



BNAPS News

May 2016

BNAPS News Vol 6 Iss 3 – May 2016

BNAPS Takes Delivery of Lycoming Engines

On 28 April BNAPS was pleased to accept delivery of two non-functional Lycoming O-540 engines. The engines have been constructed for the project by Norvic Aero Engines at their Engine Overhaul Shop in St Neots, Cambridgeshire. This delivery marks another important step towards having the historic B-N Islander, G-AVCN fully assembled in 2017.

The engines have been built up from non-reusable parts, both engines being equipped with dual magnetos, ignition harness and spark plugs and have been prepared to an exceptionally high standard.



Acquisition of the required 12 narrow deck type cylinders was a joint effort by Norvic Aero Engines, Saywell International and Loganair, Peter House at Deltair and Mike Cromati, who kindly donated 4 cylinders from his Aztec engine rebuild. Thanks go to all concerned in achieving this magnificent result and for their contribution to the high quality restoration of Islander G-AVCN.

For latest news about the progress of the restoration work see pages 3-9

Isle of Wight Aviation Heritage Meeting 13 April, 2016

The well attended meeting, hosted by the IoW Flying Club and chaired by John Kenyon, centred around the concept and business case for setting up an Isle of Wight Aviation Heritage Centre and repatriation of the historic Spartan 3 Seater biplane ZK-ARH/G-ABYN as an important exhibit. BNAPS also supported the meeting and gave the latest news about restoration of another potential exhibit, the historic Islander G-AVCN.

Feedback from the meeting indicated very positive support for the heritage centre initiative, funding is inevitably a critical influence for the way ahead.

BNAPS Supporters Fund Raising Appeal - May 2016



2000



2017



2015

Dear BNAPS Supporter,

Following the move to a larger workshop this clears the way to having historic B-N Islander, G-AVCN, fully assembled as a high quality static exhibit in 2017.

It is estimated that up to £20,000 is needed to complete the restoration work and to have G-AVCN fully assembled in 2017, the 50th anniversary of its first flight.

The project can only succeed with the continuing efforts of our team of volunteers and the availability of funding to cover expenditure for purchase of parts and materials, workshop rental, electricity bills, transport etc.

This appeal goes out to all BNAPS Supporters to ask for more help in various ways:

- 1. Individual or Regular donations by direct debit or other arrangements. Feel free to make payment directly to the Trust from your Bank Account and if you are a taxpayer and wish to gift aid your donation a signature form will be provided. All donations will be acknowledged.*
- 2. For donations by cheque this should be made payable to BNAPS or payment may be made direct to our BNAPS account: Bank sort code: 55-50-39. Account number: 47349344.*

Looking back over the past 16 years since G-AVCN was repatriated funded by Peter Graham and his company Airstream International, it is remarkable that through your voluntary efforts, and your continuing support and generous donations about £35,000 has been raised to date to ensure G-AVCN has been saved as a tangible and lasting tribute to all who made the Islander a success.

If you would like to support the fund raising appeal please contact BNAPS by e mail bob@bnaps.org.uk or Telephone 01329 315561. All donations large and small will be gratefully received,

*Yours sincerely,
Bob Wealthy*

Britten-Norman Aircraft Preservation Society Chairman

Pedro Reis

BNAPS has recently been informed that Pedro Reis has passed away in Portugal. As the local agent for B-N in Portugal and parts of Africa he was well known to B-N staff and sincere condolences are sent to Pedro's family and friends at this difficult time. An appreciation of his life will be included in a future issue of BNAPS News

Frank Matthews 5 November 1938 – 24 April 2016

Frank had a lifelong interest in aviation with a particular interest in Britten-Norman. He kindly donated his Islander fuselage section to BNAPS in February last year as he could not continue his restoration project due to health problems. BNAPS sends sincere condolences to Frank's family and friends for their sad loss.

G-AVCN Restoration Progress Report

March 2016 – May 2016

Introduction

The last period has seen a concentrated effort to sort everything out following the move from Harbour Farm. Bryan Groves and Charles Shiveral have sorted the various parts and associated items as surplus/scrap, useable or complete. There are still some items that remain at the Nettlestone store to be sorted.

Mark Porter and Mike Smythe completed the construction of the false floor in one corner and the racking is now in place. Bob Ward has assembled a set of kitchen cupboards that he has donated and these now provide very useful additional storage facilities. Overgrown brambles and small trees have been cleared by Bob Wilson at the rear of the workshop so the large door can be used as a fire exit.



View of storage area with false floor and racking in place



Interior view of the trim shop

Following The workshop move on 10 March restoration work has been resumed and is progressing well. Patrick Gallagher picked up the work on the wing rear box section. Maurice Dyer has just joined the restoration team and has been repairing/replacing the damaged starboard wing tip frames and trailing edge section. Keith Winter has continued with the rudder rebuild.

Paul Thomasson has made excellent progress on the internal trim with most of the panels now manufactured and trial fitted. The plastic covering material will be purchased in due course to enable the fuselage trim panels to be completed.

The aileron donated by Saywell International has arrived. This item is in very good condition and will save much time and effort as the existing aileron was severely damaged.

The pair of non-functional Lycoming O-540 engines arrived on 28 April from Norvic Aero Engines at St Neots. All the team were very impressed by the high quality of the work undertaken by the engine shop at St Neots.



One of the engines being unloaded from T A Reader's delivery vehicle (left).

The aileron donated by Saywell International requires some minor work and after etch priming will be spray painted (right).



G-AVCN Restoration Progress Report March 2016– May 2016 (continued)

The following series of captioned photographs show the results of some of the work undertaken in the last period:



A false floor was constructed in the top corner of the workshop by Mike Smythe and Mark Porter.

The base consists of a number of wooden pallets that were then covered with sheets of industrial plywood. This area is for storage racks and stowage of finished items.



General view of the workshop - finished items in the foreground have now been moved to the storage area.



View of the workshop where flaps, ailerons, outer wing section, tail plane and rudder and other parts were initially stowed.

The racking has now been moved to the storage area and this part of the workshop has since been set up as the work area for de-corroding, surface preparation and minor repairs.

G-AVCN Restoration Progress Report March 2016– May 2016 (continued)



Desk and filing cabinet used by Charles Shiveral provides facilities for access to drawings and manuals together with maintenance of build records.



The wing support frames have now been set up on concrete blocks and the wing positioned to allow sufficient space for working on the starboard end and sufficient space to allow for re-attachment of the section of wing on the port side.



Patrick Gallagher is seen here carrying out repairs to the wing centre alongside the port engine nacelle.

G-AVCN Restoration Progress Report March 2016– May 2016 (continued)



*Maurice Dyer has recently joined the restoration team and is seen here working on the wing to remove damaged formers (left)
Replacement formers were then installed (right)*



Top left – wing skin sections laid out for inspection to assess their condition for re-use.

Top right – Mike Smythe cleans off surface corrosion on a wing skin section that is suitable for re-use.



*Left – Keith Winter drills out fixing holes in the rudder for installation of a replacement skin section.
The rudder repairs have proved to be more difficult and time consuming than anticipated but the end is now in sight.*

G-AVCN Restoration Progress Report March 2016– May 2016 (continued)



Port outer wing section and straight wingtips have been positioned ready for work to get started.

The outer wing section had to be removed to shorten the wing when VCN was brought back to the UK in a 40 foot freight container.

Restoration and re-installation of the wing section together with re-installation of the wingtips represents a major part of the wing restoration work.



Some de-corrosion work has started on the flaps and elevator, once damaged areas have been rectified and the surfaces prepared and etch primed, these items will go off site for top coat spray painting later in the summer.

Work on these items was curtailed last year due to space limitations at the Bembridge workshop. Now this problem has been alleviated as a result of moving to the new workshop.



Bryan Groves has continued with the work of constructing the landing gear. Thanks to his diligent efforts the landing gear nose and main legs are now nearing completion as seen on the left.

As the oleos will not be active, Bryan has made spacers that will be fitted to give the correct ride height.

G-AVCN Restoration Progress Report March 2016– May 2016 (continued)



Paul Thomasson has made good use of the new trim shop and has forged ahead with the fabrication of the trim panels. Here Paul is trial fitting the interior trim panel on the starboard cabin wall.



The trim panel is seen having been trial fitted. At a later stage the panels will have the surface covering material glued in place to finish the job.



View of the fuselage interior showing trim panels being trial fitted on the starboard cabin wall and in the baggage compartment.

G-AVCN Restoration Progress Report March 2016 – May 2016 (continued)

Looking Ahead

The coming months will see significant progress with rebuilding the wing with work on the trailing edge structure and skins and with re-attachment of the port outer wing section we will soon be at the point when the wing will be mounted on the fuselage to enable work on the leading edge re-skinning to get under way. All the trim panels are planned to have been fabricated and trial fitted such that the outer covering material can be glued in place.

The fin will be etch primed and with the tail plane will be ready for top coat spray painting. Surface preparation and de-corroding of the elevator, ailerons and flaps will proceed and these items will be etch primed and made ready for top coat spray painting.

Work on the landing gear will continue to install the necessary spacers to give the correct "ride height" together with cleaning and repainting a set of wheels and making up a representative braking system and hydraulic pipe runs for the main legs.

The missing parts list has been updated and location of suitable parts will continue. This will include air baffles, exhaust systems and other parts to fully equip the engines.

Supporting BNAPS & Islander VCN's Restoration



Request for Help from BN Historians



BN Historians' Allan Wright reports that Islander HP-11BL was noted at Aeropuerto Marcos A. Gelabert in Panama on 9.4.16. From BN Historians database Allan reckons that this aircraft is ex-HP-1153BL, c/n 672.

It still bears the same logo as carried by HP-1153BL when operated by Panama Flight Adventures, although the colour scheme is different.

Can anyone confirm the ID?

Thanks go to Allan Wright and Andy Clancey at BN Historians for providing BNAPS News with Islander Update 128 giving all the latest news about BN-2 owners and operators worldwide:

Britten-Norman News

May 2016

302 (BN-2A-20) YJ-AL3 Air Taxi, Port Vila, Vanuatu. 26.2.15. Withdrawn from use at Port Vila.

306 (BN-2A-8) 8R-GAR Air Services, Georgetown, Guyana. Confirmed as active 12.15.

356 (BN-2A-8) XA-DEW Aeroservicio Pity SA, Culiacan, Sinaloa, Mexico. Confirmed active 12.13.

402 (BN-2A-21) VH-URJ Cape Air Transport. To Torres Strait Air, Horn Island, Queensland, Australia. 12.15. (Leased from Colville Aviation Services)

421 (BN-2A-20) VH-WZK West Wing Aviation. To Torres Strait Air, Horn Island, Queensland, Australia. 2015

427 (BN-2A-8) HI798 Sky High Aviation Services, Punta Cana, Dominican Republic. To Carmonair Charter, San Jose, Costa Rica. 2015 as **TI-BGK**.

458 (BN-2A-21) VH-OBJ Parviz Bryn Deamer, Dandenong, Victoria, Australia. Noted fully complete after a long rebuild by Maryborough Aviation Services 15.8.15. Canx to Vanuatu 4.3.16. To **YJ-**

478 (BN-2A-27) 8R-GER Air Services, Georgetown, Guyana. Noted active at Ogle 1.12.15.

537 (BN-2A-21) VH-WZF West Wing Aviation. To Torres Strait Air, Horn Island, Queensland, Australia. 2015.

635 (BN-2A-8) 8R-GGT Trans Guyana Airways. To JAGS Aviation, Georgetown, Guyana.

643 (BN-2A-21) N7049T Air America, Carolina, Puerto Rico. Noted in new colour scheme at San Juan 14.10.15.

672 (BN-2A-8) HP-1153PS Air Panama. To Panama Flight Adventures, Panama City, Panama as **HP-1153BL**.

820 (BN-2A-21) XC-JDN Servicio Geológico Mexicano, Pachuca Hidalgo, Mexico. Very likely to be the aircraft that was stolen, given fictitious markings N90460, and shot down during a drug running flight at Corral Viejo, Columbia 17.1.16. The aircraft was destroyed by the ensuing fire.

821 (BN-2A-27) ZK-LYP Air Chathams. To VH-TRS Colville Aviation Services, Archerfield, Queensland, Australia 23.10.15 as **VH-TRS**. To Torres Strait Air, Horn Island, Queensland, Australia. 12.15.

874 (BN-2A-21) C-GMZP Tsayta Aviation, Fort St. James, Canada. Cancelled to Panama 16.11.15.

882 (BN-2A-26) VH-WRR Northern Air Services, Thursday Island, Queensland, Australia. To Belair Airways, Port Vila, Vanuatu. 5.16 as **YJ-TK2**. Cancelled to YJ- 10.4.15. Noted at Port Vila 12.5.16. Routed Cairns Waterford 7.5, Carins - Honiara 10.5 but diverted back to Cairns, and Cairns - Honiara - Port Vila 12.5.16.

900 (BN-2A-26) N7136K Cancelled to Venezuela 3.11.09. It is now known this became **YV2771**. Operator unknown.

1039 (BN-2A Mk.III-2) 8R-GRD Golden Arrow Aviation. To Roraima Airways, Georgetown, Guyana. 1.16.

1044 (BN-2A Mk.III-2) XA-UBD Aerolamsa, Cozumel, México. To Air Flamenco, San Juan, Puerto Rico. 4.16. Ferry to San Juan from Mexico commenced 27.4.16. Being repainted in Dominican Republic. To become **N920GD**.

2017 (BN-2A-26) C-GZGO North Wright Airways, Norman Wells, Northwest Territories. Cancelled 18.1.16 to Guyana.

2145 (BN-2T) VH-YVH Britten-Norman Pty, Tamworth, New South Wales, Australia. To Sony Lidar Mapping, Jakarta, Indonesia. 4.15 as **PK-DLK**.

2202 (BN-2T) ZG993 Army Air Corps, Middle Wallop, Hampshire. Withdrawn from use 1.7.10 and stored at RAF Shawbury. To Museum of Army Flying, Middle Wallop. 2015. Placed in store until a suitable extension to the Museum of Army Flying has been built.

2284 (BN-2B-20) VH-WZP West Wing Aviation. To Torres Strait Air, Horn Island, Queensland, Australia. 2015.

3010 (BN-2T) RP-C788 Pricilla Large & Angie Thompson, Clark, Philippines. To Sunbird Aviation, Port Moresby, Papua New Guinea. 6.12 as **P2-SBC**. Written off 1 km (0.6 mls) from Kiunga Airport 13.4.16.



BN-2T-4S G-WPNS, c/n 4011 at Daedalus Airfield Lee-on-Solent 15.5.16. (Photo courtesy of Ian Haskell).

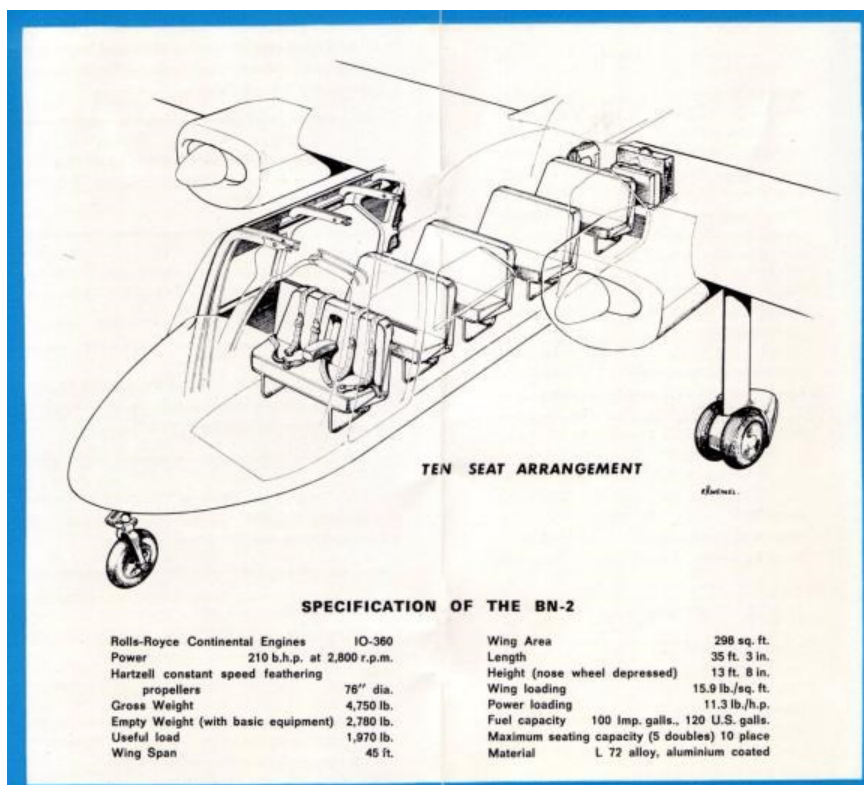
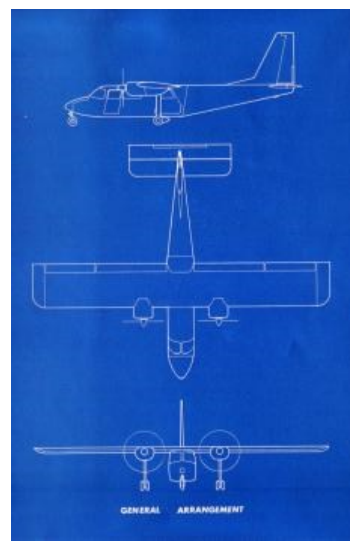
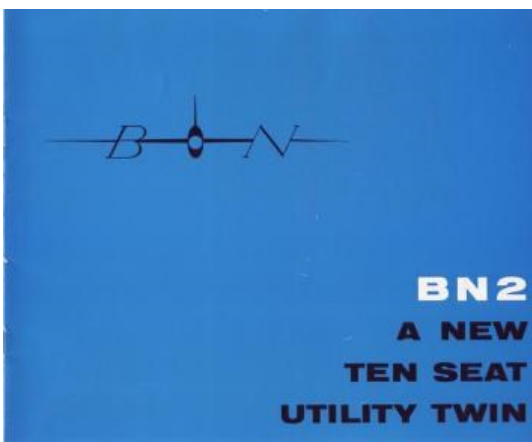
4011 (BN-2T-4S) G-GMPB Reg . to Britten-Norman, Bembridge, Isle of Wight. 14.12.15. Re-reg. **G-WPNS** 29.2.16. Noted at Hurn 9.3.16, arrived apparently for repainting. Left 13.4.16 still in old grey/white colour scheme. Noted at Lee on Solent 15.5.16

The BN-2 Concept 50 Years Ago

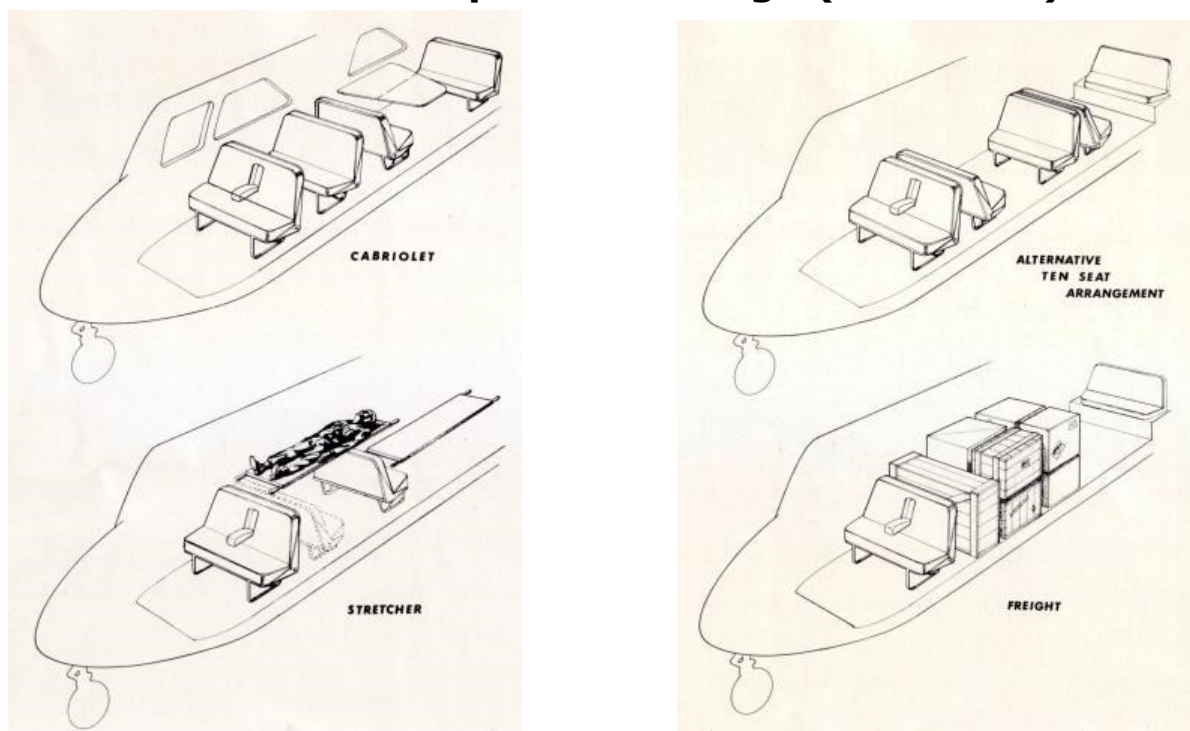
A few years ago as a result of an ebay purchase BNAPS acquired an interesting document issued by Britten-Norman dated November 1964 and titled "The BN-2 Feederline Twin Engined Aircraft Proposal". The document is marked "Confidential Pre-release Information" and contains a number of sections giving the thinking behind the design philosophy, the market potential, the company background, the design and construction team, launching cost together with appendices giving additional information about design and production costs, performance assumptions, specification and weight breakdown.

The document makes interesting reading over 50 years on and illustrates the clear thinking behind the BN-2 and it is probably fair to say that this is as valid today as it was back at the end of 1964. In some respects the BN-2 can be compared to the original Land Rover that emerged in 1948. Britten-Norman's strict attention to functionality and "no frills" resulted in the BN-2 Islander being something of a timeless creation, capable of being improved, but never really looking out dated.

The November 1964 BN-2 proposal document makes interesting reading some 50+ years on. The thinking behind the BN-2 is reflected in these extracts from a BN-2 sales brochure released for the 1964 SBAC Farnborough Show.



The BN-2 Concept 50 Years Ago (continued)



Emphasis was given to the inherent versatility of the BN-2 design concept

The BN-2 is a completely new aircraft developed specifically for the commercial short haul operator. It is a twin-engined utility with a passenger capacity that makes possible drastic reductions in seat-mile costs. Every part of the BN-2 has been designed with the sole aim of creating a safe, efficient and exceptionally economic twin at a price within reach of every commercial light aircraft operator in the world.

Steady advance in aircraft and engine design has made possible a plane that provides ten-seat capacity for the same order of horsepower found in today's smaller executives. The large cabin of the BN-2 with wide doors on both sides gives unequalled flexibility for passenger, freight or mixed operations. The walk-in floor height is a boon to passengers and freight handlers. It is not necessary to climb past cargo to reach the seats; three doors disposed along the length of the cabin provide direct access to all parts including the cockpit.

The BN-2's excellent power-to-weight ratio and generous wing area provide far better field performance than any other aircraft in its class together with the single-engine climb demanded today for public transport operations. This performance comes hand in hand with extremely low maintenance costs because there are no complicated gimmicks in the BN-2 to waste mechanic hours and cause costly down time. Simplicity with strength and accessibility is the keynote.

The BN-2's clean lines, large wing set high and long tail arm provide the steady flying qualities that allow pilots to operate with complete confidence under all conditions.



Extracts from the November 1964 BN-2 Proposal follow:

THE BN-2 PROJECT

Design Philosophy

1. Range/speed, payload have been optimised around short haul operations. The majority of commercial light twin operators report average sortie times of between 40 and 50 minutes, the Dove Mark 8 operators have reported block speeds of 109 knots, based on several years operations around Europe. The Dove's true cruising speed is 165 knots.

To illustrate the significance of this point, if 500 lbs of fuel were added to the BN-2's fuel load to carry the capacity passenger load over a longer range - larger engines with higher fuel consumption, a heavier structure and the need for a retracting undercarriage would increase the gross weight by at least 1500 lbs (viz. Aero Commander). All these additions are quite superfluous on short hauls of 40 to 50 minutes block time. For the occasional longer haul the weight of two or three passengers may be traded for fuel to give the BN-2 its maximum range of over 850 miles.

2. The ten seat capability of BN-2, with adequate single engine performance on the same power as the Rapide, is made possible only by the extremely light engines, propellers, ancillaries and nav/comm equipment that are now readily available.

3. The high wing was chosen

- (i) to give low floor height and easy access
- (ii) to reduce cost by keeping the main spar box in one complete piece, thus simplifying and lightening attachments, eliminating joints, and improving fatigue properties
- (iii) because low wings and low propellers are an embarrassment on rough narrow strips.

4. The fuselage is designed around the minimum envelope to seat ten persons. In mixed operations (freight and passengers) an aisle would be obstructed, hence an extra door is provided half-way along the cabin to maintain passenger access under all conditions. This arrangement has saved frontal area (no aisle - less head room required) and the weight of additional floor and roof structure.

5. Light alloy construction is used because, while it is preferred in the field, it has also proved lighter (than mixed steel tube / alloy / fabric) and cheaper in production. This construction also lends itself to easy Licence production since templates, pressed tools and assembly jigs can cheaply be duplicated. Mushroom headed rivets are specified throughout for ease of manufacture (the thin skins involved would require spin dimplings for flush rivets). At the speeds in question there is little drag penalty. The parallel section fuselage wing and tail plane contribute to ease of production and flexibility for later design stretch or shrink.

6. Every effort has been made to save weight by correct design philosophy. For example, bench seats, made possible by the elimination of the aisle, themselves provide a weight saving of close on 100 lbs.

Market Statement

The market for BN-2 aeroplanes has been assessed on the basis of published airline surveys. These show a total of 437 twin engined aircraft of nine seat capacity or less are in regular scheduled service amongst the world's airlines. In addition to these twins the same airlines operate 315 single engine aeroplanes of Beaver size or larger on regular schedules, making a grand total of 757 aircraft.

An analysis of the aircraft types and route structures concerned has been made to assess the suitability of the BN-2 for these airlines. The resultant sales estimate for this market is 170 BN-2 sales during the five years from 1966.

It is emphasised that this market concerns sales for scheduled operations upon existing routes. No account is taken of the increase in air traffic during this period. Certain operators aware of the existence of the BN-2 programme have indicated that when they can obtain delivery of BN-2s they will open new routes since the aircraft's economic characteristics make it a natural "route builder". This would indicate the possibility of additional sales to the scheduled operators.

No detailed surveys of charter as distinct from scheduled operators have been published. Britten-Norman have not conducted a market survey in this sector for fear of alerting competition and engendering premature publicity. The charter operators do, however, represent a most important market for the BN-2 estimated to be at least as large as that calculated amongst the scheduled operators (170 units).

A smaller market estimated at 85 units over the five year period is anticipated amongst companies, organisations and Government agencies that own aircraft for purposes connected with their own business. This brings the total civil market estimate over the next five years to 425 BN-2 aeroplanes of which possibly 150 would best be manufactured in the U.K., the balance of 275 under licence in the U.S.A. or elsewhere.

In conclusion Britten-Norman believe that the BN-2s characteristics render it a suitable type for sale to the military forces of the emergent nations but such sales must be considered as separate from the present programme since, apart from other considerations, some form of licence manufacture may be involved.

Britten-Norman have taken into account the possible sale of a licence to a manufacturer in North America or elsewhere in the programme costings.

Design and Construction Team.

The BN-2 design study was completed by Britten-Norman in December 1963 when a board decision to proceed with the project was taken.

Accordingly two contracts were signed with the Miles group. One contract covers the secondment of five senior design draughtsmen to expand B-N's own technical team, the other is for the coverage of the BN-2 under Miles' ARB design approval. This arrangement, which was made with the approbation of the Air Registration Board, places primary responsibility for the design on B-N whilst primary responsibility for airworthiness devolves upon Miles.

The BN-2 design team is therefore composed of B-N's technicians who have carried through the design of the three Cushioncraft machines and the team from Miles who have been concerned with the design of the Miles and Beagle aircraft. This composite team is working extremely well.

On the manufacturing side B-N's works organisation has received approval from the ARB for the manufacture of aircraft sub-assemblies and this approval will be uprated to full approval in step with the programme.

The works team on the BN-2 has been built up around a production engineer and several aircraft leading hands who have, since the war, been engaged upon the various light aircraft prototypes. Design work, prototype construction and the recruitment of skilled men are going forward in accordance with the schedule laid down.

Fortuitously the BN-2 project was initiated at a time when re-arrangements in the structure of the British light aircraft industry made the experienced Miles light aircraft technical team available to Britten-Norman.

BN2 GENERAL ARRANGEMENT

Britten-Norman Ltd - Bembridge Airport - IOW - England
Tel: Bembridge 2511/5 Cables: Britnor Bembridge

PERFORMANCE

I.S.A. CONDITIONS AT 5,700 lb. A.U.W

Maximum speed: M. S. L.	168 m. p. h.
Cruise 75% at 6,500 ft.	157 m. p. h.
Cruise 67% at 9,500 ft.	155 m. p. h.
Cruise 59% at 13,000 ft.	150 m. p. h.
Stalling speed (flaps down) power off	55 m. p. h.
Take-off run (with flap)	720 ft.
Take-off distance to 50 ft. (with flap)	940 ft.
Landing run with brakes	420 ft.
Landing distance over 50 ft. screen with brakes	990 ft.
Rate of climb M. S. L.	1,220 ft./min.
Rate of climb (critical engine) M. S. L.	245 ft./min.
Absolute ceiling	19,200 ft.
Service ceiling	17,600 ft.
Ceiling—one engine stopped	7,000 ft.
Range @ 59% power	810 miles

I.S.A. +20° C at 5,700 lb. A.U.W

Take-off run (with flap)	870 ft.
Take-off distance to 50 ft. (with flap)	1,140 ft.
Landing over 50 ft. screen	1,050 ft.
Rate of climb M. S. L.	1,150 ft./min.
Rate of climb—one engine stopped M. S. L.	215 ft./min.
Ceiling—one engine stopped	6,300 ft.

BRITTEN-NORMAN LTD

BN2 'ISLANDER'

A completely new twin-engined transport for the commercial short-haul operator

RUGGED SIMPLE
ECONOMICAL

This B-N sales leaflet for the 1966 SBAC Farnborough Show presented the BN-2 Islander in its near production form with an increased wing span and powered by Lycoming O-540 engines in place of the lower powered Continental engines used when it first flew in June 1965.

Britten-Norman, Cushioncraft and Hovertravel

For Britten-Norman the early 1960s must have been a very busy time. Following on from their overseas aerial crop-spraying ventures, the launch of the first full size hovercraft, the Saunders-Roe SRN-1, in 1959, John Britten and Desmond Norman designed their own hovercraft under the Cushioncraft brand name, the CC-1. Funds for design and construction of the CC-1 came from Fyffes and arose from the need to overcome difficulties when transporting bananas from their plantations, in remote locations poorly served by roads, to sea ports for export.

The CC-1 incorporated some novel features including a peripheral lift fan driven by means of a Jaguar car wire wheel and tyre powered by a Coventry Climax car engine. For propulsion the CC-1 employed a pair of Hiller helicopter tail rotors driven by separate power take-offs from the main engine. The CC-1 was the second full size hovercraft in the world to be built and hovered.



Cushioncraft CC1, G-APYH, parked outside the hangar at Bembridge (Peter Gatrell).



The CC1 is seen here being tried out inside the hangar with Desmond Norman at the controls and Peter Gatrell (left) and John Britten steadying the craft (Peter Gatrell).

The CC-1 proved to be difficult to control and CC-2, CC-3 and CC-5 cushioncraft designs soon followed. These types were all experimental and used a variety of techniques for generating the air cushion and for directional control.

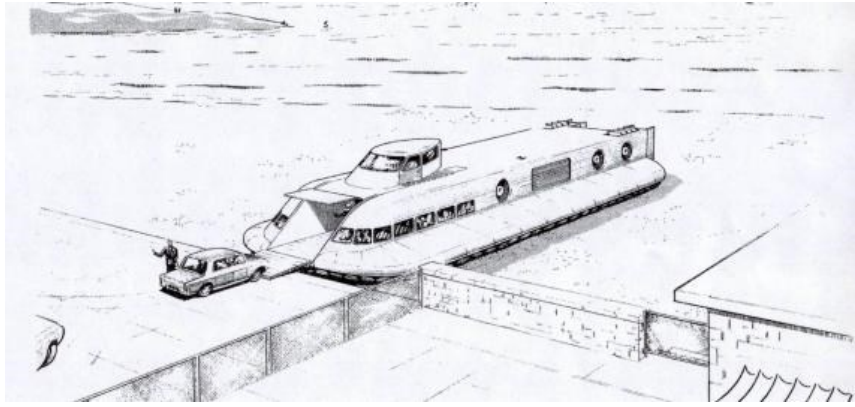


The CC5 was a light utility craft that used centrifugal fan system and proved to be significantly quieter in operation in comparison with earlier designs.

This electric powered model of the Cushioncraft CC5 has been built by VCN restoration team member, Mark Porter.

At the time when the cushioncraft work was under way in the early 1960s, by chance John Britten and Desmond Norman had met up with Don Robertson at Bembridge through their interest in sailing boats. Through this association the idea of operating a hovercraft service across the Solent was formed which resulted in setting up a new company, Hovertravel. Don Robertson became the managing director with John Britten, Desmond Norman and Frank Mann as directors

Britten-Norman, Cushioncraft and Hovertravel (Continued)



The CC6 cushioncraft design was projected as a car carrying craft for the new service. Models of the CC6 were made and tested on Bembridge Harbour as seen below.



However, the CC5 never went ahead and Hovertravel set up their service with SRN5 hovercraft from the British Hovercraft Corporation at East Cowes.

With the increasing demands of the BN-2 project, the Cushioncraft work was hived off as a separate business and went on to produce the CC7 type which was reasonably successful and a small quantity of this type was taken up by the Army and the Royal Marines. In the late 1960s all Cushioncraft interests were sold off by Britten-Norman to the British Hovercraft Corporation.

Hovertravel was managed for a number of years by Christopher Bland, following on from his position managing Cushioncraft Ltd as a subsidiary of Britten-Norman. Eventually Christopher Bland took ownership of Hovertravel until 2008 when the Bland Group (no connection) took up a 99.9% shareholding in the company.



In 2015 Hovertravel celebrated its 50th year of operation and in 2016 a new class of hovercraft will be introduced into service, the 80 passenger Griffon 1200TD.

The Caribbean region has been a popular area for Islander operations for nearly 50 years. With short hops between small islands having only the most basic landing grounds, the Islander is ideally suited to this type of operation. Of several operators in the region, Air Flamenco stands out as having the largest fleet of Islanders in commercial Service. Thanks go to Allan Wright of BN Historians for the following contribution to BNAPS News about Air Flamenco and its present day operations.

Air Flamenco

Air Flamenco is based at Isle Grande Airport, San Juan, in Puerto Rico in the Caribbean. The airline is a key part of “Charlie November’s” story as it was from Air Flamenco that we purchased “Charlie November” in 2000. We were hosted by Ruben & Paco Torres during our week long stay in Puerto Rico in 2000 when “Charlie November” was dismantled ready for the return to the UK.

In 1976, Flamenco Airways was founded by Rubén Torres Senior and later directed by Noemí González, father and mother of Rubén and Francisco. Flamenco Airways operated for 22 years until 1998 and over this time use 14 Islanders, including “Charlie November” as N290VL.



Following the demise of Flamenco Airways, the Torres brothers started to provide services with a Cherokee 6 which has a capacity for 5 passengers. Those flights took place between the islands of Culebra and Vieques. Six months after initial operation they acquired their first twin engine BN-2 Islander with a capacity of 9 passengers. With this new aircraft their service expanded with more passenger routes and US postal service between the two islands of Vieques and Culebra and the main island of Puerto Rico. Within the following five years, Air

Flamenco increased its fleet to 9 aircraft expanding its services and charter flights throughout the Caribbean Islands including US and British Virgin Islands.



N913GD (198) is one of the two Islanders acquired in 2009

In 2009 the airline acquired 2 other Britten Norman Islanders specifically for cargo flights. As the cargo business increased, Air Flamenco added the Shorts 360 to their fleet, and currently operates two examples of the type.



Air Flamenco Shorts 360 N915GD, another British built aircraft in the fleet.



Air Flamenco has recently started repainting their fleet in a new colour scheme.

N904GD (2128) is the latest and features a colourful puffin on the tail. Other aircraft feature different animals.

Further Islanders have been added and Air Flamenco now operates 11 of the type, making the airline the largest civilian operator of BN aircraft in the world.

In April 2016 a Trislander was acquired from Mexico, which will also be used for cargo. It is understood that more Trislanders are being sought.



The airline is based at 4 locations: Fernando Luis Ribas Dominicki Airport better known as the Isla Grande Airport, San Juan; José Aponte de la Torre Airport, Ceiba, Puerto Rico; Benjamín Rivera Noriega Airport, Culebra; and Antonio Rivera Rodríguez Airport, Vieques. Current destinations are cities in Puerto Rico, the Leeward Islands, and the Dominican Republic. Air Flamenco is currently the largest Britten-Norman Islander operator. Air Flamenco flew under an air charter license until 2011. The FAA ordered the carrier to cease and desist exceeding the requirements of an air charter company as they were in actuality operating a commuter air service without license. They have since obtained a license to fly as a commuter air service air carrier. The air carrier is a VFR-only approved carrier.

The objective and commitment of Air Flamenco is to provide a safe and excellent service, keep improving, and expanding operations maintaining a very high quality service. Their expertise and resources throughout the Caribbean region enable them to construct tailor made travel packages to suit all individual budgets with a personal treatment.

Allan Wright, May 2016.

Thanks to Air Flamenco for information from their website (www.airflamenco.net) and some of the photographs from their Facebook page.

Air Flamenco Fleet Summary

c/n	Reg Mark	Date Acquired	Op Status (May 2016)
198	N913GD	11.09	In service
239	N909GD	7.07	Destroyed 3.10.13
338	N821RR	9.08	In service
339	N905GD	7.03	In service
340	N903GD	4.06	In service
341	N910GD	4.09	Sold 9.13
625	N903GD	2.01	In service
626	N914GD	11.09	Sold 10.11
789	N4915U (re-reg N917GD)	1.14	In service
855	N901GD	8.99	In service
905	N902GD	7.00	Destroyed 29.9.04
1044	N920GD	4.16	In service
2040	N908GD	11.06	In service
2128	N904GD	10.02	In service
2248	N203PR	3.12	In service
3008	N906GD	5.05	In service

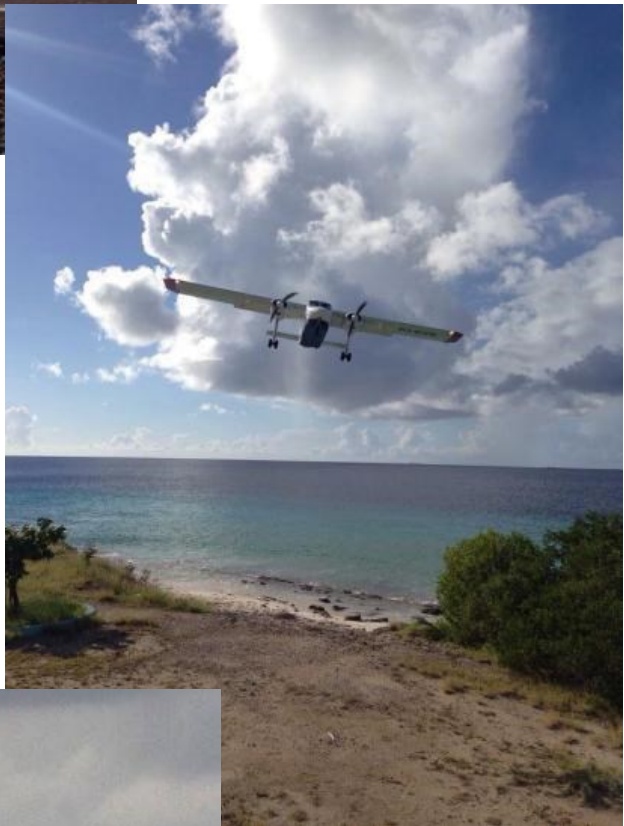
Islanders in Action

The images below, posted recently by Roberto Ruiz on BNAPS facebook pages, show the Islander in action doing what it does best – connecting together remote and inaccessible parts of the world:



Islander HC-CMQ ?, c/n 270, operated by Aeroconexos in Ecuador is seen on the left at the point of taking off, on this occasion using a runway with a reasonably good surface.

On the right Islander PJ-EZR, c/n 592, operated by EZ Air, on final approach over the seashore and lining up to land.



On the left an Islander climbs away in torrential rain and bad visibility after taking off from a flooded runway. The aircraft is believed to be TI-BGK, c/n 427, of Carmonair Charter, San Jose, Costa Rica.

End of the Line for the K Club Islander in Antigua?

Reports received from Antigua resident, Tony Meston, have revealed the sad demise of the K-Club Islander, V2-LDM, c/n 2180. The aircraft is parked in a remote part of Antigua's international airport and can be seen from the nearby public road. Quite what the future holds for V2-LDM is uncertain – already a number of parts have been removed, although the engines and propellers are still in place.

First flown in March 1985 as G-BLDW, c/n 2180 arrived in Antigua in December, 1989, when it was acquired by Carib Aviation. Subsequently ownership passed to the K-Club Hotel, St Johns, Antigua and it is reputed that Princess Diana has been a passenger.



Left, V2-LDM as viewed from the public road and on the right is a close up view. The photographs reveal that the nose cone, cowlings, wheels, nose leg, port landing gear, ailerons, flaps, rudder, tail plane and elevator are missing. Other photographs available show that instruments and seating have been removed. It looks as though V2-LDM has passed the point where a rebuild would be an economic proposition – but you never know. Photos are courtesy of Tony Meston.

Aurigny Air Services Trislander Retirement Update - May 2016

At present it is understood that no date has been set for the retirement of Aurigny Air Services remaining Trislanders which continue to serve the Alderney to Southampton route. The service is shared with the available Dornier 228s that will eventually take over this route. It looks as though the familiar sound of Trislanders over Southampton will continue to be heard for a few months more – watch this space.



This view was posted on the Save G-JOEY facebook page and shows typical scene at Guernsey Airport from the time when Aurigny Air Services Trislanders were in their heyday

Aurigny Air Services Trislander G-JOEY Update - May 2016

G-JOEY Awaits Guernsey Tourist Attraction Planning Permission

Aurigny Air Services Trislander G-JOEY retired from service in June, 2015, after serving the islands, Southampton and Dinard for almost 40 years. Meanwhile G-JOEY is being kept in open storage alongside the Anglo Normandy Aero Engineering hangar at Guernsey Airport.



G-JOEY parked by the Anglo Normandy Aero Engineering hangar at Guernsey Airport, with one of the replacement Dornier 228s in the background.

Originally it was thought the aircraft would end up in a museum in England, but late last year talks began to keep it in Guernsey. If planning permission is given, G-JOEY will be kept at Oatlands Village.

The attraction was bought by Chris Coles last year and he has already asked for planning permission for a refurbishment including repairs to the brick kilns, which date back to the 19th Century, and extending the restaurant.

A further application for three barns, including one to house G-JOEY, will be made if planners agree to remove a 35-year-old planning condition. Chris Coles said the aim for Joey's World was to provide an "inspirational and educational message to young people" and to "reimagine Joey so that he has universal appeal". He said he hoped to have a simple simulator for children to try flying between Guernsey and Alderney and provide supervised access to the plane's cockpit.

Mark Darby, CEO of the aircraft's owners Aurigny, said Mr Cole's "enthusiasm for displaying Joey was infectious" and he felt it would be the "perfect home" and that "The proposal to store Joey undercover is important because the aircraft must be protected from the elements."

Paul Belben, who is behind the 5,700-strong Save Joey Facebook group, said: "Interesting news that Joey will be housed in a new purpose-built barn, if permission is given. I am also looking forward to seeing the arrangements for keeping Joey preserved. It will certainly be a very unique attraction for Guernsey."

Recently G-JOEY was one of the star attractions at the Guernsey Aero Club's open day on Sunday 15 May.

OPEN DAY
Sunday 15th May 11am - 4pm
at Guernsey Aero Club

- Special "on the day" 20 minute trial lesson
- Watch the airport action from the balcony
- Air Search Islander
- Air Ambulance
- Airport Fire Truck
- Air Scouts Jet Provost Cockpit
- Access to our apron, aircraft and hangar
- Pro Flight Simulator
- Competitions for prizes
- BBQ & Afternoon Tea

GUERNSEY AERO CLUB

Get up close to the airport action

COME AND SEE BIG AND JUNIOR JOEY!

Jet Provost cockpit

For further details email
 manager@guernseyaeroclub.com
 or call Guernsey Aero Club
 on 01481 365267

Guyana's Roraima Airways Builds Up Trislander Fleet

Guyana's Roraima Airways recently unveiled its flagship Trislander, 8R-GRD, on 25 April, 2016. The company has said it plans to have a fleet of 5 Trislanders to boost its aviation capacity for the domestic air travel market. The aircraft has the Golden Jubilee 50th Anniversary Logo emblazoned on its nose; and was named in honour of the late Captain Alvin Clarke, a career pilot who had been attached to the airline for many years. Renowned as a skilled airman in nightly medical evacuation flights, the name of the late Captain Clarke is a conspicuous decoration on the aircraft's tail.



Trislander, 8R-GRD, parked on the ramp by Roraima Airways hangar at Ogle Airport for its unveiling on 25 April.

*This aircraft is the ex Blue Islands Trislander G-BEDP, c/n 1039, originally acquired by Golden Arrow Airlines and originally registered as 8R-GGB.
(Photo - Roraima Airways/
Guyana Times).*



*Ministers Catherine Hughes and Annette Ferguson (centre) with Roraima Airways staff and invited guests attend the unveiling of Trislander 8R-GRD at Ogle Airport on 25 April
(Photo - Roraima Airways/
Guyana Times).*

Roraima Airways's principal, Captain Gerald "Gerry" Gouveia said the company invested in aircraft which matched the reality on the ground, that is, the runways. The Trislander aircraft type has brought down the price of air transportation in Guyana and the air fare to the famous Kaieteur Falls had dropped from US\$200 to US\$145, the latter price being offered by Roraima Airways at present. BNAPS sends all best wishes to Roraima Airways for their new venture.

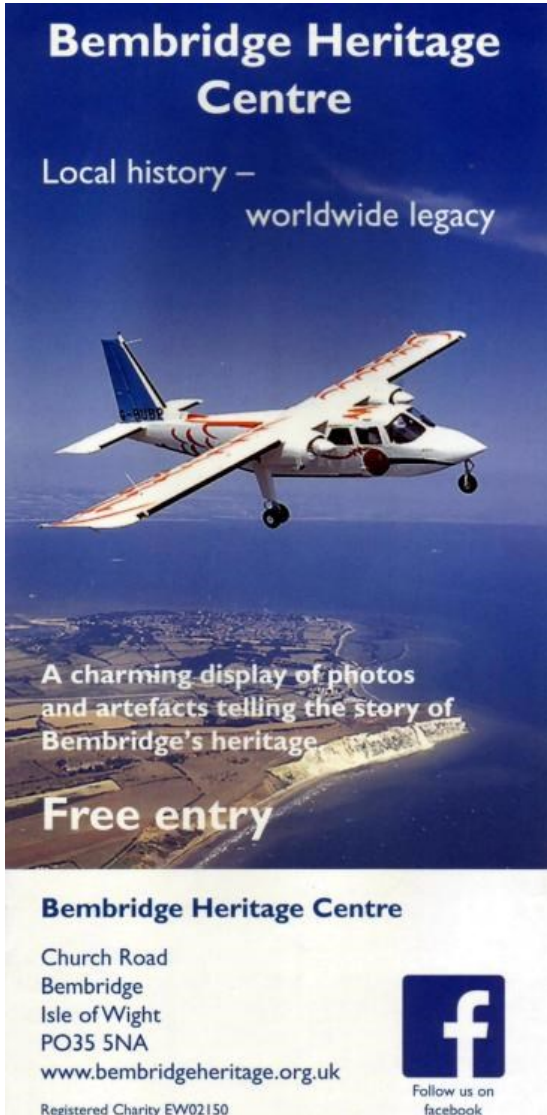


Roraima Airways has acquired two Trislanders from Great Barrier Airlines, ZK-LGC, c/n 1042, and ZK-LGF, c/n 1023, seen here after arriving in Guyana. In addition Trislander ZK-LOU, c/n 322, was bought for spares together with Islander ZK-REA, c/n 43.

(Photo courtesy of Learie Constantine Barclay)

New Aviation History Display at Bembridge Heritage Centre

A new display about the history of Bembridge Airport and the Britten-Norman company has recently been opened at the Bembridge Heritage Centre. The centre has featured a display about local aviation set up by Peter Gatrell, Bembridge Heritage Society and BNAPS Suporter. This display has now been supplemented with a new display that was created by Bembridge Heritage Curator/Archivist and BNAPS Supporters Club member, Noel Stimson, and features a selection of models of the Islander, Defender and Trislander together with a presentation display facility.



Bembridge Heritage Centre

Local history –
worldwide legacy

A charming display of photos and artefacts telling the story of Bembridge's heritage


Free entry

Bembridge Heritage Centre

Church Road
Bembridge
Isle of Wight
PO35 5NA
www.bembridgeheritage.org.uk

Registered Charity EW02150

Follow us on facebook



The Islander

designed and built in Bembridge, with over 500 still in use around the world today.

Follow the history of Britten-Norman, the company set up by John Britten and Desmond Norman in 1954, and all who worked with them to make the Islander an outstanding success for the British Aviation industry.



View of the display area (upper right). A model of B-N Islander G-AVCN is part of the display as seen on the right.

Bembridge Heritage Centre is situated behind the library in the village centre.

The centre is open from April to October, Monday, Wednesday and Friday 11:00 am -3:00 pm and Saturdays 11:00 am -1:00 pm.

Admission is free, all donations are gratefully received.



G-ATCT Mystery Photos

Some photos have recently been donated to BNAPS by Taffy Lloyd's family including two photos of G-ATCT that are somewhat intriguing. Taken from the office above the Propeller Inn, the first photo, below left, shows G-ATCT undergoing an engine run and it looks as though it is painted white with the registration letters on the fin, the C seeming to have partially detached. The second photo, below right, shows G-ATCT with the registration on the side of the fuselage. The best guess is that the photos must have been taken a day or two after the first flight before it was painted in the B-N scheme to go to the Paris Air Show on 17 June, 1965.



Can You Help? - BNAPS would like to hear from anyone who can help with more details about the photos of G-ATCT and the sequence of events leading to its departure for the Paris Air Show on 17 June, 1965.

G-ATCT and G-ATWU at Farnborough 1966 – Bob Ward Reveals All

Bob Ward has given BNAPS some information about G-ATCT and G-ATWU that appeared in the flying display at Farnborough in 1966. Bob attended the show and confirms that G-ATWU was flown by Duncan McIntosh of Loganair and that Jim Birnie Snr flew G-ATCT.

Islander No. 100 Roll Out July 1969 – Were You There?



A notable event took place on 24 July 1969 when the 100th BN-2 Islander, G-51-35, c/n 100, was rolled out at the Bembridge Works. This aircraft was one of a number of Islanders supplied to Aerial Tours, Port Moresby, Papua-New Guinea. It was delivered on 15 September 1969 and registered as VH-ATV, later to be registered as P2-ATV with Douglas Airways.

BN-3 Nymph – New Painting by Ivan Berryman

The original painting will be offered for sale at a later stage, price to be announced. A3-size prints are available immediately at a discounted price of £35 for BNAPS Supporters Club members. Normal price for general sale is £40. All prints are signed by Ivan Berryman and will be one of a numbered limited edition. Postage and packing is not included, where possible prints will be delivered by hand.



BNAPS "Islander 50" Items for Sale

(See page 28 for How To Order details)



B-N cap as illustrated with original style logo
£7.50 + £2.00 UK p&p



Islander 50 commemoration mug incorporating images of the "First of the Many" and "First Man Out" artworks plus "Islander 50" badge
£6.00 + £2.50 UK p&p



"G-AVCN Restoration Project - The Continuing Story" book, 3rd Edition, full colour, 28 pages,
£4.00 + £1.80 UK p&p

"BN-2 Islander - 50 Years On" book, full colour, 24 pages,
£4.00 + £1.80 UK p&p



"Islander 50" stickers 50p each or 3 for £1.00. Post free if included with other purchases

"Islander 50" DVD

BNAPS has produced a 45 minute DVD covering "Islander 50" and all that happened on the 13 June 2015 to make it a memorable occasion. The DVD is priced at £10.00 including UK p&p.



Islander 50 artwork prints signed by Ivan Berryman, £30.00 each + £5.00 UK p&p



"First of the Many" Islander prototype, G-ATCT, is shown departing Bembridge Airport to go to the Paris Air Show on 17 June 1965



"First Man Out" depicts the occasion when Tony Austin made the first ever parachute drop from an Islander in September 1965



BN-2 Islander G-ATCT - Farnborough 1966 Livery

Other BNAPS Items for Sale

BNAPS Ltd is the sales arm of BNAPS, selling books, prints and memorabilia etc., and makes a significant contribution to our restoration funds. These items can be purchased direct from BNAPS Ltd, at BNAPS events and sales stands and by mail order. If you need a current price list or wish to purchase specific items please contact BNAPS Ltd Sales by e mail sales@bnaps.org.uk



BNAPS mug decorated with a striking image of G-AVCN and is dish washer proof. Price for BNAPS Supporters is £5.00 and for non-members £6.00, UK p&p is £2.00.



G-AVCN Postcard Set
8 cards in a presentation folder
£5.00/set including UK p&p



BNAPS fridge magnets and key rings-
Price for members is £2.00, for non-members £2.50
UK p&p is £1.00

BNAPS on the Internet - information about BNAPS, including back issues of BNAPS News, can now be found from the following link: www.bnaps.org.uk

More BNAPS Supporters Needed

If any BNAPS Supporters Club member knows of someone who would be interested in joining please pass on contact details to our BNAPS Membership Secretary, Rita Edgcumbe at sales@bnaps.org.uk

The principal aims of the BNAPS Supporters Club are:
"to assist BNAPS to preserve the history and aircraft of Britten-Norman through member donations and to provide assistance with the day-to-day operations of the charity"

Anyone with an interest in local aviation heritage is welcome.

As a point of clarification, whilst BNAPS has contact with B-N Group from time to time, as a charitable trust BNAPS is an independent organisation.

Forthcoming BNAPS Events

At present we have yet to find a suitable venue for our BNAPS Social Evening meetings.

It is hoped that BNAPS News continues to provide timely and informative reports about the restoration work and what has been achieved.

If anyone has any questions or needs more information about BNAPS activities and what is happening please do not hesitate to get in touch.

BNAPS

BNAPS is a Registered Charity, No. 1100735, set up to "preserve the history and aircraft of Britten-Norman with the support of members' subscriptions, sponsorship and donations"

BNAPS registered address is:
7, William Close
FAREHAM,
Hampshire,
PO14 2PQ

Trustees are Peter Graham, Bob Wilson, Guy Palmer and Bob Wealthy.
Bob Wealthy is currently the Trust Chairman.

How to contact BNAPS:

Email:

bob@bnaps.org.uk

Telephone: 01329 315561

Post:

BNAPS (Dept NL)

c/o

7, William Close,
FAREHAM,
Hampshire,
PO14 2PQ.