Handley Page

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VICTORS IN R.A.F. SERVICE

The Victor is the latest of an unbroken line of large Handley Page aircraft which have served the Royal Air Force from its inception. It originated more than forty years ago during the Great War with the H.P. O/400, the world's first big bomber.

With the advent of the Victor and in the light of Britain's future defence plans (which see no need for any new bombers), Handley Page may claim to have produced the first and the last bombers to serve the R.A.F.

On entering full operational squadron service the Victor has become Britain's premier V-bomber. The Chief of Air Staff underlined this opinion when publicly discussing the Victor. He said: "I would say it is as good as anything in the world - probably better for the specific task which it has been built for than anything in the world."

The Victor has emphasised its exceptional capabilities by going through the sound barrier without the slightest untoward effect on a routine test flight. It is the largest aeroplane in the world to have exceeded the speed of sound.

A recent signal from Air Vice-Marshal K.B.B. Cross, Air Officer Commanding No. 3 Group R.A.F. Bomber Command, received by Sir Frederick Handley Page typifies the R.A.F.'s opinion of its new bomber: VICTOR INTENSIVE FLYING TRIALS ENDED AS PLANNED REPEAT AS PLANNED YESTERDAY STOP THIS SUCCESS IS A GREAT TRIBUTE TO THOSE WHO DESIGNED AND BUILT

THE VICTOR AND I SEND YOU CONGRATULATIONS FROM THE AIRCREW AND AIRMEN WHO FLY AND SERVICE THEM STOP

Development History

In the autumn of 1945 a group of British scientists went to Germany to study that country's research into swept-wing aircraft. Among them was Mr. G.H. Lee, Handley Page's deputy chief-designer.

Based on his conclusions Handley Page submitted to the Air Ministry a study for a long-range, high-speed, four-jet bomber. A specification was issued on 1st January, 1947. To this the H.P. 80 was designed.

It called for a long-range strategic bomber to carry large and varied loads and operate at near-sonic speed at very high altitude.

In comparison with bombers at that time the new aircraft had to be $2\frac{1}{2}$ to 3 times more effective in altitude, speed and range.

Faced with the problems of this exacting specification, Mr. R.S. Stafford, Handley Page's technical director, set up a small team to make an exhaustive aerodynamic study of the problem. Mr. G.H. Lee was appointed to lead it. At the same time, Mr. C. F. Joy, chief designer, was concerned with complementary structural, aerodynamic and installation problems.

These men decided that the crescent wing offered the best working compromise between the conflicting requirements of high performance and good low-speed qualities. Conclusions of their design study have been amply justified in practice. The crescent-winged Victor provides superior high-subsonic range performance at greater altitude than the alternative layouts of high sweep with low-aspect ratio or small sweep with thin wings.

The crescent shape permitted the use of large wing-thickness for the highly-swept centre-wing - so important for structural and stowage considerations - with a reduced sweep for the thin outer-wing to ease tip-stall problems. With the provision of leading-edge flaps on the outer wing, the Victor's crescent wing showed fully-acceptable stalling characteristics.

To sum up, the crescent wing combines the virtues of delta, straight-swept and razor-thin straight wings whilst avoiding their shortcomings.

Thus the Victor, for all its trans-sonic ability, remains docile and fully controllable at low speeds. In addition, the combination of high tail and crescent wing enables it to round out and land with ease.

Another decision taken at an early stage was to use fully-duplicated power controls. The behaviour of manually-operated systems was uncertain when flying at high Mach numbers. There have been no serious control difficulties at any stage in the development of the Victor.

During 1947 a contract was issued for a prototype powered by four Metro Vick F 9 jet engines of 7,500 lb. thrust each. Although this project differed in many ways from the present Victor, the same pronounced crescent wing was incorporated and the Victor configuration was evolved as a result of wind-tunnel testing, design and development.

A direct outcome of this development are some of the following characteristic features of the Victor:

The high, all-moving tail provides exceptionally good elevator-control from the stall to sonic speed. In combination with the crescent wing it enables the pilot to perform the round-out manoeuvre on landing with the mimimum of supervision. In its high position the horizontal tail surface is outside the influences of jet efflux and shock effects from the wing or fuselage at high-subsonic speed.

Artificial control forces are provided to give the pilot instinctive feel.

Powerful air brakes on the sides of the rear fuselage give accurate control in the dive or on the approach glide with no effect on trim.

The large bomb-bay is unobstructed by the wing structure.

Eight-wheeled-bogey main undercarriages fold into the wings

without excrescences, providing exceptionally long stroke for shock absorption and wide spread of the wheel loads on the ground.

Unusually large ailerons confer on the aircraft exceptional rolling performance.

To prove the crescent wing a research aircraft - the H.P. 88 - was built. Small-scale Victor wings and tailplane were designed to fit the fuselage of a Supermarine Attacker. Construction of this aircraft was entrusted to the Blackburn and General Aircraft Co. From it it was hoped to get data which would be of help in the design of the Victor. However, due to unavoidable delays, the H.P. 88 was not ready for flight until June 1951 and by that time the Victor prototype was being built.

Another research aircraft used in developing the Victor was a Hastings fitted with two Sapphire engines in the outboard positions. On test flights it flew comfortably at 175 knots on only one Sapphire at normal cruising power.

The first prototype Victor (WB 771) was built at Handley Page's Cricklewood works. With its fuselage disguised as a boat hull under a huge canvas cover and mounted on a reinforced wheeled-bogie, it was towed in June 1952 by road to Boscombe Down where final assembly was completed.

It was in the week before Christmas that the Victor began its taxying tests. Bad weather prevented the first flight from taking place before Christmas Eve, 1952, when it was piloted by Squadron Leader H.G. Hazelden with Mr. I.K. Bennett as the flight observer.

The Victor's first public appearance was in July 1953 at the R.A.F.'s Coronation Review when it flew in salute past the Queen at R.A.F. Odiham.

Victor development was held up temporarily in July, 1954, when the first prototype was lost. A second (WB 775) flew soon afterwards and progress continued apace. This was demonstrated in April 1955 when the Hon. George Ward, then Under-Secretary of State for Air, flew the Victor close to the speed of sound and climbed to more than 50,000 ft.

The first production aircraft flew on the 1st February, 1956, and differed only slightly from the prototypes. In comparison, its tailplane was a little lower, the dorsal fillet removed and the fuselage length slightly increased.

Production aircraft were delivered to the Aeroplane and Armament Experimental Establishment, Boscombe Down, during 1956.

The Victor is now equipped for flight refuelling and can carry large underwing drop-tanks.

Orders have been placed for an even more powerful version with Rolls-Royce Conway jet engines. Its potential is further increased by rocket-assisted take-off and the powered stand-off bomb which is released at a great distance from the target and guided to its objective.

Victor Testing

The Victor owes much of its aerodynamic and structural efficiency to the work of Handley Page's modern research facilities. In wind tunnels and test house is carried out a vast programme of research combined with exhaustive testing.

Handley Page's test house, for the proving of structures and systems, is a modern building which gives 36 ft. clearance over a 30,000 sq. ft. floor.

The main structural test frame, designed by Handley Page technicians, is 50 per cent wider and higher than its equivalent at R.A.E. Farnborough. It applies a maximum load of 400 tons and is capable of housing a complete Victor.

Loads are applied by a hydraulic system which is electrically controlled. Measurement of the applied loading is by an independent hydraulic circuit. Strain-gauge measurements in test specimens can be recorded on 2,500 channels.

A smaller frame, similar to the first, in this test house has been used to prove the Victor's tail unit and smaller structural components.

For pressure testing of the Victor's cabin a water tank 42 ft. long and 14 ft. wide and deep was used. This was the first of its type in Britain and was constructed originally for the Hermes 5.

Before Handley Page's transonic tunnel - powered by three Rolls-Royce Nene turbo-jet engines - was completed at Radlett in July 1953, its high-speed tunnel tests were undertaken at R.A.E. Farnborough. For the low-speed range, Handley Page continues to use its other wind tunnel.

Training the R.A.F.'s Crew Chiefs

A Victor instructional school at Handley Page's Radlett aerodrome has trained more than 400 R.A.F. technicians. As it is within a few yards of the final-assembly lines, reference to actual systems and airframe components is facilitated.

There are three courses: electrical, airframe and instrument. The first two are of five weeks' duration and the latter of two. R.A.F. crew chiefs attend all three courses and spend a final fortnight devoted to a study of production-line assembly.

Although under the administration of the Handley Page servicing department, the school is run as a separate unit with its own staff.

Notes, which the instructors prepare and provide for students, are issued to all trainees. As the course progresses they accumulate these notes until they have a 200-page manual containing 120 diagrams.

Wall charts, using a fully-coded colour scheme, are referred to frequently by the lecturers who prepare them themselves for usein class.

Handley Page apprentices have contributed many lecture-room aids; one demonstrates the Victor's flying-control mechanism. Others, including a mock-up of the cockpit controls and instruments, have been designed and built in the school which has its own drawing office.

Victor Facts and Figures

Production of the Victor by Handley Page Ltd. has now reached a peak rate. Below are a few facts and figures associated with the aircraft:

- It has 15,000 drawings and 40,000 different detail parts.
- Its electrical system is connected by over 40 miles of cable.
- It has 2,200 items of equipment supplied by the government or outside manufacturers.
- More than 100 subcontractors are involved in its production.

Press Notes

Visit to No.10 Squadron, Cottesmore
10th-11th September, 1958.

THIRD OF THE V BOMBERS

Biggest and heaviest of the three V-Bombers, the Handley Page Victor has been in service with No.10 Squadron, No.3 Group, R.A.F. Bomber Command since April, 1958. The second Victor squadron, No.15, is in process of formation and is expected to be operational before the end of the year. A photographic reconnaissance version of the Victor is also in service at Wyton.

At its operational height the Victor can outfly and outmanoeuvre any fighter in Squadron service to-day. To make a successful interception a fighter would have to leave the ground within a margin of plus or minus fifteen seconds of the exact moment required.

Performance details must remain secret, but the power of the Victor's four Sapphire turbojets is more than ten times that of a last war bomber; and the fully bombed up weight of the heaviest of the last war bombers is less than the weight of the Victor's fuel load. It is known also that the Victor inadvertently exceeded the speed of sound on a delivery flight earlier this year from the Handley Page aerodrome at Radlett to the Operational Conversion Unit, Gaydon.

All the Victor crews have been trained at Gaydon where more than a thousand hours of intensive flying trials were carried out under the responsibility of the Chief Instructor, Wing Commander Douglas Iveson, D.S.O., D.F.C.

Restriction on flying was introduced last month when the manufacturers discovered a crack, technically known as "corrosion stress", in an internal member of the tailplane during a routine inspection. The cause was traced to an over tightening in the assembling of the tail. As a prudent measure the method of assembly was revised so that the stresses which had caused the crack could be avoided. This modification is being carried out on all Victors.

In spite of its weight, conventional type, power operated flying controls, give the Victor the "feel" of a light bomber. The experienced pilot finds the Victor easy to fly but its high performance qualities make it complex for inexperienced hands.

Pilots single out for praise the good handling at altitude, the easy ground manoeuvrability from the nose wheel, the excellent vision, and the roomy comfort of the cockpit.

"It's a bomber with a airliner's standard of comfort", says Wing Commander Charles Owen, O.C.10 Squadron. Unlike the other V-bombers the crew are together in one compartment. "Being able to glance over one's shoulder and see everybody else", he adds, "gives a feeling of compactness and a sense of crew unity, that you don't get when the crew are separated and their only link is over the intercom".

The crew consists of captain, co-pilot, navigator, radar navigator, and air electronics operator. The cockpit is pressurised but to keep the crew trained to a peak, pressurisation is maintained most of the time at operational conditions. This means that the "cabin height" in which the crew work is considerably higher than the altitudes at which last war bombers operated.

To aid comfort the cabin is equipped with small electric elements on which the crew can heat the tins of soup that now form part of the flying rations. Drinking the hot soup has been a problem, however, because of the difficulty of removing the oxygen mask. In the comparatively rarefied atmosphere at which the cabin is pressurised, the crew have had to take the soup in quick sips between gulps of oxygen from the mask.

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A new oxygen mask is therefore being designed with facilities for enabling the crew to suck the soup through a polythene tube without having to remove the mask.

The advent of Britain's V-Bomber force brought increasing attention to aircrew diet. The fried eggs and chips that formed the standard operational meal of the last war is out. Fatty foods are avoided, and so also, in view of the height at which the Victor flies, are heavy meals.

A special aircrew buffet has already been tried out experimentally at the Victor Conversion Unit, Gaydon, and as a result of its success will soon become standard on V-Bomber stations. The cooking and presentation of food are almost as important as the diet. To save food going cold and congealing with fat during transport from the cookhouse the buffets will be fully equipped kitchens adjoining the flight offices. Experienced cooks will prepare meals to order on the spot for the aircrew.

The favourite pre-flight meal is an omelette followed by fresh or tinned fruit. Steaks await return from flying

Captain and co-pilot have ejection seats for leaving the aircraft in an emergency. The rest of the crew normally bale out through the side door of the cockpit. This exit is not practicable, however, in the case of a ditching. The Captain then has to jettison the cockpit canopy and escape through the roof hatch first to make way for the rest of the crew to follow him.

In the last war mass attacks of bombers had to return again and again to batter a target into submission. The power of a Victor with its nuclear weapon needs only one raid by one aircraft to obliterate the target. Each Victor and its crew have in effect become a bomber squadron with independent briefings and missions.

As protection from the flash and radiation of the bomb the Victor like the other V bombers is painted white in special anti-flash paint.

The life of both the Victor and Vulcan will be prolonged and their effectiveness increased by the arrival of the stand-off bomb. A pilotless aircraft, the size of a small fighter, this will fit in a blister under the fuselage.

Instead of having to penetrate the enemy's defences to the target, the Victor will "stand off" from the target and release its free-falling bomb. Under the control of an automatic navigator the bomb will fly to the target and then deliver its warhead in a steep dive. As the range of the stand-off bomb develops, it should be possible for the missile to be released outside the enemy's radar range.

The Aircraft

An all-metal, mid-wing monoplane with single fin and rudder, the Victor has a span of 110 feet, length 114 feet 11 in., and height 26 ft. 9 ins.

The main characteristic feature of the Victor is its crescent or scimitar shaped wing: a design evolved to reduce drag at high speed and great heights, and yet give good stability and control throughout the range of speed and altitude. The wing which is broad and deep near the fusealge to house the four jet engines, fuel tanks, and undercarriages, becomes thinner and narrower, as well as straighter, towards the tip. The progressive reduction in the angle of sweep towards the tip, evens out the airflow, reducing risk of tip-stalling when the wing is near stalling point, and gives improved aileron control particularly at low speeds.

Nose flaps are also used to stop tip-stalling at take-off, landing and in slow flight. Airbrakes are fitted in the extreme tail end of the fuselage. A tail parachute cuts the landing run.

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For size and weight the Victor is a remarkably compact aircraft. That compactness is typified by the extremely small space into which the undercarriage folds. When a former Secretary of the United States Air Force, Mr. Harold Talbott, visited the Handley Page factory in 1954, he refused to believe that the undercarriage could fold back into the space allotted for it. The Victor was jigged up and the undercarriage retracted "Now that I've seen it", he commented, "I still believe it's impossible".

A high swept back tailplane follows the same principle of design as the wing. Its span is only seven inches less than that of a Hunter fighter and it looks in fact, like a fighter perched on top of a single fin, on which it is mounted with a bullet shaped fairing at the junction. This high position not only keeps the tail free of all disturbance from the jet exhaust, but has the structural advantage of eliminating the intersection of two planes that would be necessary if the tail were placed lower.

Engines

The Victor has more power than ten last war bombers. The Mk.1 is powered by four Armstrong Siddeley Sapphire turbo jets. The Mk.2 Victor will be equipped with the military version of the Rolls Royce Conway By-pass turbo-jet, for which a thrust of 17,250 lbs has been announced.

A constant thrust version of the De Havilland Spectre rocket engine for assisted take-off will enable the Victor to operate fully loaded from medium length runways, already in existence throughout the world. A liquid propellant engine, the Spectre uses hydrogen peroxide as an oxidant in conjunction with a solid silver catalyst and kerosene fuel. One Spectre will be fitted under each wing, installed as a self contained unit in a releasable nacelle which is dropped after firing to eliminate drag and save weight. The nacelle is fitted with a highly developed parachute gear which allows the engine to be recovered undamaged ready for repeated use.

THE VICTOR FLIGHT SIMULATOR

All the experience of the Vulcan and Valiant simulators has been used to make the Victor simulator at the Operational Conversion Unit, Gaydon, one of the most highly developed in the country.

Except for the physiological effects of G., the Victor simulator is an exact replica of cockpit, controls and flying characteristics of the bomber itself. Every movement a pilot makes starts a natural logical sequence of flying effects. If he reacts too slowly, if he fails to anticipate or take compensating action, he will crash in the simulator as surely as he would have done in the air.

He moves the throttle forward. At once the servo motors of the "brain" of the simulator - a vast electronic computor looking like an automatic telephone exchange - pick up the movement and set off a chain of reactions which are fed back to the simulator. The immediate effect is a change of trim. This brings the nose up; and unless the pilot trims back to check the nose movement, the nose will keep rising with the inevitable chain of events.

When the pilot "takes off" for a three hour exercise in the simulator he must fly it with the same exacting skill and concentration that he will have to apply in the air in the world's highest performance bomber. The fact that physically he is on the ground makes no difference. He cannot let-up or pause for a breather. The simulator will not wait.

Seven exercises of three hours each the potential pilot of a Victor does in the simulator, so that at the end of the six weeks ground school he will be completely at home with the Victor's cockpit, the stick forces, the rate of climb, its quick acceleration, the power settings, every aspect of its performance and its limitations. He will know instinctively which knob to press, which switch to flick.

He will have faced emergencies - faults introduced without warning by the instructor. A failure in cabin pressurization or oxygen supply; a hydraulic failure, or fault in the pitot system; wet start engine, a flame-out, an engine fire; an electrical failure.

The rise in jet pipe temperature that the instructor introduces may not be alarming at first; but if the pilot is not alert to the indications of the change in the gauge reading and does not do something about it in time, the electronic computor will feed back the sequence of effects leading up to engine failure.

If that occurs the pilot cannot stop and start again. He must continue as he would in the air, carrying out the correct emergency procedure, calling up on the right channels on the R/T.

At the back of the simulator's cockpit in the navigator's position, sits an N.C.O. simulator instructor who answers all the calls and passes on request the appropriate information which the pilot would receive over the intercom from his navigator or air electronics officer; or from the ground controller over the radio telephone.

The N.C.O's on this job enter into the part thoroughly and give realism by using a different voice for each role they are playing. One particularly has become a master in his range of accents. When a new pilot finished his first exercise and clambered out of his seat to find only one sergeant behind, he wanted to know where the other three fellows he had been talking to were.

With a running cost of little more than £20 an hour, the simulator is saving hundreds of pounds an hour in the training of Victor pilots, as well as ruling out risk to Britain's latest member of the V-Bomber trio through pilot error due to inexperience. The Victor simulator teaches the pilots quick response and automatic thought. He can practise over and over again emergencies that it would be undesirable to rehearse in the air.

/Competition

Competition for a place in a Victor crew is very keen, and selection is rigorous. At the end of the course the A.O.C. No. 3 Group Air Vice Marshal K. B. Cross, C.B., D.S.O., D.F.C., personally interviews all crews before they pass to Squadron.

The captains are all very experienced and specially selected men. In the main they are ex-captains of Canberras and co-pilots of Valiants, but they come from all commands.

The Victor co-pilots who will spend upwards of eighteen months in this role before the chance occurs to return to Gaydon for a captain's course, include fighter pilots, anxious, for a seat in the Victor. Two co-pilots at present on the Conversion Course at Gaydon are men with over 3,000 and 4,000 flying hours respectively, and both with considerable experience in jet fighters and trainers.

Crewing up of the Victor crews at Gaydon is done by the men themselves as they get to know one another during the early weeks of ground school.

The two navigators - one concentrating on plotting and the other on radar and the blind bombing system - have usually had experience on Canberras. They too carry out simulated flights and radar bombing attacks on ground trainers.

There is also a trainer for the air electronics officer. This is a mock-up of the Victor cockpit with the essential warning lights, switches, and gauges that concern him. The role of the Air electronics officer is more important than on any other aircraft. He is responsible for the handling of all the electrics and the maintaining of essential services if anything goes wrong. He also learns the operation of the radar equipment.

To maintain the Victor squadrons at the peak of efficiency as part of Bomber Command's major deterrent force the aim is to keep crews together for a tour of five years.

AIR VICE-MARSHAL K. B. B. CROSS, C.B., C.B.E., D.S.O., D.F.C.
AIR OFFICER COMMANDING, NO. 3 (BOMBER) GROUP

Air Vice-Marshal Kenneth Brian Boyd Cross, C.B., C.B.E., D.S.O., D.F.C., was appointed Air Officer Commanding No. 3 Group, Royal Air Force Bomber Command, in January 1956. Following the Vickers Valiant, the Handley Page Victor is the second of the V-Bombers that he has been responsible for bringing into successful squadron service. He personally interviews all members of No. 3 Group's V-Bomber crews before they pass from the operational conversion units to squadrons.

Immediately before his present appointment, Air Vice-Marshal Cross was for three and a half years at Air Ministry, being in turn Director of Weapons and Air Defence. In the course of a distinguished career he has been Director of no less than six departments at The Ministry - five of them being in the operational sphere. In 1950 he was placed in command of the Eastern Fighter Sector.

The Air Vice-Marshal is one of the few survivors of the aircraft carrier, H.M.S. Glorious, sunk by enemy action off the coast of Norway in 1940. Aircraft of No. 46 Squadron, operating under his command from the ship during this campaign, were the first Hawker Hurricanes - later to gain undying fame with the Spitfire in the Battle of Britain - to take off from and land on a carrier. Within a few hours of the Squadron's return from covering the Allied evacuation, H.M.S. Glorious was attacked by the German battle cruisers Scharnhorst and Gneisenau and sunk. Squadron Leader Cross, as he then was, jumped overboard, climbed on to a raft, and with six others was picked up three days later by a Norwegian tramp steamer. They were the only survivors from 1,400 personnel.

For operations in the Norway campaign he was awarded the Distinguished Flying Cross.

Recovering from the effects of this experience at sea he volunteered for service in the Middle East in December, 1940, being given command of a Fighter Wing. In the autumn of 1941 he was transferred to the Western Desert, taking part in the offensive there, and the following year, as the Commander of No. 219 Group, was charged with the defence of the Delta.

He was appointed a Companion of the Distinguished Service Order in 1942.

Throughout the critical year of 1943, and into 1944, the Air Vice-Marshal remained in the Mediterranean zone, being appointed Air Officer Commanding Cyrenaica - following its fall to the Allies. He then held a similar position as head of No. 242 Group in Tunisia - equivalent of the Desert Air Force - and, with the 1st Army, captured Tunis.

Upon return to the United Kingdom in March, 1944, he was Air Officer Training at Headquarters, Allied Expeditionary Force, and then began a tour of duty at Air Ministry, successively as Director of Overseas Operations, Director of Tactical Operations and, upon the amalgamation of the Air Defence and Tactical sides - Director of Fighter Operations.

He was made a Commander of the British Empire in June 1944.

After graduation from the Imperial Defence College in 1946, Air Vice-Marshal Cross was an Air Staff Officer at the then Headquarters, British Air Forces of Occupation, Germany, for two and a half years, afterwards taking over command of R.A.F. Station, Horsham St. Faith.

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He became a Companion of the Bath in June 1954 and has been awarded also decorations conferred by the President of the United States, H.M. The King of Norway and H.M. The Queen of the Netherlands.

Born in October, 1911, at East Cosnam, Hants, and educated at Kingswood School, Bath, Air Vice-Marshal Cross was commissioned in the R.A.F. in 1930. Three years later he was a member of the No. 25 (Fighter) Squadron team of nine which performed Squadron Formation aerobatics at the Hendon Air Pageant with their wings tied together by ropes. He has played Rugby football for the Harlequins and Sussex as well as for the R.A.F., and was Chairman of the R.A.F. Rugby Union for four years. He also represented the R.A.F. at golf for several years.

NO. 10 SQUADRON, COTTESMORE

The first squadron to go into operational service with the Handley Page Victor, No. 10 Squadron was originally formed from No. 1 Reserve Squadron at Farnborough on 1st January, 1915.

During the first world war it operated in B.E.2c's on line patrols and photographic reconnaissance in support of the First Army under Sir Douglas Haig. At the time of the British advance in the Autumn of 1918, the squadron had the job of dropping pigeons in baskets by parachutes to advancing detachments so that they could send back reports of their progress to H.Q.

In 1928 the squadron was reformed as a night bomber squadron with Handley Page Hyderabads, followed by Hinaidis and Heyfords. Equipped with Whitleys on the outbreak of war, No. 10 squadron made a leaflet raid on Berlin on the 1st October, 1939, in very severe weather conditions. Slight enemy opposition was encountered and one of the four aircraft failed to return.

The squadron's first bombing raid of the war was on the 19th March, 1940, when eight Whitleys each carrying mixed bomb loads of 1,500 lbs. attacked Hornum. All returned safely.

Italy's declaration of war on 11th June, 1940, brought a swift reply. The same night the squadron flew from an advance base in Guernsey through thunder-storms and severe icing to attack industrial targets in Turin. One aircraft was struck by lightning and had to abandon the mission as a result of shock to the rear gunner who had been leaning on his guns, and burns to the wireless operator. One other aircraft failed to return.

The squadron converted to Halifaxes in 1941 and continued to operate in these for the rest of the war during which they earned 523 awards including 9 D.S.O's, 333 D.F.C.'s and 173 D.F.Ms.

In the attack on the battleship Tirpitz in a Norwegian Fjord on 27th April, 1942, the commanding officer, Wing Commander D.C.T. Bennett who later formed the Pathfinder Force Unit, was shot down. He escaped through Sweden and within five weeks was back in command of the squadron.

In 1945 No. 10 Squadron was transferred to Transport Command, India; and from November, 1948 to September, 1949, was engaged in the Berlin Air Lift before being retired in February, 1950.

Re-formed at Scampton with Canberras in 1953 it carried out tests of pressure and air-ventilated suits on long-range flights. Its move to Honington in April 1955 when Scampton was closed for reconstruction, meant its transfer from No. 1 Bomber Group to No. 3 Group. The same year No. 10 Squadron won the War Armament Officer's Trophy, the premier prize in the annual bombing competition.

On 26th October, 1956, the squadron flew to Nicosia and opened the operation against military airfields in Egypt.

H.R.H. Princess Margaret had promised to present the squadron with its Standard in 1957, but before she could do so, the squadron was retired pending its re-formation in April, 1958 with Victors - the third and latest member of Britain's V-Bomber Force.

Princess Margaret will now fulfill the delayed engagement on 21st October.

The Standard is a fringed and tasselled silken banner on a pike surmounted by a Golden Eagle. It was created by his late Majesty King George VI to mark the 25th Anniversary of the R.A.F. in 1943. Squadrons qualify for the award after twenty-five years' service, but it can also be presented for specially meritorious operations.

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The banner has an Air Force blue background with the squadron crest embroidered in the centre. A winged arrow represents the mediaeval counterpart of a flying bomb, and the motto Rem Acu Tangere (To touch the matter with the point of a needle) can be freely translated "Hit the Mark".

The banner is edged with a decorative border embroidered with the rose, thistle, leek and shamrock - the national emblems of the British Isles. Around the badge eight selected battle honours in scrolls - Western Front 1915-18, Arras, Somme 1918, Invasion Ports, 1940, Fortress Europe, 1940-1944, Ruhr 1940-1945, Berlin 1940-1945, Normandy 1944 - form a memorial to those who have gone before.

Use of a Colour or Standard, as a rallying point in battle and a symbol of veneration dates back to the earliest history of man. The Standard is a shrine of our traditions, but above all, it is a symbol of the Sovereign's trust in the unit concerned.

STATION COMMANDER, COTTESMORE

Group Captain James Edgar (Johnnie) Johnson, D.S.O. and two Bars, D.F.C. and Bar. Married. Two Children. Home town: Melton Mowbray.

"A magnificent leader, whose unsurpassed skill and personal courage have inspired all". So said the citation when the R.A.F.'s top-scoring fighter pilot of World War Two was awarded the second Bar to his D.S.O. Born in 1915, 'Johnnie' Johnson enlisted in 1939, joined 616 Squadron during the Battle of Britain. Later he flew from Tangmere as wing man to Douglas Bader, the legless fighter ace. He was with Bader when they were bounced by a force of Me 109s. Bader was shot down and baled out into captivity, whilst Johnson quickly avenged him by shooting down one Me 109 and damaging another.

Subsequently Johnson commanded a Canadian Spitfire Wing. His duties included the escort of Fortresses on day light bombing raids. At the time he expressed admiration for "the men flying big bombers". These "big bombers" of the second World War had less than one-tenth of the power of the Victors the station which Group Captain Johnson is now commanding.

During service as an exchange officer with the U.S.A.F., Johnson studied combat tactics in Korea, and then spent two years as Deputy Director, Tactical Operations, Air Ministry. He took over Cottesmore in December 1957 in readiness for the first squadron of Victors.

"As a fighter pilot", he says, "I was one man in one machine. As a fighter pilot leading a formation I was responsible not only for flying but for navigation, leading the formation, battle tactics. Coming to a Victor I therefore find it very pleasant indeed to have all the crew helping with these tasks".

He believes in the present rather than a problematical future. "We have at Bomber Command," he says, "a highly specialised instrument which works, and could work tonight and tomorrow if necessary."

NO. 10 SQUADRON

Officer Commanding. Wing Commander Charles Owen, D.S.O., D.F.C., A.F.C.
Home Town: Fowey, Cornwall.

Wing Commander Owen served with 90 Squadron in Valiants, and has also been through a Vulcan Operational Conversion Unit. He has thus had experience of all three V-Bombers. Born 1923, he joined the R.A.F. in 1941 and served with the Pathfinder Force during the war.

His post-war career has included experimental flying with the Bombing Trials Unit, and a two-years' tour in the United States during which he flew the B29, B36, and B50.

Squadron Leader Ulf L. Burberry, Flight Commander. Married. 3 children.
Home Town: Hove.

Born 1923, Squadron Leader Burberry enlisted in 1942. During the war he instructed in Canada, and then joined a Dakota transport squadron. He was with the squadron hired to drop supplies to the hill tribes in Assam, as an alternative to the use of coolie bearers. Mules, pigs and chicken, as well as other supplies, were dropped by parachute to the tribes. Squadron Leader Burberry joined 57 squadron of Canberras in 1953, and afterwards served with No. 138, the first Valiant squadron with which he operated from Malta during the Suez campaign.

Squadron Leader William B. C. Young. Squadron training officer.
Home Town: Reading.

Squadron Leader Young served with the R.A.F. during the war in South East Asia Command. He left the Service in 1946 and spent three years as a first officer with B.E.A. before rejoining the R.A.F. He was a member of the radar research flight in 1954. He spent three months in the Pacific liaising on the nuclear tests before joining No. 16 Squadron.

Flight Lieutenant S. E. Cowen, D.F.M. Engineering Officer.
Home Town: Pontypool, S. Wales.

The third flight engineer to receive the D.F.M., Flt.Lt. Cowen spent his wartime service in Stirlings and Lancasters. After the war he spent three years on technical intelligence duties. He was at the Aeroplane and Armament Establishment, Boscombe Down, servicing the prototypes of the Swift and Hunter during their intensive trials.

From May 1956 until joining the squadron Cowen spent two years seconded to Handley Page, liaising on the development of the Victor with respect to servicing problems and facilities.

NO. 15 SQUADRON

Now reforming at Cottesmore as the second Victor squadron, No. 15 Squadron was originally formed at South Farnborough in March, 1915, with Major P. B. Joubert de la Ferte, now Air Chief Marshal Sir Philip Joubert de la Ferte, K.C.B., C.M.G., D.S.O. as its first commanding officer. Its engagements, at first on reconnaissance and later on bombing raids, included the Somme, 1916, and the German retreat to the Hindenburg Line in March, 1917.

The Squadron began second world war operations with Fairey Battles, and was re-equipped successively with Blenheims, Wellingtons, Stirlings and Lancasters. One of its famous Stirlings was "Mac Robert's Reply" - an aircraft given by Lady MacRobert in memory of her sons.

En route to bomb German targets in March 1941, No. 15 Squadron dropped packets of tea with messages of hope from the Dutch East Indies to their kinsfolk in Holland.

The "Dutch Tea Party" operation was resumed after the squadron's last raid - against Bremen - on 22 April 1945. The squadron spent the last week before capitulation dropping rations of tea and other foods over Holland.

Wing Commander David Green, D.S.O., O.B.E., D.F.C., O.C. No. 15 Squadron

1940, a Hampden Operational Training Unit and a grass airfield; 1946, a Mosquito Operational Conversion Unit and a runway of 2,000 yards; 1958, a base for Victor squadrons with vast runways that have swept away local villages and changed the character of the surrounding countryside.

These are the stepping stones in the career both of Cottesmore and David Green, who now returns to the station for the third time - this time to form No. 15 Squadron as the second Victor squadron.

Prior to his promotion to Wing Commander and posting for Victor training, David Green had spent three months on 109 Squadron of Canberras.

He was born in 1919, enlisted in the V.R. in May, 1939, and was commissioned in 1940. During the war he operated in Hampdens, Manchesters and Lancasters.

PRESS VISIT TO ROYAL AIR FORCE COTTESMORE

VICTOR PUBLICITY

PROGRAMME FOR PHOTOGRAPHERS DAY - 10TH SEPT. 1958

I MAIN PARTY

0900	Opening Address by the Commanding Officer - Group Captain J.E. JOHNSON D.S.O., D.F.C.	
0915	Coffee	
0930-1030	Visit No. 10 Squadron Aircraft - Eight Victors in line abreast on main runway. Facilities will include:-	Sqn. Ldr. BARTLETT
	(a) Ground Photography	
	(b) Airborne (Helicopter) Photography	
	(c) Three crews entering aircraft	
1030-1115	Watch aircraft starting, taxying and under M.T. tow.	
1115-1130	Three Victors take-off.	
1130-1150	Flying Display by one Victor, concluding with a tail parachute stream landing.	Sqn. Ldr. BURBERRY
1150-1330	Tour of set pieces. (Three parties):-	

	Party A	Party B	Party C	
1150-1220	Electronics Centre	"D" Hangar	Childrens School	A.Flt.Lt. MITCHELL
1225-1255	Children's School	Elect's Cte.	"D" Hangar	B.Flt.Lt. STEWART
1300-1330	"D" Hangar	Children's School	Electronics Centre	C.Flt.Lt. WOOD

1330-1345	Airfield - Two Victors land & stream tail parachutes	
1345-1445	Officers Mess. Drinks and Lunch	All escorting Off's.
1445-1530	Concluding interviews and talk by the Commanding Officer	

II ROTA PARTY

0900	Opening Address by the Commanding Officer, Group Captain J.E. JOHNSON, D.S.O., D.F.C.	
0915-0945	Flying briefing by Wg. Cdr. C. OWEN, D.S.O., D.F.C. Officer Commanding No. 10 Squadron	
0945-1030	Coffee, Aircrew Dress, Transport to aircraft, Crew Photographs	Sqn. Ldr. KNIGHT
1030-1115	Aircraft checks and preparation	
1115-1130	Aircraft taxi and prepare for take-off	
1130-1330	Aerial Photography. (Beverly to land when task completed)	

/1330-1345...

1330-1345	At airfield - Witness two Victors landing and streaming tail parachutes.
1345-1445	Officers Mess - Drinks and Lunch
1445-1530	Concluding interviews and remarks by the Commanding Officer