5.35 hours (Paveley Logbook). Pilot F/L Wildgust.
- 12 Sep 61 Scramble take-off at 07.29 as part of Exercise Checkmate; 4 hr 30 minute flight; Captain F/Lt Alder.
- 17 Oct 61 Paveley logbook records 6.15 hour flight for exercise Titton; pilot again F/L Wildgust.
- 2 Nov 61 Paveley logbook records 5.35 hour cross-country flight; pilot F/L Wildgust.
- 5 Jan 62 2hr 20 minute continuation flight from Wittering; took off at 11.05; Captain Faulkner.
- 16 May 62 Took off at 13.47 for 4 hr 20 minute RBS and Lone Ranger flight-first stage to Luqa, Malta. Capt F/L Alder; Nav/Radar Ron Piper.
- 17 May 62 Took off from Luqa at 10.54 for 6 hr 15 mins flight to Nairobi, Kenya.

- 19 May 62 Nairobi to Salisbury (Rhodesia), taking off at 07.48 for 3hr 55minute flight.
- 22 May 62 Salisbury to El Adem; 5 hr 35 min flight to El Adem, taking off at 09.44.
- 23 May 62 Took off from El Adem for 6hr 10 minute flight back to Marham.
- 26 Jun 62 Took off from RAF Marham at 21.05 for 5hrs 15 minutes RBS sortie, Captain Sqn. Ldr Alder. Nav/Radar Ron Piper.
- 27 Sep 62 Modifications complete.
- 28 Sep 62 Returned to No.49 Squadron, which had been declared operational in the tactical role.
- 07 Nov 62 Accident Card records aborted take off at Marham due to aileron problems, causing overheated brakes.
- 01 Feb 63 Accident Card records Lightning strike shortly after take-off from Marham. No damage.
- 29 Jul 63 Damaged - Cat 3R. Repaired on site by No.60 MU.
- 31 Jul 63 Repairs complete.
- 01 Aug 63 Back on charge with No.49 Squadron.
- 26 Aug 63 Navigator's Logbook of Air Cdre John Langston (see Valiant file) records 6.05 hr flight from Marham to Goose Bay, Labrador – pilot Flt Lt Sparrow. Same pilot for all flights on this detachment.
- 27 Aug 63 Langston logbook records onwards flight of 5.45hrs to Offutt USAF Air Base, Nebraska.
- 29 Aug 63 Langston logbook records 4.50 hr return flight from Offutt to Goose Bay.
- 30 Aug 63 5.15hr flight, Goose Bay – Marham (Langston LB)
- 29 Oct 63 Further Cat 3R Damage. Repaired on site by No.71 MU.
- 16 Dec 63 Repairs complete. Returned to No.49 Squadron. Which, from 1964, became part of the Marham Wing.

From 1963 some Valiants, including XD818, lost their white anti-flash colour scheme in favour of regular grey-green camouflage and were assigned to low-level tactical conventional bombing duties as part of NATO forces. Supreme Allied Commander Europe (SACEUR) in defence of the Continent. This was a reaction to improving Soviet anti-aircraft missile and radar technology necessitating a change in tactics.

In a very short time the Valiant fleet was suffering problems due either to the stresses of low level flying causing metal fatigue to the main wing spars or age hardening of the alloy in the spars causing them to become brittle (See file letter by Pete Sharp. 16 Nov 94).

Either way in 1964 after one fatal crash (WZ363, May 1964) and one close call where only superb piloting avoided disaster (WP217) it was discovered that the rear main spar was breaking where it bifurcated around the jet pipes, which in the case of the near disaster caused the flap drive to disengage resulting in the aircraft initiating a severe uncommanded roll.

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| 21 Feb 64 | 5.25 hour low-level training flight by Flt Lt N.R.J (Jock) Wingate and crew-see logbook extracts on file |
| 24 Feb 64 | 5.25hr flight 'Limited Stage'; Pilot F/Lt Sparrow (Langston LB) |
| 26 May 64 | 5.30 hour transit from RAF Marham to Goose Bay, Labrador – Wingate logbook |
| 27 May 64 | 2.10 hour low-level training flight, Labrador (Wingate Logbook) |
| 28 May 64 | 2.25 hour low-level training flight, Labrador (Wingate logbook) |
| 30 May 64 | 5.30 hour return flight, Goose Bay, Labrador to Marham (Wingate logbook) |
| 23 Jun 64 | 5.15 hour Co-op exercise and standardisation flight, Wingate logbook |
| 26 Jun 64 | Airframe repairs; 2,402 flight hours to this date. |
| 16 Sep 64 | 2.05 hour Night Continuation training flight (Wingate logbook) |
| 17 Sep 64 | Airframe assessed as (Cat `A' Flyable to 95% of remaining fatigue life). Repainted into low-level camouflage that month. |
| 24 Sep 64 | Observer's logbook of Sqn Ldr John Perigo (X002-6202/002) records two hour night practice flight, taking off at 18.15. |
| 04 Nov 64 | The entire Valiant fleet had its flying hours drastically reduced from this date, due to these wing spar problems. XD818 flew on this date, taking off at 1700 hours flown by Flt Lt J Cartwright.

At the end of this training sortie XD818 had achieved 2542 flying hours and completed 1119 landings in 636 flights. |
| 09 Dec 64 | XD818 was still flying - on this date it made a cross-country flight captained by Flt Lt Pettit (see File Letter from Pete Sharp, 16 Nov 94); Navigator John Langston. Flight time 2.15hrs-crew check, taking off at 12 noon. |
| 11 Dec 64 | All Valiants officially grounded. |

- Dec 64 Decision taken to restrict the Valiant fleet to fast taxiing down the runway at up to 90 knots before returning to Squadron dispersal for rectification and a before-flight servicing. This maintained the serviceability of the aircraft and the currency - and eligibility for flight pay - of the aircrews, and a nominal QRA commitment. This included carrying out all the procedures for planning a hypothetical sortie: met briefing, flight and fuel plans, target planning and even eating the pre-flight meal. The aircraft would then be taxied round the airfield. At this time the V-Force still had 43 Valiants, 69 Vulcans and 32 Victors, so loss of these Valiants was a considerable blow.
- Although repairs were possible the Government decided against them as an economy measure, and the whole fleet was scrapped, mostly at Marham.
- 26 Jan 65 XD818 withdrawn from use, with cessation of QRA, ending of all Valiant training, and disbandment of No.214 Squadron.
- 07 Feb 65 Operation order received for disarming and scrapping of the Valiant fleet.
- 17 Feb 65 Placed on disposal account.
- 01 Mar 65 Struck off charge, to remain at Marham for 'Exhibition Purposes'. Total flying hours 2,560.
- 1 May 65 No.49 Squadron disbanded.
- 25 May 65 Unveiled by Sir Dennis Spottiswood after a brief ceremony and placed on display inside the camp at RAF Marham outside the Operations Wing HQ building. Photos: RAF Gate Guards - Simpson (025340) and V-Bombers - Jackson (013299); RAF Marham - Delve - (028060); Aircraft Illustrated Mar 73 p.127 (colour); Flypast Sep.97 p.76; Canberra - The Operational History (023533) p.72.
- 14 Oct 65 Allocated 7894M.

Whilst displayed at Marham, still in its low-level camouflage scheme, the aircraft was well cared for by volunteers and was retained with the aim of eventual inclusion in the Royal Air Force Museum.

- c.16 Aug 73 Moved to Marham's hangars for inspection and removal of the 4 Avon engines by Rolls-Royce for re-use in a programme of exporting refurbished Avons to Switzerland for use in the Swiss Air Force Hawker Hunter fleet..
- Jun 74 Following removal of the engines the airframe was repainted, again in the low-level camouflage colours of No.49 Squadron. Work organised by the aircraft's then custodian, Chf Tech Timbers.
Photo - RAF News week ending July 6th 1974 p.13. Colour photo, 1978; Wrecks and Relics – The Album p.107

- 80 Voluntary refurbishment work over a three-year period begun by Sgt. Pete Sharp, who had previously serviced this Valiant at Marham up to the time of its last flight. Seats overhauled by the Marham ejection seat bay, and missing radio equipment replaced by items from scrapped Vulcans.
- Mar 82 With construction of the new Bomber Command Museum at Hendon underway, XD818 was moved from its display spot by a team from RAF Abingdon and towed to No.5 Hangar at Marham for dismantling prior to road transport to Hendon. Photos: Control Column May 82 p.66; Air Clues June 1982 p.230-231.
- 10 Jun 82 Fuselage moved from Marham to Hendon, followed by the wings on the 19 and 26 June. See Photos in DB70 (Photo Section) and Control Column Feb 83 p.12.
- Oct 82 After reassembly, repainted in original anti-flash white by team from RAF St.Athan. The aircraft remained on display in the Bomber Command Hall until July 2005. Photo as assembled but prior to repainting - FlyPast Sep 85 p.66. Photo on display, repainted; Royal Air Force Yearbook 2005 p.74.
- 2 Aug 2005 Dismantling underway by RAF Team ready for road transport to new Cold War building at RAFM Cosford (photos, Flypast October 2005 p.5; Aeroplane October 2005 p.7; Aviation News October 2005 p.778);
- Nose section transferred 18 August, (photo, Flypast October 2005 p.5) with the final major load-fuselage and outer wing panels – departing for Cosford 1 September 2005. See also Wingspan International 31, pp.66-71 and ‘The Flying M’ Summer/Autumn 2005 p.16. Reassembled from 6 January 2006. Photos- Flypast May 2006 p.16; Wrecks and Relics 20th Edition; Aircraft Illustrated March 2006 p.25.
- 5 Jun 2006 Moved into new National Cold War Exhibition building, which opened to the public 8 February 2007. Photos on display – Aeroplane March 2007 p.12; Flypast March 2008 p.61; Aviation News April 2015 pp.36-37.

Of the 104 Valiants produced (plus three prototypes) XD818 is the sole complete survivor, although four nose sections, all BK Mk.1 versions, still survive:

- XD816 Last Valiant to fly (1968). Dismantled at Abingdon c. Aug 70. On loan by Royal Air Force Museum to Brooklands Museum, Weybridge, together with a main undercarriage leg from the same aircraft. The RAFM also has two Avon jets from the same aircraft.
- XD826/7872M Ex NBS training, Feltwell, 1965. Full front fuselage – largest extant Valiant section other than XD818. The Cockpit Collection, Rayleigh, Essex as ‘WZ826’.

XD857 SoC 5 Mar 65. Formerly at Manston History Museum, Kent;
Flight deck only-not full nose section. To Norfolk and Suffolk Aviation
Museum 18 October 2005.

(XD860 Was at DERA, Farnborough, Hants. Now scrapped)

XD875 SoC 9 Nov 62 after accident. Last Valiant built – first flight from
Weybridge 27 Aug 57. Highland Aviation Museum from Oct 2003.

TEXT - ANDREW SIMPSON