BNAPS News January 2019

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Islander G-AVCN Restoration Enters Final Assembly Phase

Top coat spray painting of the wing, elevator and main landing gear leg fairings was completed by mid-December. This represents the achievement of a key milestone by the restoration project team and enables work for the final assembly phase to get under way.

View of the wing upper surface after top coat spray painting.

View of the elevator after top coat spray painting.

Restoration team members at the workshop for the Christmas get together on 20 December.

Reconstruction of the wing was seen as one of the major challenges of the restoration project. Back in October 2015 the prospects did not look too promising, in part because of the amount of damage and degradation to the wing structure that had to be put right, but also this work was lagging behind due to the limitations of the workshop at Harbour Farm, Bembridge. However, after moving to the larger workshop at Brickfields in March 2016 and much dedicated effort by the restoration team, restoration of historic Islander c/n 3, G-AVCN, has now reached the stage where final assembly can get under way – for more about restoration progress see the latest report on pages 3-14.

New build BN-2B Islander c/n 2314, G-CKYC, made its first flight on 8 January 2019 at Solent Airport – see more of the story on page 27.

In this issue of BNAPS News:

BNAPS Supporters Fund Raising Appeal – January 2019

Dear BNAPS Supporter,
Fund raising is still of critical importance to enable completion of the final assembly during the early part of 2019 and to ensure safekeeping of our restored Islander G-AVCN pending availability of a suitable place on the Isle of Wight for it to be on public display.

The plan is to remain in the present workshop during 2019 to keep Islander G-AVCN under cover. For 2019 the workshop will be re-arranged to provide more access for viewing, with more opportunities at open days and pre-arranged individual and group visits. BNAPS must raise sufficient income from fund raising initiatives, special events and merchandise sales that will cover rent, insurance and other expenses.

If you wish to support the fundraising appeal please contact BNAPS by email 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

Supporting BNAPS and Restoration of B-N Islander G-AVCN

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G-AVCN Restoration Progress Report
November 2018 – January 2019

1. Fuselage: Work on the door trim panels and window surrounds has been completed and these items are stored ready for installation.

2. Wing: The wing was prepared for painting and the engine bays and centre section masked. Following painting the masking was removed and the wing transferred from the scaffold suspension back to the wheeled vertical profile supports.

3. Ailerons and Flaps: These items are painted and stored in preparation for trial fitting.

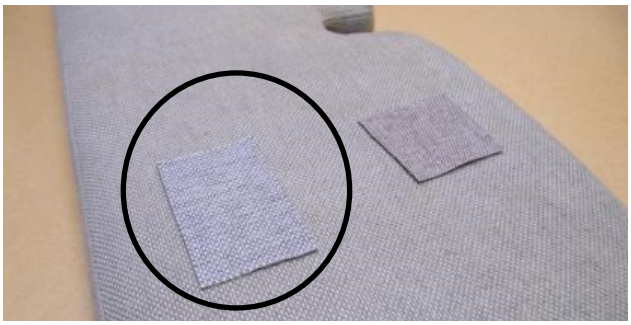
4. Tail Plane, Fin, Rudder, Rudder Trim Tab: These items are painted and stored in preparation for trial fitting.

5. Elevator: This item painted and stored in preparation for trial fitting.

6. Landing Gear: Both main leg tubes have been refitted to the wing and bolted into place in preparation for installing the main gear oleos and axles. The nose gear leg has been fitted to the fuselage.

7. Engine cowlings and engine mounting structures: Awaiting trial fitting and adjustment during the final assembly work. Once fitting work is complete the cowlings will be top coat spray painted.

8. Miscellaneous Items: Main landing gear leg fairings have been top coat spray painted and are stored in preparation for trial fitting.
From a number of upholstery material samples that have been acquired one is a acceptably close match to the existing seating upholstery. Quotes for fabrication of seat covers for the two new seat cushions are now being sought.



Existing seat cushion with fabric samples, best match sample is circled.

9. Final Assembly: The wing was returned to the wheeled vertical stands. This enabled wing to be positioned diagonally across the workshops such that the fuselage could be moved out into the main workshop area and made ready for joining up with the wing.

10. Missing Items List: Bryan Groves has continued to maintain the list as work proceeds. The list has now been set up in a spreadsheet format for ease of maintenance and distribution.

11. Parts Donations: Grateful thanks go to FIGAS for donating a pair of 50 Amp alternators to the project. Thanks also go to Saywell Internation for donation a pair of propeller governors.

Left: One of the pair of 50 Amp alternators donated by FIGAS.

Right: The pair of propeller governors donated by Saywell International

G-AVCN Restoration Progress Report
November 2018 – January 2019 (continued)

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

Picture 1

View of the port underside section of the wing after top coat spray painting.

Picture 2

View of the starboard underside section of the wing after top coat spray painting.

Picture 3

View of the underside centre section of the wing after top coat spray painting.

Picture 4

Elevator and main landing gear leg fairings suspended from the roof beams and ready for top coat spray painting

Picture 5

View of the elevator ready for top coat spray painting.

Picture 6

View of the main landing gear leg fairings ready for top coat spray painting

Picture 7

Wing was covered to prevent overspray while elevator and main landing gear leg fairings were being spray painted.

Picture 8

Another view of the wing after it had been covered to prevent overspray.

Picture 9

View of the elevator and main landing gear leg fairings after top coat spray painting.

Picture 10

View of the main landing gear leg fairings after top coat spray painting.

Picture 11

View of the elevator after top coat spray painting.

Picture 12

Close up view of one of the main landing gear leg fairings after top coat spray painting.

Picture 13

View of the wing underside looking towards the starboard wingtip after all masking had been removed.

Picture 14

View of the wing underside looking towards the port wingtip after all masking had been removed.

Picture 15

View of the wing top surface looking towards the port wingtip after all masking had been removed.

Picture 16

The wheeled vertical support frame was put back in place and the support arrangements constructed from trestles and scaffold poles were then dismantled

Picture 17

Fuselage is seen here being made ready for re-positioning in the workshop.

Picture 18

The wing was moved diagonally in the workshop to provide space need for re-positioning the fuselage. With the nose cone removed there was just enough space to allow the fuselage to be edged past the roof support pillars.

Picture 19

After removing a workbench it was possible to get the fuselage far enough forward to enable it to be swung round and re-positioned.

Picture 20

The fuselage is seen here being moved past the roof supports to a temporary location to await the wing being set up in a horizontal configuration.

Picture 21

View of the fuselage in its temporary location with the wing ready to be moved back to its original location along the centre line of the workshop.

Picture 22

View of the fuselage in its temporary location in the main part of the workshop.
At a later stage it will be moved through 90 degrees and positioned for joining with the wing.

Picture 23

Another view of the fuselage in its temporary location - the nose cone was left off to allow the nose landing gear leg to be installed as part of the final assembly activity.

Picture 24

View of the fuselage with the nose landing gear leg in place.
On the left is the tow bar donated by Anglo Normandy Aero Engineering.

Picture 19

Fairings ready for top coat spray painting.

Picture 20

Wing skin section and fuselage to wing interface panel ready for top coat spray painting.

Picture 21

Wing skin section and fuselage to wing interface panel after top coat spray painting.

Picture 22

Steve Cooley (left) and Bernie Coleman prepare the fuselage for joining with the wing by removing a support frame from the top of the fuselage.

Picture 23

Port main landing gear leg tube is seen here being installed.

Picture 24

View of the wing after port and starboard main landing gear leg tubes had been installed.

G-AVCN Restoration Progress Report
November 2018 – January 2019 (continued)

Work planned for the next period through to end of March 2019

1 Wing:
Compete installation of main landing gear leg tubes and install oleos and main axle assemblies. Install removable lifting eyes to enable the wing to be turned through 90 deg. to the horizontal plane, and then lifted onto horizontal support stands and profile boards pending assembly to the fuselage.
Inspect and fit hinge bearings for the flaps and ailerons.
Trial fit flaps and ailerons.

2 Fuselage:
Remove pilot's door and investigate incorrect fit that resulted in abrasion of door frame. Remove the bush from the top fuselage mounted hinge. Manufacture and fit a new bush with offset hinge-pin drilling. Trial fit the door to the fuselage and adjust hinge bush as necessary.

3. Elevator and Tab:
Complete and ready for final assembly.

4 Fin:
Apply Aurigny heraldic lion logos to both sides of the fin.

5 General:
Move fuselage to the required position under the wing.
Start assembly of wing to fuselage.

Another Islander for Restoration?

Tony Deamer of Unity Airlines made a detour on the delivery flight of Trislander YJ-OO19, see story on pages 29 and 30, when he visited Apia in Samoa to take a look at an abandoned Islander 5W-CSJ, c/n 833. Whether anyone in the South Pacific Region will rise to the challenge is open to question but it would look nice when it is finished no doubt. The photos below of the Islander in Apia give some idea of what happens to an abandoned aircraft – but with a bit of de-corroding and a lick of paint it could be as good as new!!

Islander c/n 833 was acquired by Samoa Air in August 2012. Previously it was with Pacific Sun in Fiji as DQ-FCX. The reason for its demise is not known at present (All photos Tony Deamer)

Reflections on the BN-2 Islander in 2019

In recognition of the fact that the Britten-Norman BN-2 Islander and variants have now been in production for over 50 years, it may be of interest to take a look at what was done to get the BN-2 into production as presented on pages 15 -25.

With sales of Islanders, Defenders and Trislanders exceeding 1250+ and with something like 500+ aircraft still in service there is no doubt that the original and inspirational thinking of John Britten and Desmond Norman that led to their BN-2 concept resulted in a product that was able to take the market place by storm. With a reputation for dependability and reliability the multi-role/all-purpose Islander has been seen by many as the "Land Rover" of the skies. Its timeless functional, no frills, design, and its evident suitability for Third Level and outback operations, raises the question as to what might replace the Islander. Or is it the case that the only real replacement for an Islander is another Islander?

Over that past 50 years or so a number of aircraft types have emerged aimed at the sector of the market that was dominated by the Islander. In its class the Islander has largely remained unchallenged, although the Gippsland AirVan is a strong contender and favoured by operators happy to live with a single engine type. The Cessna Caravan has enjoyed wide acceptance, but it is turbine powered and represents major capital outlay for potential owners together with the technical challenges and costs of maintaining turbine engines in remote regions.

Perhaps the most significant competitor to emerge in recent times is the Tecnam P2012 Traveller. The Italian Tecnam company has a long history in the design and development of light aircraft and the experience gained has been put to good use in formulating the P2012 Traveller design. This extract from a recent Tecnam news release summarises the thinking behind the project:

"The Tecnam P2012 Traveller is an eleven seat next generation piston engine twin, designed to comply with both FAR part 23 and EASA CS-23. The P2012 Traveller has a high wing, fixed landing gear and is powered by two Lycoming TEO-540-C1A piston engines capable of operating on 100/130, 100LL and UL100 fuel.

Many airlines, from US to Africa, Asia and Australia, have been demanding a replacement for the many hundreds of 'heritage' aeroplanes in the FAR23/CS23 category currently in service around the world.

The Tecnam P2012 Traveller will first see service as a passenger aeroplane but has been designed from the start to be a very versatile and flexible aerial platform, offering many multi role opportunities including Hydro, VIP, cargo shipping, parachuting and medevac services."

Commuter airline Cape Air, based in New England, USA, operates a large fleet of commuter aircraft including around 80 Cessna 402 and 4 Islanders. Cape Air has worked closely with Tecnam on the specification for the P2012. Cape Air is the launch customer for the P2012 and has placed an order for 20 with options for a further 80, with deliveries due to begin in the first quarter of 2019.

Coming back to the question of a new competitor for the Islander, Tecnam has made a good start with the P2012 Traveller with Cape Air and its commuter services. It will be of great interest to see whether the P2012 Traveller can gain orders in other market sectors that generally have been dominated by the Islander for many years.

The Britten-Norman Islander Light Transport Aircraft – Design philosophy, development and production

The following is based on an article, titled "The Islander Saga", published in the August 1970 issue of Aircraft Engineering. The author was not named at the time but may have been Andy Coombe, B-N's Chief Airworthiness Engineer.

Introduction

Simplicity is the keynote of the Britten-Norman (B-N) Islander light transport aircraft. Simple in construction and with simple systems, the whole concept of the aircraft was based on the specific needs of the third level commuter airlines and the air taxi companies for an economical and efficient aircraft with excellent payload capacity over relatively short distances.

The fundamental design philosophy behind the Islander was to bring a new low level of operating cost and the potential of a high level of profitability to short haul air transport. For many years the general trend in aircraft manufacture has been to make transport aircraft larger, faster and more complicated; this has applied just as much to small aircraft for the air taxi or feeder line operator as to intercontinental airliners, although perhaps not in quite so dramatic a fashion as occurred with the introduction of the Boeing 747 which presented the airlines with an aircraft having double the capacity of its predecessor.

John Britten (right) and Desmond Norman

The men behind the Islander, John Britten, C.B.E., and Desmond Norman, C.B.E., Joint Managing Directors of B-N were convinced of the need for a robust utility aeroplane from their early experiences in operating a scheduled service commuter route in the Cameroons. As they saw it, there was a gap in the market for an aircraft designed to have minimum capital cost per saleable passenger seat on short haul sectors. In keeping with this philosophy the airframe structure had to be simple and designed with the fatigue problems of small aircraft very much in mind. Laminations were to be used extensively for spars, inter-spar stringers and skin-plating to cut machining costs and to simplify repairs. A high standard of corrosion proofing was needed to give reliability and for operation in all parts of the world.

Ancillary equipment that was already proven and in world-wide use was specified so that the reliability would be of a high order and spares would be easily available. Low wing loading and a high power to weight ratio were necessary to give S.T.O.L. performance without the use of expensive and sophisticated flaps.

A large payload capacity together with a cabin that could be quickly adapted for passengers, freight, ambulance, photographic and geophysical survey, agriculture, parachuting and many other roles were also essential requirements.

In the early days the Britten-Norman partnership made its first venture into aircraft design and construction with the BN-1 light aircraft. Although unsuccessful, the experience gained was to prove invaluable later on. The two entrepreneurs then turned their attention to aerial top dressing and specialised in the refurbishing and conversion of war surplus Tiger Moths that were in demand for agricultural top dressing operations in New Zealand.

Crop Culture Tiger Moth fitted with Micronair rotary atomisers.

The demand for Tiger Moth conversions for this work began to fall off by 1954 and the two partners turned their attention towards the improvement of crop-spraying methods and they developed the highly effective "Micronair" rotary atomiser equipment that offered much greater efficiency than previous spraying devices.

In 1955 B-N became a limited company and a subsidiary, Crop Culture (Aerial) Ltd., was formed at the same time. A task force of two Tiger Moths and an Anson completed a successful season of crop spraying in the Sudan

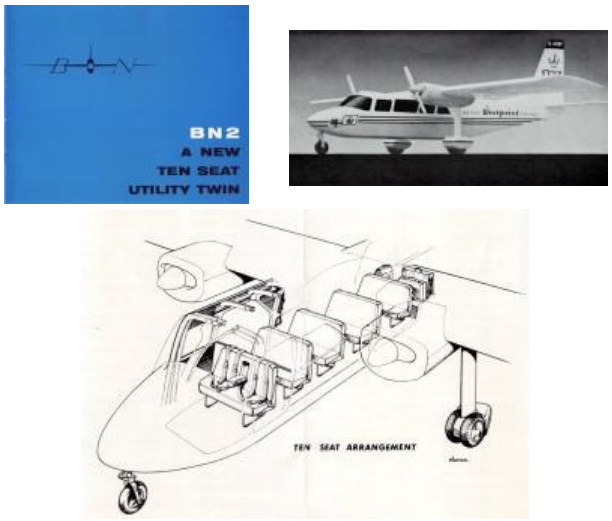
and by 1956 the Micronair equipment was beginning to sell in quantity as it became better known.

John Britten (right) and Desmond Norman (centre) with Crop Culture's Anson G-AHNT support aircraft before setting off for the Sudan

As part of their varied interests the partners set up a company called Cameroons Air Transport Ltd. in 1960 to run a scheduled service linking Tiko with Douala entailing a 15 min. flight across the estuary of the Mungo river in the Cameroons. The alternative was a long and tedious journey over poorly surfaced roads and the air link was soon popular with business people and shoppers as well as transit passengers who wished to join the flights to Europe and other parts of the world from Douala.

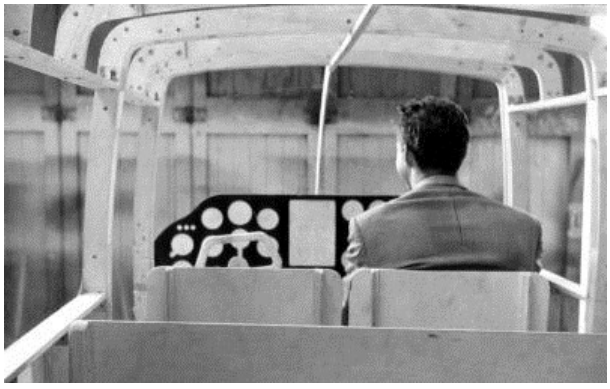
The route is typical of many third level or commuter services for which there is a growing requirement throughout the world, as many small towns with grass strips that used to be served by aircraft such as the DC-3 found themselves out in the cold when airlines re-equipped with jet equipment that was uneconomic when used on very short sectors apart from being incompatible with the airfields. Cameroons Air Transport initially operated a five seater Piper Apache on the Tiko-Douala service, which had the merit of being economical to use, but had the drawback of lack of cabin space when it came to bulky loads. In hot and high conditions its single engine performance was found to be wanting when stricter public transport regulations were introduced, and it was replaced by an Aztec. The additional power of the Aztec was intended to produce more range and a higher cruising speed, but it had only one additional seat. For this type of route the additional performance was of little advantage.

What was wanted was a high seating capacity for the size of the aircraft (coupled with the capability of being able to use the large cabin volume for freight) and reasonable short field performance A survey was made of all the twin engined aircraft available that cost less than £25,000 but there were none that went any way towards meeting the requirements of the route.



Extracts from the BN-2 brochure produced for the 1964 SBAC Farnborough Show.

John Britten and Desmond Norman felt certain that they were not alone in needing an aircraft that would fill this general specification and they decided to design their own solution to the problem. In 1963 John Britten began design work on the new project and in January 1964 the decision was made to go ahead with the building of a prototype.



Desmond Norman in the BN-2 mock up.

Metal was first cut in September of the same year. A mere nine months later on June 10, 1965, the prototype was rolled out of the hangar at Bembridge and the shape of the Islander was revealed. It had a high rectangular wing of generous area and high aspect ratio coupled with large flaps to give good short field performance. The fuselage was long and slim to give a large cabin with wide doors on each side for easy access and with the floor at walk-in height; the frontal area was kept low by the absence of an aisle. A fixed tricycle undercarriage with twin wheels on the main legs resulted in low footprint pressures. In fact

the aircraft looked as it was intended to a rugged workhorse without frills but with the performance to fit the specification it was designed to fill. The rest is history.

Prototype BN-2 c/n 1, G-ATCT, is seen here being prepared for its first flight, early June, 1965.

After an intensive period of initial test flying the Islander appeared at Paris to make its first public appearance in the same month as its roll out.

Prototype BN-2 G-ATCT, now given the name Islander, arrived at the Paris Air Show on 17 June 1965.

There were of course problems in the early development of the aircraft. The prototype had a maximum permissible operating weight of 4,900 lb. and was fitted with *Continental* IO-360A engines of 210 b.h.p.

Prototype BN-2 G-ATCT on flight test after modification to install 260 hp Lycoming engines.

The performance was found to be below the estimates and this was cured to a large degree by extending the wingtips and by modifying the engine air intakes and the nacelle fairings. As the airframe had been provided with inherent stretch, the decision was taken to fit Lycoming O-540 engines of 260 b,h.p. and to increase the maximum operating weight to 5,2001bs. This gave an additional 130 lb. of payload and increased the empty weight of the aircraft to 3,070 lb..

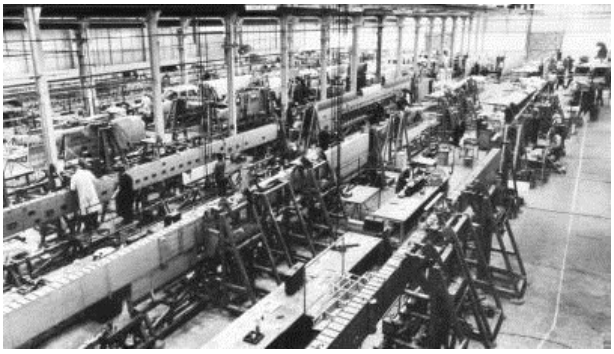
B-N initiated the Islander project as a private venture but once it was under way they came to the conclusion that the potential market was such that their original production goal of about 30 aircraft per year was far too modest. With a view to achieving a viable production flow at the earliest possible moment and of being able to quote firm delivery dates (the smaller the aircraft the less the lead time between order and delivery the customer is prepared to tolerate) led the firm to approach the Government for launching aid. This, however, did not delay the manufacture and flight development of the prototype which went ahead while the Transport Aircraft Requirements Committee was considering and evaluating the Islander. This decision was not reached until the autumn, and in fact the whole cost of the design, prototype construction and the early flight test development as well as the initial production tooling and component building until the end of 1965 which amounted to some £170,000, was met by B-N. At this time the aviation industry in this country had reached its nadir: an entire new generation of military aircraft had been cancelled, The Plowden Committee was deliberating on the future of the British aircraft industry and Richard Worcester was vociferous in his criticism of the industry's wasteful practices and "featherbedding". It was not the healthiest of climates to look for additional resources to support an aircraft project, particularly as credit restrictions were also in force.

A new building was constructed at Bembridge Airport for Islander production, flight test and delivery.

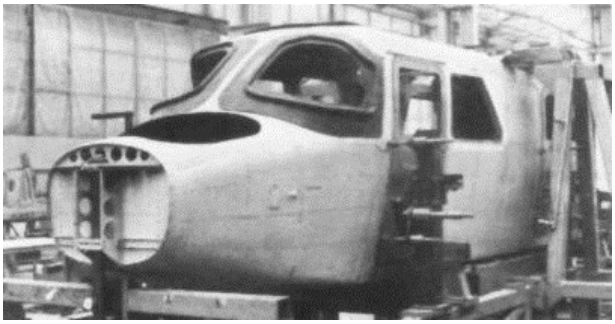
Fortunately the Ministry of Aviation on the advice of the Transport Aircraft Requirements Committee made a recommendation to the

Treasury that the Islander project should be supported on the basis of its achievements at that time and its potential prospects. An announcement was made on November 1, 1965, that the Ministry of Aviation was prepared to meet up to half the launching costs with the usual proviso that the advance would be returned to the Government in the form of a levy on Islander sales.
The launching aid support first amounted to a loan of £190,000. It gave greater impetus to the project and enabled a new factory with an area of 56,000 sq. ft. tailored to Islander production to be built at Bembridge. This significant addition *to* B-N's facilities was brought into use towards the end of 1966, and resulted in a marked acceleration of production. Early in 1967 the orders and increased interest that the Islander had attracted once it had entered service brought additional support from the Ministry of Aviation in the form of an interest-bearing loan of £250,000.

Production Programme
Early in 1968 a radical reorganisation of the production programme was made. The total order book was now over 200 and it was evident that the facilities available at Bembridge were not sufficient to cope with the demand.

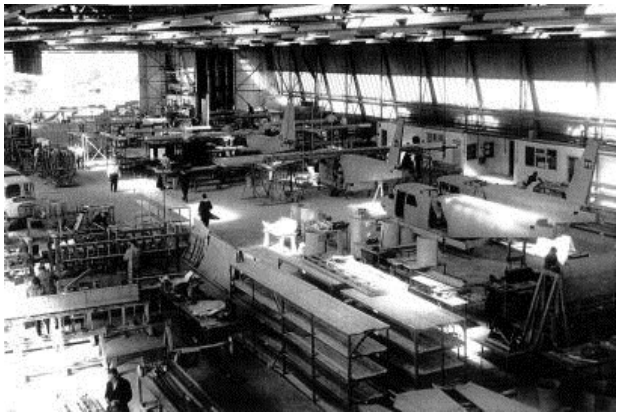


Above – BHC wing assembly line at Falcon Works, East Cowes.
Below – BHC Islander fuselage in a jig



The company already had a subcontract arrangement with the British Hovercraft Corporation (BHC) at East Cowes for the supply of 700 sets of wings for the Islander. This order was now altered to one for the supply of 236 complete airframes at a fixed price against scheduled delivery dates. The new factory at Bembridge was cleared of all component manufacture and was set out for the final assembly lines.

Initially Islander fuselages and wings delivered by BHC to Bembridge to the BHC receiving area before entering the line



Islander assembly line at Bembridge in 1968/69

Westland Helicopters Ltd., like British Hovercraft, a subsidiary of Westland Aircraft Ltd., were also participants in the programme and manufacture components of the Islander at their Weston-super-Mare factory as a supplement to the East Cowes production. Another firm involved in subcontract work is C. F. Taylor (Hurn) Ltd. that produces many of the flying control surfaces such as ailerons, elevators, rudders, tailplane and flaps.

Romaero Islander assembly area in Romania

Romania is also involved in Islander production as the result of an offset deal made when Tarom, their national airline, decided that Western equipment would prove more attractive in the flourishing tourist market. The Romanian aircraft industry was anxious to develop its skills to Western standards which they recognised was an essential factor if they were to have any hope of penetrating Western markets. A package deal was made whereby Tarom ordered five B.A.C. One Eleven airliners and was able to recover some of the cost by their industry building Islanders under licence from B-N.

The basic contract is for the supply of 215 aircraft that are assembled at Baneasa Airport near Bucharest from materials and components supplied by the British company. Completed aircraft are purchased by B-N, with B-N being responsible for all Islander sales.

The aircraft are fitted with a ferry instrumentation package and finished in a basic primer before being flown to Bembridge where the final fitting out for avionics and colour scheme to the customers' requirements is done. The target production rate of four aircraft per month is expected to be reached in the near future; already aircraft are being turned out at a rate of one every ten days.

Islanders were fitted out to customer specification and made ready for delivery at Bembridge

In its early stages the Romanian scheme was backed by engineers from B-N and a full time representative from the Air Registration Board who was responsible for the build being to U.K. standards of airworthiness. Now the aircraft is in full production the A.R.B. and B-N engineers are expected to be withdrawn later this year (1970) and the inspection will be on the basis of periodic visits.

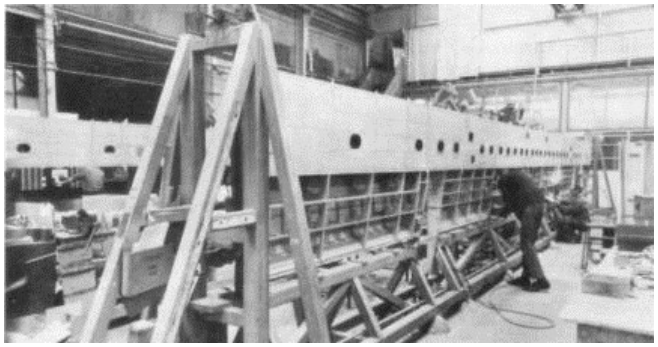
Although the first aircraft produced by the Romanians were assembled from components supplied from Bembridge, they now have a complete set of jigs and their thirteenth was entirely fabricated in Romania using the basic materials supplied by B-N. At the beginning of the project it was impressed on the Romanians that the aircraft must be made according to the drawings and this policy has been strictly adhered to by them.

The first Romanian-built Islanders were checked very closely when they arrived at Bembridge and the standard of workmanship was found to be very high and was thought to match any comparable work in the Western industry. Once delivered to Bembridge, no distinction was made between them and the British-built aircraft.

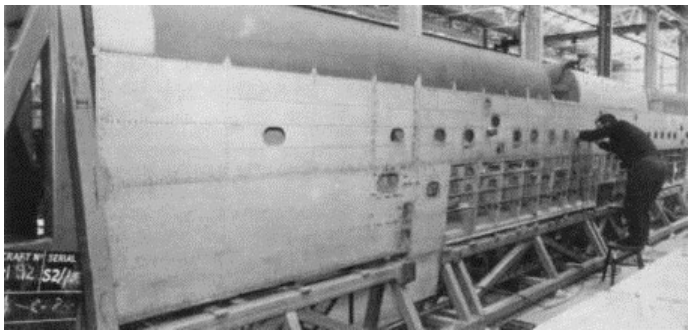
Production Methods

The aircraft is constructed primarily from L72 zinc-free aluminium alloy. This material is well known as having particularly good fatigue characteristics. Another factor affecting this is that the working stress levels on the wing load surfaces have been kept below 2,000 lb/sq in. and assuming that a safe life factor of five is applied, the aircraft would have a fatigue free life of 15,000 hours based on the extremely severe spectrum of 6.8 flights per hour.

Particular care is taken in corrosion proofing that is carried out to a very high standard. All airframe components are sprayed with etch primer and epoxy primer before assembly. Boxed in components are given a double coating. Once assembled, any rivets or parts of the structure which are exposed are also treated before the final application of grey finishing coat.



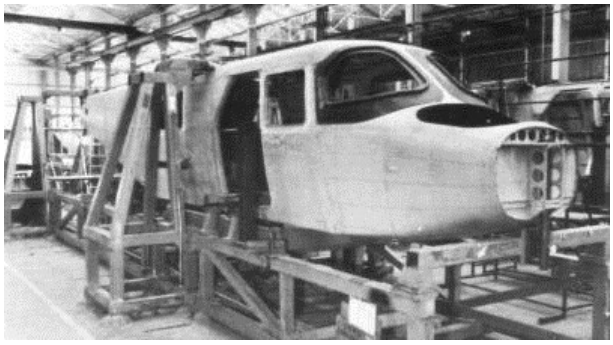
Views of the wing under construction show the torsion box, stringers, formers and skin plating.



The entire wing span is a single continuous structure with separate wing tips. It is of a two spar type, each spar consisting of angle section booms with shear webs of 18 s.w.g. L72 sheet. Together with three inter-spar Z section stringers top and bottom, these, with the skin plating, constitute a torsion box. Special attention is given to the construction of a strong and simple airframe. The use of lamination in the structure, including spars, inters spar stringers and skin plating, serves as an indication of this. Over the central area the spar booms comprise three nested angles. They are Radix bonded and reduce in both directions outboard, first to two sections and finally to one. Outboard of these points the spars are of a lighter section, riveted and butt strapped to make up the complete spar unit.

The Islander production methods are as conventional as its structure. The sheet metal detail manufacture consists largely of routing to shape and drilling, followed by flanging and forming on a rubber-die press. The press is served by two sliding tables and to maintain continuous production it can be fed from opposite sides on to the platter.

The main assembly stages of the Islander are the building of the fuselage and the wing and tail unit as separate components for subsequent joining to form the complete aircraft. Initially the assembly tooling for the Islander was designed by B-N. Since the work is now undertaken by sub-contractors additions have been made for the greater capacity involved. The nose section of the fuselage, the side, roof and floor of the cabin section, the rear fuselage and the tail unit are built at one factory, and further assembly of these sections into the complete component takes place at the Falcon Works of BHC at East Cowes.



View of a fuselage in its assembly jig. The jig is made up from 4 in. square steel tubing to give a rigid structure

The main assembly fixtures are constructed from steel tube, 4 in. square. The rigidity of this material permits the construction of simple basic structures, free from bracing. It also gives maximum accessibility to those working on the structures. The flat faces of the tubing are a further advantage since they facilitate the attachment of brackets and pick-up locations for the key interchangeability points of the components.

The wing is assembled as a complete unit in two main stages, in a vertical position with the leading edge upward. Firstly the torsion box is built and then the wing-structure is completed. In this second stage the leading edge and trailing edge structures are assembled and the engine nacelle structures are fitted to the underside of the torsion box.

The assembly line at Bembridge where Islanders go through seven stages of assembly prior to weighing and flight test

The aircraft, wing and fuselage components are transported by road to Bembridge for the final assembly. There are seven stages of assembly, each one consisting of several assembly operations and balanced on time to permit the aircraft to be moved forward at fixed intervals. The complete operation up to flight status takes 380 man hours.

Close up view of an Islander on the Bembridge assembly line

The wing is joined to the fuselage, the nose wheel, main undercarriage, and flaps and flap controls are assembled. Then the engine is installed, and elevators are fitted to the tail plane and the tail plane to the fuselage. Next is the fitting of the empennage: rudder to fin, fin and rudder to the fuselage. At this stage the ailerons are fitted to the wing, the rudder

fairing and fin dorsal fairing are assembled, the engine-nacelle fairing, undercarriage leg fairings and wing-to fuselage fairings. Brakes and pipe systems are added. The fourth section of the assembly involves electrical wiring, and filling, stopping and cleaning. Then flying controls, fuel cocks and flap actuators are rigged. The trim and cowling windscreen are fitted, and the instruments connected up after cleaning out the piping.

The last stage performed in the shop is the weighing of the complete aircraft. Following this the aircraft is taken outside for final ground checks and engine running. The aircraft then undergoes its initial production test flying prior to being painted to the customer's specification by C.S.E. at Oxford or Marshalls of Cambridge.

The other line in the assembly shop at Bembridge is for the incorporation of customer options for which on the average about 300 man hours are required. The basic build includes heaters and is to a comprehensive standard, as it has been found to be quicker to take out the occasional item that is not required by a particular customer than to add items that might affect the basic structure after the completion of the build.

The 100th Islander was rolled out at Bembridge on 15 September, 1969.

The rate of production at Bembridge in 1970, without the Romanian input, is three aircraft per week, but this rate could easily be stepped up to four or five without difficulty.

Development

The Islander has undergone a steady programme of development since it first flew and this has been divided into two separate areas. The first objective has been to improve the standard product by a process of analysing reports from operators and introducing modifications to the design when this has been proved desirable. The changes have been fed into the production lines as quickly as possible. The second objective has been directed at improving the performance together with an increase in permissible gross weight resulting in a larger payload.

The two programmes proceed in parallel with the common principle of all modifications being designed for retrospective fit. The firm informs the operators of all the improvements and these are on offer as a series of kits to enable the earliest model of the Islander to be brought up to the latest standards.

Product Improvement

A system of analysing field reports from operators was initiated which showed the pattern of recurring minor defects and the requests for changes to the aircraft, and made apparent the priorities to be applied to the product improvement programme. A further input to the programme had resulted from visits to Bembridge by Islander operators who have often made valuable suggestions resulting from their experience in the field.

Islander c/n 2 G-ATWU was used for trials to evaluate in service modifications.

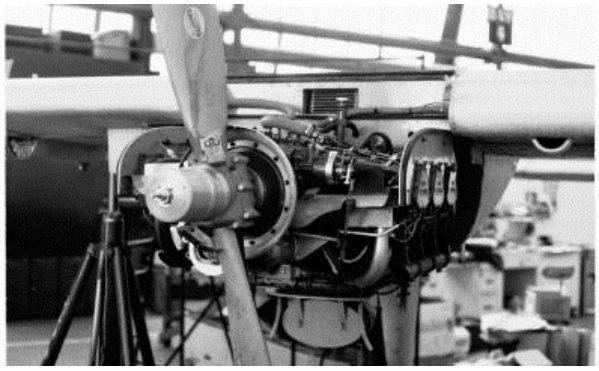
The analysis system has resulted in many minor improvements which are first fitted as trial installations on the company's trials aircraft to find out if the modification is effective and whether it would give rise to other problems when introduced into service. The aircraft rarely flies more than ten hours per week with the result that a certain amount of time is needed before a modification can be proved to be worthwhile.

Improvements at present under way include items such as improved braking systems, improvements to heater muffs and cabin heaters and various alternative avionics packages. Certification is expected before the end of the year.

Several other improvements have been made. One of the most important was a new design of cabin interior, with the aim of producing a more robust standard of trim that would be easier to remove for cleaning and of a quality comparable to their competitors. The decor gave a new look and the materials, the furnishing and the method of attachment changed. Close attention was also given to the ability of the interior to withstand tropical environments.

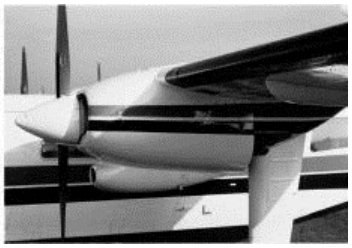
Performance Improvement

In common with all twin-engined aircraft, the Islander is primarily limited in its performance by its single engine capability with the flaps retracted.



Lycoming 260hp O-540 engine installation, key to the islander's success

The Islander was originally certified in 1966 at an a.u.w. of 5,700 lb. but it was not long before it was uprated to 6,000 lb. by the introduction of some minor modifications. At this time the single engine ceiling in ISA conditions was 5,200 ft. The engine nacelle shape was investigated at this stage and the seventieth aircraft off the production line was fitted with a new square shaped rear nacelle and undercarriage leg fairings of increased chord. This modification NBIM/358 resulted in a dramatic improvement to the performance by increasing the single engine ceiling by nearly 2,00Oft. and the cruise speed by 4 to 5 knots.

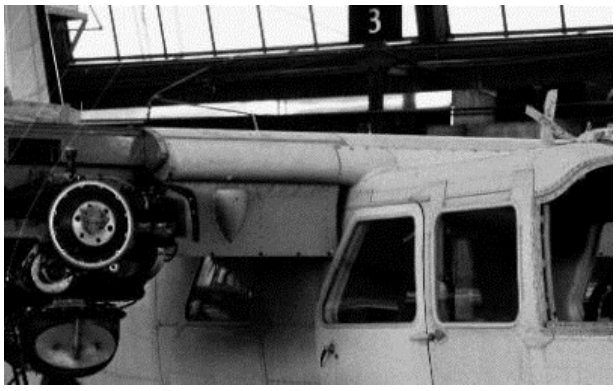


Views right and above show the later production configuration of engine cowlings, rear nacelle fairings and main landing gear leg fairings.

The B-N flight test department regarded this as the minimum increase achieved as several operators reported increases of up to 10 knots. The increase in performance was basically due to the reduced induced drag resulting from the replacing of a virtually three dimensional flow by a two dimensional flow. The installation of the new nacelle and undercarriage leg fairings raised the maximum operational weight as far as the single engine performance was concerned to 6,300 lb.

The company then investigated the possibilities of clearing the structure to the same weight and found, owing to the conservative approach that they had adopted in the early days when stressing the design, that the weight could be achieved with no structural change to the aircraft. This was due to the high stalling speeds that had been used for the basic stressing. Flight test results showed that the stall speeds were in practice from six to seven knots slower than those used for stressing purposes. When these were used in the construction of a flight envelope it was possible to add a surprising amount of weight to the aircraft to give the same stresses as originally predicted. At the new weight the aircraft met the structural requirements of the British and American airworthiness authorities without any restriction.

To meet the performance requirements at the increased weight some changes were found to be necessary, particularly in the U.S.A. where there is a single engine climb requirement of .02 V 2 at 5,000 ft. The Islander with the modified nacelles met this easily at 6,000 lb., but performance was marginal at 6,300 lb. a.u.w. The fix found for this was not to increase the single engine rate of climb but to reduce the stalling speed which brings down the single engine rate of climb requirement under American regulations. This was done by introducing a larger radius leading edge to the wing between the engine and the fuselage, i.e. adopting a cambered leading edge for this area. This modification reduced the stalling speed by about 4.5 knots under certain conditions and was first fitted to c/n 180, the one hundred and eightieth aircraft off the production line.



Wing leading edge droop section to reduce the stalling speed was installed inboard of the engine.

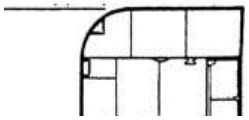
The drooped leading edge was originally fitted across the whole span of the wing but this resulted in a stall speed only one knot less than that achieved with the droop between the engine and the fuselage. An interesting anomaly was found in that with the original

nacelle fitted the drooped leading edge gave an increase of 15 to 20 ft/min. on the single engine rate of climb, but when fitted with the production rear nacelle this figure was reduced to a value between 5 and 10 ft/min.
The same sort of thing happened when performance checks were made on an aircraft fitted with the optional wing tip tanks. As well as fulfilling their primary purpose of increasing the endurance by two hours, they also improved the performance by increasing the aspect ratio of the wing. Flight tests showed that with the original nacelle a rate of climb increase of about 55 ft/min. on one engine was obtained with the tips fitted. With the modified nacelle the increase was reduced to approximately 30 ft./min.
The precise reasons for the reduction in the effect of these modifications on aircraft fitted with the modified nacelle is not known, but is thought to be the result of a change in lift distribution across the span of the wing. However, the modified nacelle gives such a basic performance increase that the net result with both the drooped leading edge and the wing tip tanks fitted is always better than without it.
The wing tips add about 1,000 ft. to the single engine ceiling, because in effect they push the wing tip vortices out another couple of feet on each side and thus increase the aspect ratio.
A marked increase in overall performance will be available with the Islander fitted with Lycoming I0-540-K fuel injection engines of 300 b.h.p. Certification is expected this summer and deliveries are expected to start early in the autumn. With these engines the aircraft will have a ten m.p.h. increase in cruising speed over the standard aeroplane and a 2,500 ft. increase in single engine ceiling. Flight tests have shown that the aircraft is extremely pleasant to fly and has not acquired any vices as a result of the higher powered engines.
The minimum control speed is still below 40knots and the stalling behaviour as immaculate as ever. In its definitive form the aircraft is fitted with a new design of engine cowling that is squared off in cross section and has a reduced frontal area. This cowling was made available for the 0-540-E engined aircraft later on.
A wing flap droop of 6 deg. was introduced on the higher-powered aircraft which helps to improve the attitude at which the aircraft flies in the cruise at maximum weight and, of greater importance, it helps to concentrate the lift on the inner section of the wing thus enabling the all up weight and the zero fuel weight to be increased without increasing the wing bending moment. This configuration has no detrimental effect on the aircraft performance and is expected to allow an a.u.w. of over 6,500 lb. without structural penalty when certified.
The modification was made available for retrospective fitting to all Islanders and eventually became a standard fitting for 0-540 engined aircraft. The wing portion between the flap and the aileron was be adjusted to fair the two surfaces together and the wing root fillet lowered to align with the flap angle.

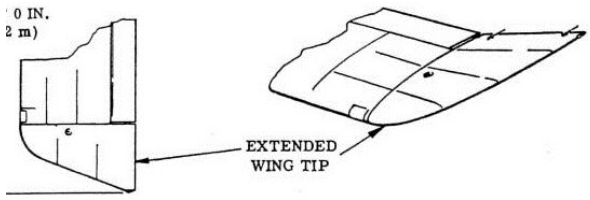
Payload/Range
The improvement in performance of the Islander over the past year (1969-70) has allowed the maximum authorised take-off weight to be increased from 6,000 lb. to 6,300 lb. This has been achieved with a very small increase in empty weight and therefore the increase in all up weight is directly reflected in the payload that the Islander can carry.
In two years, the disposable load of an Islander fully equipped for IFR flight and including the pilot, has increased from about 1,600 lb. to 2,200 lb., an increase of 37 per cent. When it is considered that an Islander can fly one mile for each pound of fuel used, the significance of this weight increase is obvious.
The payload range diagram shows that the Islander has a still air range of over 350 miles with 9 x 170 lb. passengers. Under BCAR rules, in which the zero fuel weight has been increased from 5,800 lb. to 6,000 lb., (i.e. the payload can be increased by 200 lb.), 9 passengers each with a 20 kg. standard international baggage allowance can be carried for 170 miles. The payload range graph was very similar to that of the Piper Navajo or Cessna 402B but at an Aztec's operating cost.
The Islander was designed for short sectors of under 100 miles, but there were some operators who required more fuel to operate in a congested IFR air traffic environment where the distance to alternate airfields is significant. For example, Suburban Airlines' route from Red Bank to Kennedy is only 26 miles but half an hour's extra hold fuel is necessary at Kennedy and a 100 mile diversion is mandatory; therefore 330 lb. of fuel is required for this 26 mile sector. This additional fuel load was made available by the above weight increase.

Tip Tanks
The new wing tip tanks were designed to increase the endurance of Islanders equipped with cameras, magnetometers etc. and used for survey flights. With an extra 59 U.S. gallons

available, more than two hours extra endurance is available at cruise speed.



Standard wing tip



Extended wingtips enabled an increase in fuel capacity that allowed endurance to be increased by more than 2 hours at nominal cruising speed.

The standard aircraft has five hours endurance; set aside one hour's fuel for reserves and this leaves a cruise endurance of four hours; hence the tip tanks have increased the practical range by 50 per cent, a not insignificant margin. The still air range is now 950 miles with full IFR reserves, or nearly 1,300 miles to dry tanks at economical cruise speed, carrying a payload of approximately 650 lb.

Cruise Speed

The change in engine nacelle shape and the wide chord leg fairings increased the speed by 5 per cent giving a true air speed of over 160 miles per hour at full load with a fuel consumption of 26-27 U.S. gallons an hour.

Performance Requirements for Public Transport Operation

The commercial use and profitability of the Islander is also dependent upon meeting the performance requirements of the various certification authorities. Various formulae are used around the world to calculate a safe single engine performance, but in round terms the aircraft must be able to maintain a 1 per cent gradient of climb or approximately 75 ft. a minute at 5,000 ft. - or, in another way, a single engine ceiling of approximately 7,000 ft. is required.

It is to these performance requirements that the Islander is built and the all up weight has been increased to absorb the improved single engine performance. The prevailing situation at the time in the United States and the United Kingdom the aircraft can fly IFR at 6,300 lb; in Australia the Islander can fly at 6,300 lb. VFR, 6,000 lb. IFR or 6,250 lb. IFR with wing tip tanks installed. In countries such as New Zealand and Scandinavia where the aircraft are required to maintain a single engine climb gradient of 1 per cent at the minimum en route altitude, at 6,300 lb., the aircraft can fly IFR at 4,000 ft. or just under 5,000 ft. with tip tanks fitted. As a rough guide, 200 lb. payload is equal to 1,000 ft. single engine ceiling, therefore the standard Islander carrying 5 passengers has a single engine ceiling of over 9,000 ft.

In order to meet the requirements of an operation in the Arabian Desert at very high temperatures under the British rules, the Islander with the standard engines has been fully cleared for operations at ISA plus 30 deg. C. (i.e. 113 deg. F. at sea level). As a comparison, the majority of United States general aviation aircraft are designed to meet the requirements of the American standard hot day, which is 100 deg. F. or ISA plus 23 deg. C. at sea level. This is of particular significance in hot countries and especially to those operators who support the oil industry.

Again, of special significance to those countries which operate under FAA rules, scheduled air are required to have similar safety factors on take-off as the larger airliners, i.e. the aircraft have to be able to suffer an engine failure on the runway on take-off and either stop safely on the runway or continue the take-off and climb-out on one engine. Very few current aircraft can meet these requirements without being uneconomically weight limited.

It is significant to note that although the Islander does not have to meet these requirements and hence is a more attractive commercial aircraft as a result, it does in fact meet them with a field length of around 2,500 ft. At the present time, in most countries, it can be said that the more rigorously performance requirements are applied to scheduled or air taxi operators, the better the Islander's performance compares with its competitors and gives an important selling advantage.

Although these performance requirements have been achieved with comparatively small changes to the Islander, this does not mean that they have been obtained without considerable effort by B-N. Two Islanders are used at Bembridge for trial installation purposes and performance measurements and 55 hours were flown in the last year in support of this programme.

The cost of an aircraft to an operator, and hence its profitability, are directly related to the capital required to provide one passenger seat mile of transportation. A contemporary standard for any good aircraft is approximately $80 per seat mile. For a 100 mile sector, (a recent study had shown that over half the

routes in the United States were under 100 miles), the capital cost per seat mile for an Islander is $80, for the Cessna 402B $109, for the Twin Otter, $167 and for the Beech 99 $185. Just for interest, the capital cost pet seat mile for a Boeing 707 operating on a transatlantic sector is about $75 and for a 747, with its designed passenger load of 450, it is $70, but as it is currently being operated with about 360 passengers, this becomes about $85 a seat mile. Therefore, whether or not these figures are accurate to within 10 per cent or so, the Islander's profitability is obvious.

The Future (As envisaged in 1970)
Successful as they have been with the Islander, with a total of 190 delivered, over 310 sold, and now in service in over 40 countries, B-N has no intention of resting on its laurels. A lot of thought has been given to a stretched version of the aircraft and this will soon reach the prototype stage.

The upbeat mood of the 1970 article is in contrast to the financial difficulties that beset B-N in 1971. Due to a mismatch between production and sales, cash flow issues resulted in financial support for the company being withdrawn that required the receiver to be called in.

Fortunately the receiver, Monty Eckman, took a positive view of B-N's prospects and after a detailed analysis of assets and liabilities together with recognition of the market for the BN-2 Islander, the company was given a new lease of life as Britten-Norman (Bembridge) and put up for sale as a going concern.

After considering several offers a sale was agreed with Fairey S.A. that resulted in the formation of Fairey Britten-Norman or FBN – that is another part of the B-N story……

BN-2 Islander 50+ Years On in 2019

Since entering production in 1966 the BN-2 Islander has been subject to detail improvements and modifications as a result of feedback from operators, regulatory authority requirements and general product improvement to enhance the acceptability of the aircraft and to reduce manufacturing and operating costs. To the outside observer the majority of design changes are hardly noticeable. However, the main changes in recent times include the adoption of a "glass " cockpit, three bladed propellers, for the piston engine Islander, and insertion of additional fuselage windows, as illustrated below.

With the advent of new display and instrumentation technology it is now viable to offer the latest "glass" cockpit, as an alternative to the conventional "round dial" arrangement. Seen here on the right is the Garmin G600 Txi equipment fit as specified for a recent BN-2B Islander delivery

The BN-2B Islander recently delivered to FLN in Germany, shown on the left, was fitted with the new three bladed "Scimitar shaped propellers and also incorporated the additional fuselage side window. The BN-2B also features an enlarged baggage bay door with top hinge options for ease of use

Other improvements include new style interior trim and seating, additional interior sound proofing and incorporation of a number of aerodynamic refinements.

First Flight at Solent Airport of New Build BN-2B Islander for Channel Islands Air Search

The Channel Islands Air Search (CIAS) organisation has been trying to obtain a new aircraft since its original aircraft, Islander G-CIAS, Lion's Pride, had sustained heavy damage to its nose when it crash landed in a field on the north coast of Jersey in November 2013 during a search in very bad weather conditions for two fishermen. It was initially thought that the damage could be repaired and a fundraising campaign was set up. However, around a month later it was deemed to be damaged beyond repair and CIAS were forced to spend the following years raising about £800,000 to fund the construction of a replacement aircraft.

The delivery date for the aircraft was originally set for early 2017 but has been repeatedly put back and Islander G-BEXJ, c/n 2020, has been on loan from B-N as an interim aircraft with more limited capabilities for use in the meantime.

The new CIAS Islander c/n 2314, G-CKYC, was rolled out on 4 January, 2019, and made a first flight on 8 January at Solent Airport, Lee-on-Solent.

BN-2B Islander G-CKYC after roll out on 4 January, 2019 (Guernsey Press).

BN-2B Islander G-CKYC climbs away on its first flight on 8 January, 2019 (Terry Coombes).

Now bearing its new registration 2-CIAS, Islander G-CKYC is seen here in the spray shop after being painted in its new CIAS SAR livery by Airbourne Colours at Bournemouth (CIAS)

At a recent press interview CIAS Chairman John Fitzgerald said the new Islander would soon have its specialist search equipment installed and he was hopeful the charity would take delivery of the new aircraft in February "It is a much better aircraft in terms of the data that we can collect and the search equipment we will have on board is much more advanced." When the aircraft is delivered to its base in Guernsey, the crew would need to complete about a month of intensive training. "It is due to be in Jersey in April for a blessing at the Airport and we will be making a number of visits to show it to groups and organisations," he said.

CIAS Islander G-CKYC on a test flight from Solent Airport 28/1/19 (Martin Rickard).

The cost of the new aircraft is believed to be around £1,250,000 with another £1,000,000 to cover acquisition and installation of specialised mission equipment. The mission equipment includes the latest forward-looking infra-red camera (FLIR) that will provide a 24-hour search capability, regardless of light conditions. It will also have a TETRA radio communication system, enabling the crew to speak direct with their Police, Fire and Civil Protection colleagues. Marine Radio is used to speak to the Coastguard. For more about CIAS go to: www.ci-airsearch.com

Falkland Islands Government Air Service News

Falkland Islands Government Air Service, FIGAS, has leased an Islander aircraft from Britten-Norman for the inter-islands air service during the current summer season. A new Islander aircraft has been ordered which is scheduled to be delivered next July. In addition four new engines have been ordered for the FIGAS Islander fleet.

Last June one of FIGAS Islanders, VP-FBM, suffered damage in a a landing incident in Beaver Island and had to be dismantled and brought back to Stanley by sea.

B-N Islander G-BCEN leased to FIGAS was seen at Reykjavik, Iceland on 6 December (Kas van Sonneveldt)

The Islander leased from B-N, registration G-BCEN, c/n 403, was originally scheduled to arrive in November 2018 for a six month deployment. However, the aircraft encountered some unexpected delays and is now due to arrive before the end of January.

On arrival the leased Islander will require 100 hours inspection taking approximately two days and will then be fitted with high flotation tyres before it begins carrying passengers. It is expected that the aircraft will return to the UK in April.

The addition of this aircraft, together with the recent major avionics modifications to Islanders VP-FBD, VP-FBO and VP-FBR, means that FIGAS will have a full fleet in place to meet demand during the last three months of the season. Aside from routine maintenance there will be four passenger aircraft available with the fishery patrol Islander VP-FBN as a reserve aircraft. This Islander is nearing a 500 hours inspection which will take approximately two weeks.

FIGAS 70th Anniversary Stamp Set

Thanks go to Norman Hobbs for sending details of a set of stamps issued in the Falkland Islands to commemorate the 70th anniversary of FIGAS operations.

Falkland Islands air services were suggested by Governor Sir Herbert Henniker-Heaton in 1938 but due to the Second World War and the subsequent economic downturn which followed, the idea was shelved. However, in November 1946 the next Governor, Miles Clifford (later Sir Miles Clifford), was also faced with the isolation of people living in the outlying settlements on the East and West Falkland.

Inspired by the operations of Flying Doctor Service in Australia he cleared the way for the introduction of an air service for the Falkland Islands. The call went out for a suitable aircraft to fit the purpose together with support staff. In the latter part of 1948 two Austers arrived, a Mk4 and a Mk5, registered G-AJCI and G-AJCH (later to become VP-FAB and VP-FAA respectively), together with former Royal Navy pilot Vic Spencer and an engineer Maurice Smith. Working in the great outdoors at the west end of Stanley Racecourse the aircraft were assembled and a successful test flights carried out on 19 December 1948 marking the start of FIGAS operations.

Latest on New Route for Fly My Sky Islanders

In New Zealand Fly My Sky chief executive Keith McKenzie had said earlier when the new service to Whangārei had just started that he blamed the lack of bookings on insufficient advertising but he expected business to pick up heading into the busy festive season. Recently he was more optimistic about the airline's future on the Auckland to Whangārei route.Keith McKenzie said "Passenger numbers are definitely building more towards what we're after. They are still slightly slow but we're getting quite a few return and repeat customers."

"Obviously the timing of our flights suit our customers. We're still getting quite a few inquiries going forward and it's looking encouraging with several flights almost full."

Fly My Sky Islander ZK-SFK, c/n 236, at Whangarei after the inaugural flight of the new service (Fly My Sky)

The airline flies into Whangārei twice daily from Monday to Friday, with a one-way fare of $99 including 23kg luggage. Flights leave Auckland at 0655 and 1320, returning at 0825 and 1445. McKenzie said doctors who flew with Fly My Sky from Auckland to Whangārei for work have shown an interest in flying with the company again.

At present there were no plans to increase flights on the route at this stage. "The current flights need to be functioning well before we look at increasing them because it costs tens of thousands of dollars to run scheduled services each month."

Aer Arann Islands B-N Islander Operations to Continue

Aer Arann Islands and its principal shareholder Senator Pádraig Ó Céidigh, has been in a protracted dispute over its Public Services Obligation (PSO) contract with the department, claiming that the contract means it is running at a loss and cannot continue as a viable operation.

After an extended period of uncertainty for the long established B-N Islander operator Aer Arann Islands, it is now understood that flights to the Aran Islands will continue as usual in the short term after an agreement was reached between the Department of the Gaeltacht and the Islands and the airline.

Aer Arann Islands Islanders on the ramp at Connemara Airport.

The contract under which the airport is made available for the provision of the air service was extended until September 2021 while Aer Arann Islands agreed to continue providing the service until 20 December last year. The department then immediately issued a tender for an interim service, under a contract effective from 21 December, 2018, until 30 September, 2019, with a further tender process to award a four-year contract ongoing while the short-term contract is in place.

Unity Airlines Trislander Delivery Flight to Anguilla

Unity Airlines Trislander YJ-OO19, c/n 1055, has been sold and just competed an epic delivery flight, that matches its earlier delivery flight from Greece to Vanuatu when the aircraft was acquired by Unity Airlines in 2009. Thanks to regular reports and photos posted on facebook by Unity Airlines and friends BNAPS News can provide some of the story of this epic flight.

YJ-OO19 flight crew – Tony Deamer (left) with Tim the pilot (rightwwhen they met up with Tony's brother Bryn at Lompoc.

B-N Trislander c/n 1055 started life in Belgium and in 1984 departed from the UK for the Botswana Defence Force and later was sold on to Zimbabwe. In 2003 it went to an owner in Greece and in 2009 was acquired by Unity Airlines and made a long distance delivery flight to Vanuatu. After service with Unity Airlines it has now been ferried to the Caribbean for delivery to a new operator, Anguilla Air Services.

The delivery flight from Vanuatu started at the end of October and routed via Fiji and then on to Samoa where the chrome engine cylinders started giving trouble in cruise and had to be removed together with some exhaust system problems that delayed the flight.

Unity Airlines Trislander YJ-OO19 in Vanuatu.

Tony Deamer at Kona refuelling the ferry tanks fitted in the cabin for the delivery flight.

View from Trislander YJ-OO19 on approach to Pago Pago to look at an abandoned Islander.

With the engine problems resolved the delivery flight resumed at the end of December and went on to Cassidy International Airport on Christmas Island and then to Hilo in Big Island Hawaii where the volcano eruption had recently wreaked destruction. A detour was made north to Kona for Avgas as the Hilo Avgas had all been sold just before YJ-OO19's arrival.

View from YJ-OO19 en route to Apia, Samoa

Unity Airlines Trislander Delivery Flight to Anguilla (continued)

On Monday 15 January YJ-OO19 flew from Hilo to Lompoc on the east coast of California about half way between San Francisco and Los Angeles, this leg took 17 hours flying time.

Above: At Lompoc YJ-OO19 arrived in a rain storm and was quickly put in a hangar.

Left: YJ-OO19 is seen here parked at Houston in bright sunshine.

Flying across the USA YJOO19 staged through Taylor Field and Houston in Texas and Fort Lauderdale, Florida.
The last leg was from Fort Lauderdale to Clayton J Lloyd Airport in Anguilla with a fuel stop along the way, arriving on 22 January.
The next day the new owner had the engines out and started stripping the Trislander down for repainting.

Above: YJOO19 parked on the ramp at Clayton J Lloyd Airport Anguilla at the end of the delivery flight.

Anguilla Air Services' engineers removing the engines.

Below: Paint stripping under way for one of YJ-OO19's ailerons.

Below: YJ-OO19 will be repainted in Anguilla Air Services colours like islander VP-ACT.

For more about Anguilla Air Services go to: www.anguillaairservices.com

Island Airways Mail Services to Beaver Island, Lake Michigan

Island Airways is based at Charlevoix near Lake Michigan and has operated Islanders since 1982. The airline serves several islands on Lake Michigan can trace its history back 1923 when the first Charlevoix to Beaver Island air mail service was operated. The Welke family, that now runs Island Airways, bought a farm on Beaver Island in 1965. Work was started immediately to convert vacant farm fields into a "landing strip" and by the time the family moved to the Island in the late 1960s, the east/west runway was complete and the airport was a licensed facility.

St James Harbour, Beaver Island (Island Airways).

Welke Aviation was formed in 1975 and merged with locally based McPhillips Flying Service to form Island Airways in 1983. More Islanders were acquired and in 2019 Island Airways has a fleet of five Islanders, one of the largest fleets of Islanders in the USA.

Formation Fly Past of Island Airways Islanders at Charlevoix (Island Airways).

Paul Welke is in charge of Island Airways operations and is chief pilot. In the 34 years that Paul has been a professional pilot, he has flown in 49 of the 50 United States, most of the Canadian Territories, Mexico, and the Bahamas. He has flown approximately 28,000 hours, made 35,000 trips between Beaver Island and Charlevoix, and transported about 300,000 people. In the 34 years of flying between Beaver Island and Charlevoix, Paul has only got stuck in Charlevoix about 10 times.

2018 saw the United States Postal Service celebrating 100 years of delivering airmail. One of the longest running airmail carriers is Island Airways. Every morning, boxes upon boxes of mail for Beaver Island are picked up from the Post Office. For people on Beaver Island, their mail is loaded onto an island Airways Islander and flown over Lake Michigan. For 73 of the 100 years of airmail, Island Airways has been delivering mail to the people of Beaver Island.

Paul Welke believes Island Airways is the longest running airmail service in the country, the Beaver Island service can be traced back to 1945. "The whole island's existence depends on not only air mail, but packages for UPS and FedEx. As long as the goods fit through that door, we'll get it to the island". For more about Island Airways go to: www.islandairways.com

Islander Flight to San Juan Island for Michael Portillo

In a recent episode of the BBC TV series "Great Canadian Rail Journey" set in British Columbia presenter Michael Portillo took a flight in NorthStar Air Islander C-GCXF, c/n 84, from Victoria, Vancouver Island, Canada, to San Juan Island, USA.

Early last year the route was proclaimed as the shortest international scheduled flight in the world. However, the operation was somewhat short lived as NorthStar Air announced last August that the licence for the route had been withdrawn – no reason was given at the time.

Michael Portillo is seen here about to embark on the flight to San Juan Island in NorthStar Air Islander C-GCXF. This one of the few Islanders fitted with four bladed propellers. (BBC).

Air Alderney Service Still On Hold

View of Air Alderney's second BN-2T, believed to be registered as 2-BILL (JLT Aviation). .

At present there are no indications of when Air Alderney services, backed by Wessex Aviation, might start. The States of Alderney Transport Licensing Board had granted Air Alderney the relevant route licences to commence operations with a leased EC-155 Helicopter belonging to Heli Holland. The helicopter visited Alderney and Guernsey in March but did not operate any services

The airline has been liaising with the relevant authorities to set up the ground operations required at Alderney for its services. It appears that arrangements for these services have yet to be agreed. Without an agreement it was not possible to commence operations with the leased helicopter.

In June last year Air Alderney stated that preparations had been made including - flight crews have completed the relevant BN-2T type-rating training; BN-2T aircraft have been inspected by both the CAA and 2-REG and are fully compliant; management team established as required for the AOC application.

A key issue that has emerged and is presumably still being addressed is that of passenger security clearance at Alderney and the acceptability of the passengers' security status at Guernsey Airport security authority. The position regarding approval of Air Alderney's AOC application is not known.

Wessex Aviation Rebuilds BN-2T Islanders

Back in 2013 four ex Ghana Air Force BN-2Ts arrived at Wessex Aviation's hangar at Biggin Hill. BNAPS Supporters Club member, Ron Valentine, visited Biggin Hill recently and reported that two of the BN-2Ts are in work - BN-2T, c/n 2222, ex G-361 and BN-2T c/n 2223, ex G-362. BN-2T c/n 2223 has been re-painted and is expected to be registered as 2-BILL, see Air Alderney news item above.

Above; Part of the consignment of ex Ghana Air Force BN-2Ts that arrived at Biggin Hill in 2013.

Below; Ron Valentine checks the c/n of one of the BN-2Ts during his recent visit.

Above; JLT Aviation engineers have been engaged to work on this BN-2T – c/n 2223

Two other ex Ghana Air Force BN-2Ts are understood to be on site stored in containers: they are believed to be c/n 2229, ex G-363, and c/n 2225, ex G-360.

Islander G-AVCN at Jersey Airport 1967

Thanks go to Dave O'Byrne for posting this image of Islander G-AVCN on the BNAPS facebook page. The image location is Jersey Airport and dates from around mid-1968 as G-AVCN still has the GlosAir logo on its fin.

Another view of Islander G-AVCN with the GlosAir logo on its fin (BNH collection).

Aurigny Air Services Islander G-AVCN at Jersey Airport with a selection of British United Airlines ground support vehicles in the foreground (via Dave O'Byrne).

Trislander G-JOEY on Show at Oatlands Village in Guernsey

Aurigny Air Services Trislander G-JOEY is now settled in a new building at Guernsey's Oatlands Village. Design and construction of the suspension sytem was undertaken by a UK based specialist company and G-JOEY looks impressive in its commanding position above the restaurant's dining area.

It is hoped that Oatland Park's visitors will appreciate being reminded of the time when the Trislander "ruled the skies" and provided regular air services for Channel Islanders and visitors for well over forty years.

Trislander G-JOEY is seen here during installation at Oatlands Park (Dave O'Byrne)

Above: A restaurant diner's view of Trislander G-JOEY (Dave O'Byrne)

Above: View of Trislander G-JOEY above the restaurant area at Oaytlands Park (Guernsey Airport)

BNAPS Christmas Meal December 2018

On 14 December around thirty BNAPS Supporters Club Members and friends attended the 2018 BNAPS Christmas Meal and had an enjoyable evening on at Fox's Restaurant Bembridge.

Thanks go to the staff at Fox's Restaurant for the excellent meal and arrangements for the evening.

As on previous occasions our grateful thanks go to Rita Edgcumbe who was in charge of organising the evening for BNAPS and her efforts are much appreciated.

BNAPS chairman presented Rita with a bouquet of flowers during the evening - thanks go to Jeni Gallagher for getting the bouquet organised and hidden away as a surprise.

Wight Aviation Heritage Tours

Subject to demand BNAPS is planning a series of Wight Aviation Tours in 2019. For BNAPS Supporters Club members there is a discounted price of £65.00 and £45.00 for those members already on the Isle of Wight and joining the mini bus for the tour at Ryde Hovercraft Terminal.

Wight Aviation Museum Update

In early December the Wight Aviation Museum's change of use planning application for their Sandown Airport hangar was approved. For latest news from the museum go to: http://www.wightaviationmuseum.org.uk/

Cushioncraft CC7 restoration – appeal for funds-

The Wight Aviation Museum (WAM) has been presented with an opportunity to bring a rare CC7 Cushioncraft back home to the Isle of Wight. It was built by Britten Norman in the late 1960s at their works in St Helens, on the Island. The CC7 formed part of an going program of hovercraft development by BN and were built to aircraft standards. It represents a vital part of the Islands engineering heritage which is at risk of being lost for good.

Cushioncraft CC7

WAM has launched a campaign to raise £15,000 that would enable acquisition and restoration of the CC7. It will be restored by the Wight Aviation Museum team and will be displayed for the public to enjoy at the museum. Details of how to donate go to https://mydonate.bt.com/events/wightaviationmuseum/479553

Valom 1:48 Scale Islander Model Kits Now Available from BNAPS

Valom 1:48 Islander model kits are available to order at £27.00 for BNAPS Supporters Club members and £30.00 for non-members, payment in advance. UK post and packing, first class signed for delivery is £5.00.
The following models are available:
48008 Islander- G-AVCN Aurigny Air Services colours
48009 Islander- Israeli Air Force colours
48010 Islander - Loganair, BA franchise, colours.
Please contact bob@bnaps.org.uk to place your order.

BNAPS Sales Catalogue 2019 Edition

Please contact Rita Edgcumbe at BNAPS Sales to if you would like to receive the latest catalogue by email: sales@bnaps.org.uk

BNAPS on the Internet - information and back issues of BNAPS News go to 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

No dates set as yet but we will be running an informal day at the workshop on a Saturday around March/April time

Further Wight Aviation Heritage Tours are planned for 2019 when visitors will be able to view Islander G-AVCN either nearing completion or later on fully assembled

If anyone 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.