

TRN/AVA/1 # 10

GROUP

VOL : 1

VOL : 1

SUB-GROUP

SUBJECT ACCIDENT TO VP-FAY (Islander)
..... @ V HILL COVE.

QV HILL COVE

ARCHIVE

OFFICER DEALING **ARCHIVE** CONNECTED FILES

FILE OPENED

FILE CLOSED

CS	-	7/6
Reg	-	-
PA	-	-
AS	-	7/6
CS	-	-
PA	-	-
CS	-	✓
Pft	-	-
CS	-	7/6
PA	-	-
Type	-	7/6
AS	-	-
Dep. + PA	-	-

2050

AIR/H/



Director Civil Aviation
F.I.G.A.S.
Stanley

13th February 1980

His Honour The Acting Governor,
Secretariat,
Stanley

Your Honour,

I have the honour to inform you of an aircraft incident involving ISLANDER VP-FAY at HILL COVE on February 12th 1980

The aircraft is the property of the Falkland Islands Government, I was in command and the aircraft flown by Mr Anderson, and landed at Hill Cove for the purpose of disembarking one passenger, a quantity of freight and mail.

A normal approach and landing was carried out on the N-S strip into wind, which was 8-10 knots N. On being firmly established on the ground with approximately 400 yards of strip left, the pilot applied brake to bring the aircraft to rest, the brakes were fully serviceable but had little affect on slowing the aircraft on the extremely wet grass surface, this being aggravated by the slight down slope on the strip, consequently the aircraft over run the strip end and striking an end marker with the port main landing gear coming to a stop with the port wing and engine over a gorse hedge.

The aircraft was immediately evacuated and an inspection of the aircraft carried out, the only apparent damage being to the lower section of the undercarriage fairing and the forwards section of the A.D.F. antenna, the aircraft having been moved manually to a clear area.


I reported the incident immediately to the A.T.C.O. by radio, and advised that the remainder of the Islander schedule would be abandoned. In addition to Mr Anderson and myself there were three adult passengers and three children on-board, no injuries to persons were sustained.

My next action was to restart the motors and carry out a power check, all reading were normal and no vibration felt, a taxiing and brake check was then carried out and all services functioned normally, I then decided to return to Stanley carrying only the three children.

Mr Anderson was given the option of flying the aircraft (for psychological reasons) to base this he elected to do and an uneventful return flight carried out landing at Stanley at 14:07.

The aircraft is currently being inspected for any possible secondary damage.

I am
Sir
Your Obedient Servant


Director Civil Aviation

HOLMESTED BLAKE & COMPANY LIMITED

DIRECTORS: G. C. GRIFFITH MRS. C. A. E. STRONACH MISS E. T. STRONACH A. L. BLAKE W. W. BLAKE

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LONDON E1 7QY

Telephone: 01-283 6763/4/5

His Excellency,
The Acting Governor,
Government House,
Stanley.

HILL COVE
FALKLAND ISLANDS

CABLES: "BLAKE FOXBAY"

15th Feb 1980

The Accident to the Islander Aircraft
at Hill Cove on 12th Feb 1980

Dear Sir,

I wish to make the following statement regarding the landing of the Islander aircraft at Hill Cove on the 12th Feb.

The aircraft approached from the South on our main North South strip, landing into the ~~win~~ very light wind from the North West, and down the sloap. The aircraft failed to stop and hit the North threshold marker with the port wheel and came to rest with the port engine in the old gorse hedge beyond the North threshold. Persons waiting for the aircraft heard the wheel strike the threshold marker drum and then saw a shower of gorse shoot into the air. The aircraft was pushed backwards and then turned around, ~~after which~~ the DCA started the engines and after running them for a while motored back up the field. As much gorse as was possable was removed from the top surface of the wings, without climbing on the aircraft and the DCA told us that he would take the Stanley mail and passengers with him but he would not be continuing the flight.

Statement of conditions.

Wind: Light air from the North West.

Landing: South to North down the slope of runway.

Touchdown Point: 253 yds from south threshold

Brakes: Applied 308 yds from south threshold.

Touchdown point to North Threshold: ~~333~~ 308 yds

North Threshold to stop point in Gorse: 40yds

Condition of the Landing strip: Wet lush grass three inches long.

Enclosed: three photographs:-

- 1/ North threshold and gorse hedge showing drum dislodged from threshold marker
- 2/ Area of gorse hedge in front of aircraft stop point.
- 3/ Damage to gorse by port engine and propeller.

Yours faithfully

J. F. Blake

Copy sent to DCA
SB 20/11/80

AG

DCA

214 GOVERNOR FK TKS VM
214 GOVERNOR FK
86866 PBNBEM G

AG

20/2.

201742 FEB/JMB

ATTENTION MR BILL HUGHES

- A) INSPECT FIREWALL DIAPHRAGM FOR BUCKLES (REF TO M.M.
CHAPTER 3.4 PAGE 4 FIG 1) FROM INSIDE OF NACELLE BOX.
IF BUCKLED ADVISE PBN.
- B) LOWER NACELLE BOX UNDULATIONS MAY BE REPAIRED BY ADDITION
OF SPANWISE STIFFENERS POSITIONED AS REQUIRED TO FLATTER
(LAST WORD SHD RD FLATTEN) SKIN.
- C) MAT SPEC FOR STIFFENERS L72 18SWG OR US EQUIVALENT AND
PATTERN TO BE SIMILAR TO WING FRONT SPAR STIFFENERS.
- D) OLEO FAIRING REPAIR - NO SPECIAL INSTRUCTIONS.
- E) ADF AERIALS PARTS ON AOG - AIRFREIGHT VIA HOLDER BROTHERS.
WILL ADVISE AWB WHEN KNOWN.
- F) AERIAL SPARES WILL BE SMITHS BUT AR ARE DIRECT REPLACEMENTS.
- GZ PRICE OLEO FAIRING COMPLETE 2082.00 US DOLLARS.

REGARDS TO ALL.
KEN DYE
SERVICE DEPT

86866 PBNBEM G
214 GOVERNOR FK

FIFO 002/20

A-G

PP FCO

GRS 200

019
22/2.

CONFIDENTIAL

FM PORT STANLEY 191920Z FEB 80

TO PRIORITY FCO

TELEGRAM NUMBER 28 OF 19 FEBRUARY

ACTION
COPY

FOR SAMD

MY TELNO 18: AIR ACCIDENT AT HALLEY BASE

1. UNDER LOCAL LEGISLATION I HAVE TO APPOINT AN INSPECTOR TO INVESTIGATE THIS ACCIDENT AND HAD INTENDED TO APPOINT SOMEONE IN STANLEY. HOWEVER, HAVING LEARNT MORE OF THE CIRCUMSTANCES I NOW CONSIDER THAT THERE IS NO SUITABLY QUALIFIED PERSON HERE CAPABLE OF CARRYING OUT THE INVESTIGATION WITH THE NECESSARY OBJECTIVITY AND EXPERTISE.

2. FURTHERMORE, WE HAVE NOW HAD ANOTHER ACCIDENT HERE CAUSING DAMAGE ON LANDING TO OUR ISLANDER AIRCRAFT (PILOT REFERRED TO IN MY TELNO 20 TO DAVIES WAS FLYING UNDER SUPERVISION OF THE DCA) AND ALTHOUGH NO-ONE WAS HURT THIS, TOO, WILL REQUIRE INVESTIGATION. IN THESE CIRCUMSTANCES I WOULD BE GRATEFUL IF YOU COULD SEEK THE ADVICE OF THE CAA ON OUR BEHALF ABOUT THE POSSIBILITY OF SOMEONE SUITABLE BEING AVAILABLE TO COME TO STANLEY TO CARRY OUT BOTH THESE INVESTIGATIONS. PERHAPS THERE IS SOMEONE IN SOUTH AMERICA. ALTHOUGH NOT STRICTLY CONCERNED WITH ACCIDENT INVESTIGATIONS PERHAPS REG WAINWRIGHT OF CAA MIGHT BE A USEFUL INITIAL CONTACT AS HE KNOWS OUR CONDITIONS AND HAS KINDLY OFFERED TO ADVISE US IN DIFFICULT SITUATIONS. AS I FEEL WE NOW HAVE ONE, PERHAPS HE COULD SUGGEST SOMEONE IN CAA WHOM I COULD CONTACT DIRECT TO DISCUSS OUR INVESTIGATION PROBLEMS.

BAKER

NNNN

SENT/RECD 201313Z PJ/JD

AIR/7/7 ✓

21. February

80

Mr L G Blake OBE JP
Hill Cove

Do

Many thanks for your letter of 15 February concerning the incident involving the Islander aircraft at Hill Cove on 12 February. I much appreciate your efforts in providing this information.

As you may have heard on the radio, arrangements are in hand for an investigation to be carried out on this incident, and I trust that we shall be in a position to give the public some more information in the near future.

FE

F E Baker
ACTING GOVERNOR

4-5
28
22/2

FOFI 302/26

M
PP PORT STANLEY

GRS 32

CONFIDENTIAL

FM FCO 251515Z FEB 82

TO PRIORITY PORT STANLEY

TELEGRAM NUMBER 26 OF 25 FEBRUARY

ALL INFORMATION
COPY

YOUR TEL 23: AIR ACCIDENT AT HALLEY BASE

1. WE UNDERSTAND THE DIFFICULTIES OUTLINED IN YOUR PARA 1. WE WOULD SUGGEST YOU CONTACT MR G C WILKINSON OF THE ACCIDENTS INVESTIGATION BRANCH OF THE DEPARTMENT OF TRADE, KINGSGATE HOUSE, 66-74 VICTORIA STREET, LONDON SW1E 6SJ (TELEX 3311074).

WILKINSON HAS INDICATED HE WILL BE GLAD TO ASSIST. YOU MAY REMEMBER HE INVESTIGATED ACCIDENTS TO YOUR AIRCRAFT A FEW YEARS AGO.

CARRINGTON

NNNN

SENT AT 26/1324Z ATC

TELEX (through BH)

TO: ACCIDENTS INVESTIGATION BRANCH, DEPARTMENT OF TRADE, LONDON

TELEX NO: 8811074

Ho

For GC Wilkinson from Acting Governor Falkland Islands

I understand that at my request the FCO have contacted you about advice on the investigation of two aircraft accidents in this area and that you have indicated willingness to assist. We would be most grateful for any help you can give with the appointment of a suitable Inspector to inquire into these accidents, brief details of which are as follows:-

A. At Halley Base Antarctica on 2 February a twin Otter VP-PAW, registered here and owned by British Antarctic Survey was making a low pass prior to landing and appears to have struck and fatally injured the Base Commander, Miles Mosley. One other person was injured. The aircraft was undamaged and landed safely.

B. At Hill Cove, West Falkland, on 12 February, Islander VP-PAY, owned by FIC, on a routine passenger flight, ran off the end of the airstrip on landing sustaining damage to the undercarriage and one engine. There were no injuries but I consider the damage sustained falls within the category of "substantial damage" under our Civil Aviation (Investigation of Accidents) Regulations, and the accident was thus notifiable under the Regulations and requires investigation.

2. I had originally intended to have the Halley Base accident investigated locally but have since learned more of the circumstances and now consider there is no suitably qualified person here capable of carrying out the investigation with the necessary objectivity and expertise. If you are able to advise on the appointment of a suitable Inspector from outside the Colony I would welcome the possibility of his also investigating the Hill Cove Islander incident. This has caused great public concern, not least because the same aircraft and the same two pilots were involved in an earlier

notifiable accident (December 21 last) which grounded the Islander for several weeks, and unfortunately some have questioned the soundness of the findings of the local inquiry which resulted. The restoration of public confidence in the new landplane service is vital and for this I consider it essential to have an investigation by someone clearly competent in this field and completely without local connections

3. Dr Laws, Director of British Antarctic Survey, Cambridge, could supply further background information on the Halley Base incident.

4. Any assistance you can give to enable us to make an early appointment for these two ~~main~~ investigations would be greatly appreciated.

BAKER

CS

HE has seen

OGJ
2812

ACTION
COPY

FOPS 033/28

PORT STANLEY DESKBY 281800Z

GRS 121

RESTRICTED

DESKBY 281800Z

FM FCO 281615Z FEB 80

TO IMMEDIATE PORT STANLEY

TELEGRAM NUMBER 29 OF 28 FEBRUARY 1980

YOUR TEL NO 35: AIR ACCIDENTS

1. IN VIEW OF THE EXCEPTIONAL CIRCUMSTANCES SET OUT IN TUR, ACCIDENTS INVESTIGATIONS BRANCH HAVE AGREED TO MAKE AVAILABLE MR D A COOPER SENIOR INSPECTOR OF ACCIDENTS (OPERATIONS) OF ACCIDENTS INVESTIGATIONS BRANCH, DOT, TO INVESTIGATE THE ACCIDENTS AT HALLEY AND HILL COVE. BECAUSE OF OTHER COMMITMENTS WE HAVE AGREED THAT HE SHOULD LEAVE UK SATURDAY 1 MARCH ARRIVING STANLEY AS SOON AS POSSIBLE. FIG AND BAT FUNDS WOULD MEET THE COST OF AIR FARES. GRATEFUL TO KNOW BY 1000Z 22 FEBRUARY IF THIS ARRANGEMENT IS UNACCEPTABLE

2. COOPER WILL COLLECT ALL THE RELEVANT INFORMATION ON THE TWO ACCIDENTS. HE WILL RETURN HERE TO INTERVIEW THE PILOT IN THE HALLEY ACCIDENT AND TO WRITE HIS REPORTS. THERE IS NO POSSIBILITY OF RE-OPENING THE ENQUIRY INTO THE 21 DECEMBER ACCIDENT BUT COOPER WILL WANT TO SEE THE REPORT. HE WOULD ALSO BE GRATEFUL TO SEE THE EVIDENCE GIVEN TO THE ENQUIRY.

3. GRATEFUL IF YOU COULD HAVE READY FOR COOPER ON ARRIVAL THE RELEVANT REGULATIONS COVERING THE FALKLAND ISLANDS AND THE BAT.

CARRINGTON

END

SENT 1000Z

BAT/25/1 cc AIR/7/7 ✓

CSO

CS

UNCLASSIFIED

PRIORITY

FCO

29 Feb 1980

Your telno 29: AIR ACCIDENTS

Many thanks your prompt and understanding assistance.

We welcome the appointment of Mr Cooper under the
arrangements suggested and would be grateful if you could
pass ⁶out thanks to Mr Wilkinson.

HUNT



GOVERNMENT HOUSE
STANLEY
FALKLAND ISLANDS

5 March 1980

Mr D A Cooper
Senior Inspector of Accidents
Stanley

Dear Sir,

Following the notification, in accordance with Regulation 4 of the Civil Aviation (Investigation of Accidents) Regulations, 1959, of an accident which occurred to the Falkland Islands Government Air Service aircraft VP-FAY on 12th February 1980 at Hill Cove, West Falkland, I hereby appoint you, under Regulation 7 of the said Regulations, as Inspector for the purpose of carrying out an investigation into the causes and circumstances of this accident.

Yours faithfully,

GOVERNOR

The Secretariat
Stanley

13 March 1980

His Excellency the Governor
Government House
Stanley.

Sir,

INVESTIGATION INTO THE ACCIDENT TO ISLANDER VP-FAY
AT HILL COVE AIRSTRIP ON 12 FEBRUARY 1980

1. I have completed my collection of evidence in the Falkland Islands. On return to the United Kingdom I shall investigate the landing performance of the Islander on wet grass airstrips with particular reference to the conditions at Hill Cove. I shall then consider all the evidence and submit the report called for by Regulation 9 of the Civil Aviation (Investigation of Accidents) Regulations 1959.

2. However, I have so far gathered much evidence which I consider should be made available to you so that you may take immediate action to reduce the chance of any further accident occurring, and to regularise certain documentary shortcomings discovered. I therefore enclose a Flight Safety Report which contains 16 recommendations for action. Three of these recommendations were also made by Mr G C Wilkinson in his report into the accident to Beaver VP-FAK which occurred on 14 October 1976 and I understand were not accepted at that time. I put them forward again because they seem to me even more valid following on the Hill Cove accident as they were when they were first made.

I have the honour to be,
Sir,
Your Excellency's obedient servant,

Danald Cooper.

D A Cooper
INSPECTOR OF ACCIDENTS

FLIGHT SAFETY REPORT

PART 1 AIRCRAFT DETAILS	PART 2 DETAILS OF OPERATION	PART 3 ACCIDENT DETAILS
1.1 Aircraft Manufacturer BATTEN-NORMAN (BEMBRIDGE) LTD ISLE OF WIGHT, ENGLAND	2.1 Operator FALKLAND ISLANDS GOVERNMENT AIR SERVICE	3.1 Date 12 FEB 80
1.2 Model ISLANDER BN-2A-27	2.2 Type of Operation Airline Operations	3.2 Time 1235 Local 1535 GMT
1.3 Registration VP-FAY	2.2.1 Scheduled pax <input type="checkbox"/>	3.3 Location HILL COVE AIRSTRIP 5130S 6006W
1.4 Aircraft - Total hours APPROX 271	2.2.2 Non-scheduled pax <input type="checkbox"/>	3.4 Type of Accident
1.5 Engine Manufacturer and Model LYCOMING O-540-E4C5	2.2.3 Scheduled cargo <input type="checkbox"/>	3.4.1 Loss of control on ground/water <input type="checkbox"/>
1.6 Fuel Type (indicate grade)	2.2.4 Non-scheduled cargo <input type="checkbox"/>	3.4.2 Dragged wing/rotor tip, pod or float <input type="checkbox"/>
1.6.1 Petrol 100L	2.2.5 Other, eg training, positioning, test <input type="checkbox"/>	3.4.3 Wheels-up landing <input type="checkbox"/>
1.6.2 Kerosene	Commercial	3.4.4 Wheels-down landing on water <input type="checkbox"/>
1.6.3 Other	2.2.6 Revenue pax <input checked="" type="checkbox"/>	3.4.5 Gear collapsed <input type="checkbox"/>
1.7 Malfunctions and failures of equipment or systems NONE	2.2.7 Revenue cargo <input type="checkbox"/>	3.4.6 Gear retracted <input type="checkbox"/>
	2.2.8 Aerial ambulance <input type="checkbox"/>	3.4.7 Hard landing <input type="checkbox"/>
	2.2.9 Pleasure <input type="checkbox"/>	3.4.8 Nose down/over <input type="checkbox"/>
	Commercial - Aerial Work	3.4.9 Roll over <input type="checkbox"/>
	2.2.10 Aerial application <input type="checkbox"/>	3.4.10 Undershoot <input type="checkbox"/>
	2.2.11 Aerial survey/photography <input type="checkbox"/>	3.4.11 Landing beside intended landing area <input type="checkbox"/>
	2.2.12 Power/pipeline inspection <input type="checkbox"/>	3.4.12 Over-run <input checked="" type="checkbox"/>
	2.2.13 Construction work (rotorcraft) <input type="checkbox"/>	3.4.13 Collision terrain/water <input type="checkbox"/>
	2.2.14 Other, eg training, ferry, positioning, test <input type="checkbox"/>	3.4.14 Collision objects <input type="checkbox"/>
	General Aviation	3.4.15 Collision aircraft <input type="checkbox"/>
	2.2.15 Business executive <input type="checkbox"/>	3.4.16 Collision birds <input type="checkbox"/>
	2.2.16 Private (business) <input type="checkbox"/>	3.4.17 Airframe failure <input type="checkbox"/>
	2.2.17 Private (pleasure) <input type="checkbox"/>	3.4.18 Engine failure <input type="checkbox"/>
	2.2.18 Instruction/training <input type="checkbox"/>	3.4.19 Engine disintegration <input type="checkbox"/>
	2.2.19 Practice/continuation <input type="checkbox"/>	3.4.20 Engine tearaway <input type="checkbox"/>
	2.2.20 Club and Group <input type="checkbox"/>	3.4.21 Propeller/rotor failure <input type="checkbox"/>
	2.2.21 Experiment, development, test <input type="checkbox"/>	3.4.22 Fire <input type="checkbox"/>
	2.2.22 Demonstration, racing, rally, record <input type="checkbox"/>	3.4.23 Explosion <input type="checkbox"/>
	2.2.23 Ballooning <input type="checkbox"/>	3.4.24 Loss of control in flight <input type="checkbox"/>
	2.2.24 Gliding <input type="checkbox"/>	3.4.25 Temporary loss of control in flight <input type="checkbox"/>
	2.2.25 Other <input type="checkbox"/>	3.4.26 Ditching <input type="checkbox"/>
	2.2.26 UNKNOWN <input type="checkbox"/>	3.4.27 Injuries to persons on ground - propeller blast or jet exhaust/suction <input type="checkbox"/>
1.8 General Aviation Operations ONLY Approximate Weight at Time of Accident	2.3 Type of Flight Plan and/or Air Traffic Clearance NONE	3.4.28 Injuries to persons on ground - propeller/rotor contact <input type="checkbox"/>
1.8.1 Unladen Aircraft	2.4 Time of Take-off from last Departure Point 1220 Local 1520 GMT	3.4.29 Injuries to persons in flight <input type="checkbox"/>
1.8.2 Fuel on Board	2.5 Last Departure Point PEBBLE ISLAND AIRSTRIP	3.4.30 Damage to aircraft on ground by propeller/rotor/jet blast <input type="checkbox"/>
1.8.3 Persons on Board	2.6 Point of Intended Landing HILL COVE AIRSTRIP	3.4.31 Damage to aircraft in flight <input type="checkbox"/>
1.8.4 Luggage, Freight, etc.	2.7 Altitude at Time of Occurrence GROUND LEVEL ± 50 FT AMSL	3.4.32 Missing aircraft <input type="checkbox"/>
1.8.5 TOTAL	2.8 Aircraft Speed at Time of Occurrence (Indicated Airspeed) NOT KNOWN	3.4.33 Other <input type="checkbox"/>
1.9 Navigation, Communication and Aerodrome Lighting Information (relevant to Accident) Malfunctions, failures or observations NONE		3.4.34 Unknown <input type="checkbox"/>
		3.5 Fire/Explosion NONE
		Fire Explosion In Air 3.5.1 <input type="checkbox"/> 3.5.4 <input type="checkbox"/> On Ground 3.5.2 <input type="checkbox"/> 3.5.5 <input type="checkbox"/> After Impact 3.5.3 <input type="checkbox"/> 3.5.6 <input type="checkbox"/>
		3.6 Emergency Landing NO
		3.6.1 Precautionary <input type="checkbox"/>
		3.6.2 Forced <input type="checkbox"/>

Part 3 (continued)	PART 4 DAMAGE INCURRED	Part 5 (continued)
3.7 Phase of Operation (FIXED wing only)	4.1 Damage to Aircraft	Airline and Commercial Operations ONLY (is for Section '2.2 Type of Operation' categories 2.2.1 – 2.2.9)
Ground	4.1.1 Destroyed	5.3 Means or Method of Exit
3.7.1 Stationary, engine stopped	4.1.2 Substantial	5.3.1 Main door, forward
3.7.2 Stationary, engine running	4.1.3 Minor + engine change	5.3.2 Main door, aft
3.7.3 Taxiing	4.1.4 None	5.3.3 Auxiliary door, forward
3.7.4 Other	4.1.5 Unknown	5.3.4 Auxiliary door, aft
Take-off	4.2 Damage to Other Property	5.3.5 Auxiliary door, other
3.7.5 Take-off run	4.2.1 Yes 40 GAL DRUM	5.3.6 Emergency window exits
3.7.6 Take-off run aborted	4.2.2 No RUNWAY MARKER	5.3.7 Cockpit window
3.7.7 Initial climb	PART 5 SURVIVAL ASPECTS	5.3.8 Other windows
En route	5.1 Impact Damage	5.3.9 Break in fuselage
3.7.8 Climb to cruise	Extreme	5.3.10 Throw clear
3.7.9 Normal cruise	Severe	5.3.11 Unknown
3.7.10 En route descent	Moderate	5.4 Aids Used
3.7.11 Holding	Minor	5.4.1 Normal disembarkation
Landing	None	5.4.2 Chute/Slide
3.7.12 Initial approach	Cockpit	5.4.3 Rope
3.7.13 Final approach	Cabin	5.4.4 Ladder
3.7.14 Landing run	5.1.1	5.4.5 Other outside assistance
3.7.15 Touch and go	5.1.2	5.5 Seating Configuration
3.7.16 Missed landing (go-around)	5.1.3	5.5.1 Forward facing
General	5.1.4	5.5.2 Rear facing
3.7.17 Aerobatics	5.1.5	5.5.3 Combination of above
3.7.18 Other	5.2 Upper Torso Restraint	5.5.4 Other
3.7.19 Unknown	Crew	5.6 Evacuation Time
(ROTARY wing only)	Passengers	UNDER If over 90 seconds, estimated time
Ground	Held on Impact	minutes seconds
3.7.20 Stationary, engine stopped	Failed on Impact	
3.7.21 Stationary, engine/rotor running	Used, not locked	
3.7.22 Ground taxi	Not used	
3.7.23 Aerial taxi	Not installed	
3.7.24 Other		
Take-off		
3.7.25 Vertical		
3.7.26 Running		
En route		
3.7.27 Climb to cruise		
3.7.28 Normal cruise		
3.7.29 Holding		
3.7.30 Hovering		
3.7.31 Power-on descent		
3.7.32 Autorotative descent		
Landing		
3.7.33 Approach		
3.7.34 Run-on landing		
3.7.35 Power on landing		
3.7.36 Autorotative landing		
3.7.37 Missed landing (go-around)		
General		
3.7.38 Other		
3.7.39 Unknown		
	PART 6 OCCUPANTS	
	6.1 Degree of Injury (Insert numbers)	Fatal Serious Minor None
	6.1.1 Pilot-in-Command	
	6.1.2 Other Pilots	
	(Insert role eg Supervisory, Co-Pilot, Student)	
	6.1.3 Flight Engineer/Systems Op.	
	6.1.4 Navigator/Radio Operator	
	6.1.5 Cabin Crew	
	6.1.6 Supernumerary Crew etc	
	6.1.7 Passengers	
	6.1.8 Total Aboard	
	6.1.9 Others (other Aircraft)	
	6.1.10 Others (on Ground)	
	6.1.11 TOTAL ALL INJURIES	
	6.2 Personal Information	
	Licence Details	
	Licence Number	
	6.2.1 ATPL/SCP	
	6.2.2 Commercial	
	6.2.3 Private	
	6.2.4 Student	
	6.2.5 Powered Glider	
	6.2.6 Balloon	
	6.2.7 Flight Nav	
	6.2.8 Flight Eng	
	Ratings	
	6.2.9 Instrument	
	6.2.10 IMC	
	6.2.11 Night	
	6.2.12 Instructor – Full	
	6.2.13 Instructor – Asst	

Part 6 (continued)

Experience (nearest hour)

6.2.14 Flying Hours
6.2.15 Hours on Type
6.2.16 Flying Hours
(a) Last 24 hours
(b) Last 28 days
(c) Last 90 days

Airline and Commercial Operations ONLY
(to for Section 2.2 Type of Operation
categories 2.2.1 - 2.2.9)

6.2.17 Duty period prior to occurrence
6.2.18 Rest period before duty

Non-Professional Licences ONLY

6.2.19 Name of Organisation where
initially trained
6.2.20 Date Training completed

Pilot-in-
Command

Total

P1

Total

P1 (US)

TYPE

Total

Total

Part 8 (continued)

8.8 Runway Width
NOT KNOWN AT PRESENT

8.9 Runway Slope
NOT KNOWN AT PRESENT

8.10 Runway Braking Action

8.10.1 Poor

8.10.2 Medium

8.10.3 Good

8.11 Overrun/Undershoot Area

8.11.1 Unobstructed

8.11.2 Obstructed

8.11.3 Soft surface

8.11.4 Rough uneven surface

8.11.5 Suitable up to cliff edge only

8.11.6 Not suitable

8.12 Type of Approach Flown

8.12.1 ADF

8.12.2 VOR

8.12.3 VORTAC or VOR/DME

8.12.4 ILS with radar monitoring

8.12.5 ILS to Cat I or above -
manual

8.12.6 ILS to Cat II - manual

8.12.7 ILS to Cat I or above -
autopilot

8.12.8 ILS to Cat II - autopilot

8.12.9 ILS to Cat III -
automatic landing8.12.10 ILS localiser -
back course8.12.11 ILS localiser -
front course

8.12.12 Surveillance radar

8.12.13 Precision radar

8.12.14 Visual (with VASIS or
lights) circling

8.12.15 Visual (no aids) circling

8.12.16 Visual (with VASIS or
lights) straight-in

8.12.17 Visual (no aids) straight-in

8.12.18 Others

PART 7 WEATHER

Meteorological Information
(at Time and Site - relevant to Accident)

7.1 Light Conditions

7.1.1 Dawn

7.1.2 Daylight

7.1.3 Dusk

7.1.4 Night

7.2 Wind Direction, Speed and Gusts

LIGHT NORTHERLY

7.3 Temperature (EST) 10 °C

7.4 Visibility 25 KMS
and/or RVR

7.5 Cloud amount and base

No low cloud

7.6 Significant weather

NONE

Forecast weather generally accurate YES/NO

PART 8 AERODROME DETAILS

Aerodrome or Airstrip Information
(where relevant)

8.1 Aerodrome Control NONE

8.1.1 ATC service - operating

8.1.2 ATC service - not operating

8.1.3 Advisory service

8.1.4 Unknown

8.2 Runway Surface Type

8.2.1 Macadam

8.2.2 Concrete

8.2.3 Grass, Wet, lush

8.2.4 Dirt

8.2.5 Other (specify below)

Part 8 (continued)

8.3 Runway Surface Characteristics

8.3.1 Grooved Surface

8.3.2 Porous Surface

8.3.3 Smooth Surface

8.3.4 Rough Surface

8.3.5 Other

8.4 Runway Surface Status

8.4.1 Dry

8.4.2 Wet

8.4.3 Water covered

8.4.4 Snow/Slush

8.4.5 Ice

8.4.6 Rough uneven ground

8.4.7 Rough water

8.4.8 Glassy water

8.4.9 Soft

8.4.10 Rubber deposits

8.4.11 Vegetation (high)

8.4.12 Other

8.5 Runway Number

36

8.6 Touchdown Elevation

50 FT AMSL

8.7 Available Runway Length

ABOUT 1758 FT

8.13 For Accidents during Take-off and Landing Phases on an Aerodrome

(Indicate on diagram below the path taken by the aircraft on the ground)

Runway designation or landing direction in use NORTH (arrowed in diagram)

Centreline

Touchdown (if relevant)

Distance displaced from centreline
of runway in useDistance from landing threshold
measured along centrelineWhere aircraft
stopped

CLIFF

GROSS HEDGE

feet

metres

PART 9 NARRATIVE

Please provide the following information. You may use additional sheets, if necessary.

9.1 A description of the accident to supplement the foregoing pages, including the extent of any injuries and how received.

See separate sheet attached

9.2 Your assessment of the cause(s) of the accident.

See separate sheet attached

9.3. Details of damage to the aircraft and to any other property.

See separate sheet attached

9.4 Any accident prevention action:

(a) Already taken

(b) In hand

(c) Suggested

See separate sheet attached

Signed D. A. Cooper

Name in BLOCK letters D. A. COOPER

Status INSPECTOR OF ACCIDENTS, FALKLAND ISLANDS

(eg: pilot-in-command, owner, CFI, etc)

Date 13 MARCH 1986

9.1. The evidence is that the aircraft was fully serviceable at the time of the accident although some documents were not in order. The aircraft captain was Capt J Kerr (right seat) and the aircraft was being flown by Capt E Anderson (left seat) performing the duties of P1 under supervision.

The aircraft approached Hill Cove airstrip from the east at about 800 feet AMSL. The crew assessed the wind (from water indications) as being northerly at about 10 knots and so they decided to land on runway 36. They also decided that the touchdown would be made at or slightly beyond a strip of rough ground that lay across the airstrip.

The aircraft followed a higher than normal approach path, crossed the threshold with full flap at 65 knots ~~IAS~~ at which point the throttles were closed, and touched down about 750 feet beyond the threshold (and beyond the rough ground) on wet, lush grass. Using standard braking techniques the crew found themselves unable to stop the aircraft within the airstrip because of the slippery nature of the surface. Towards the end of the airstrip the aircraft yawed to starboard, struck one of the 40-gallon drums marking the end of the airstrip with the port undercarriage leg, and continued until it came to rest in a gorse hedge at the edge of a 20 ft sheer drop on to a rocky beach. The occupants were uninjured. After assessing the damage as minor the captain flew the aircraft, with three child passengers, back to Stanley Airport where an assessment of damage was carried out and it was discovered to be more serious.

Pending an analysis of the landing performance of the Islander on wet grass airstrips, which will be requested of the UK Civil Aviation Authority, and accurate survey information about Hill Cove airstrip, it is not possible to make any final assessment of the aircraft's landing run. However, from the information presently available, it seems that the aircraft would have stopped within the length of the strip remaining if the braking conditions had been good. It is not at this time possible to say whether ~~this~~ the aircraft could have been stopped on the surface as it existed if the touchdown had been made close to the runway threshold.

9.2 No cause can be allocated until the final report is completed.

9.3 Damage to Aircraft. Damage to port main undercarriage leg fairing, port nacelle, and ADF sensor aerial under the fuselage. The port propeller was found $\frac{1}{4}$ inch out of track and this necessitated the replacement of the engine and the propeller.

Property damage. There was no significant damage to property.

9.4 Action prevention action suggested.

A number of points worthy of note and action arose during the investigation and it is recommended that accident prevention and administrative action be taken on them. They are:

1. The aircraft did not have a valid Certificate of Airworthiness because the only certificate in existence was that issued by the UK CAA for export purposes only. No Falkland Islands Certificate of Airworthiness had been issued, and this should be done before the next flight.

2. The Certificate of Maintenance in use at the time of the accident - No 601, issued 20 December 1979 - was invalid because the two Royal Air Force technicians who signed it did not meet any of the requirements of The Air Navigation (Overseas Territories) Order 1977, Article 9(4). This situation should be corrected before the Islander again flies.
3. No load sheet was made out for the flight (load sheets not being used by FIGAS) as required by ANO(OT) 1977, Article 28(4), and the Governor had apparently not granted an exemption to this Article. The captain of the aircraft stated that loading was done by assessing the weight of each passenger and using a standard loading pattern which involved filling the aircraft's seats in a certain order. He stated that the aim of this loading pattern was to position the aircraft's centre of gravity at or slightly beyond its aft limit so as to assist in raising the nosewheel on soft grass strips during take-off. Deliberately loading an aircraft so that its centre of gravity falls outside the laid down limits is potentially a hazardous practice and is in breach of the ANO(OT) 1977 Article 28. Calculations done after the accident show that at take-off from Pebble Island for Hill Cove the aircraft's centre of gravity was outside the aft limit.

It is recommended that a system which ensures that the aircraft is properly loaded is introduced at once and that this includes the use of load sheets. This recommendation was made in the report on the accident to Beaver VI-FAK.

4. No technical log was in use as required by ANO(OT) 1977 Article 9(6) and the Governor had apparently not granted an exemption to this Article. FIGAS were in the process of preparing a format of a technical log for the Islander at the time of the accident. This should be brought into use as soon as possible. This recommendation was made in the report on the accident to Beaver VP-FAK, which occurred on 14th October 1976.
5. The Operations Manual required by ANO(OT) 1977, Article 25, had been compiled when FIGAS operated Beaver aircraft only, and contained no information on Islander operations. A copy of part of an operations manual of Loganair Ltd was available in the FIGAS pilots' office and was intended to form the basis for the relevant part of the FIGAS Operations Manual. While parts relating to the Islander aircraft as such were relevant to FIGAS operations, others - for example those relating to routes and airfields - were not and would have to be compiled afresh. The Operations Manual should be completed as soon as possible.
6. There was no FIGAS Training Manual for the Islander as required by ANO(OT) 1977, Article 26, nor was there any record of the Governor having granted an exemption from this Article. A Training Manual should be introduced at an early date.

7. The Britten-Norman Islander Flight Manual contained no reference to landing on wet grass surfaces (only ~~on~~ dry grass runways from which it recommended that the landing distances required should be increased by 10% over that for dry tarmac runways). The Loganair Operations Manual, Volume 2, Part 1, Chapter 2, paragraph 8.2, recommends that on slippery wet grass over hard surface the scheduled landing distance required to be increased by 50%. This information was not known to any of the FIGAS pilots, and it should be used in future as a minimum for planning purposes pending any revision of the Islander Flight Manual which may result from this investigation.
8. The landing strip at Hill Cove had not been accurately surveyed at the time of the accident. The only information available to the pilots was contained in the "Data Sheet - Proposed Landing Strip", undated, drawn up in 1978 when Islander operations were being considered. In particular the slope of the runway was reportedly only roughly estimated and is stated as "Approx 2% down to the North". It is important that all airstrips, and especially the more difficult ones, are accurately surveyed and the information provided for pilots' use in the form of a route guide. This should be done as soon as possible.
9. The 36 strip at Hill Cove has two main gradients and there is a down slope in the approach zone. Such gradients, which are apparently common on Falkland Islands airstrips, can give rise to optical illusions which make it more difficult for a pilot to select and fly a normal final approach glide path angle than over flat terrain. To assist pilots in this respect it is recommended that the lateral boundaries of the Hill Cove strip, and others in the Islands, be marked as recommended in ANO(OT) 1977 Schedule 14, Section VIII, 39-(4), so as to give the airstrips length/width perspective.
10. Because of the two gradient surface on Hill Cove airstrip 18/36 the pilot of an aircraft on the ground at the end of the strip cannot see the other end. This might make the judgement of the last safe touchdown point more difficult than on a flat airstrip. It is recommended that the provision of markers indicating the safe touchdown zone be considered at Hill Cove and at other airstrips as appropriate.
11. There was no windsock at Hill Cove and there is a difference of evidence between ~~what~~ the pilots estimate of the wind as "read" from the water and what observers on the airstrip experienced, and this may have been a factor of this accident. Windsocks should be provided at all airstrips.
12. There was no fire extinguisher equipment or crash equipment at Hill Cove airstrip. Such equipment should be provided at each airstrip and the appropriate fire and crash rescue training given to personnel.

13. The landing strip at Hill Cove was not licensed under ANO(OT) 1979 and it is understood that all of the airstrips are unlicensed. It appears that safety would be improved if the control given by licensing were applied. In this connection an airstrip controller and deputy should be appointed, given appropriate instruction in their duties, and given a check list for inspection purposes. The assessment of braking action should be included in the airstrip assessment made prior to an aircraft's arrival - eg Braking action Good/Medium/Poor - and if assessed as poor a message passed so as to reach the Islander before it commences its approach,
14. There was no means of radio communication between the farm manager on the airstrip and the aircraft. Had there been radio contact it is possible that the pilots would have been made aware (possibly after they queried the airstrip state) that the grass was wet and very slippery. The accident might then have been averted. Air/ground communications should be provided wherever practicable. Where not in being the best alternative means of passing up-to-date airstrip information should be used. On this occasion it would have been possible for the farm manager to pass a radio message via Stanley to the Islander warning it of the wet surface, if he had been aware of the significance of this information.
15. Pilots of FIGAS do not undergo "Certificate of Test" check flights as required by ANO(OT) Article 20(4). It appears that no exemption to this requirement has been given, although one was gazetted on 8 January 1976 under Article 72 of the Colonial Air Navigation Orders 1961 to 1972. In the UK pilots of even the smallest operators have to undergo this test and it is suggested that such tests be introduced into FIGAS. The maintenance of the highest attainable standard of flying over the years of a pilot's career is vital to safety. It is suggested that FIGAS at once appoint a suitably qualified pilot as training captain on the Islander with the duties of establishing the highest possible operating standards as the Islander service gets established, of conducting the statutory tests, and producing the Islander Training Manual called for in ANO(OT) Article 26. An immediate appointment appears vital to achieve the highest standards in the Islander operation, especially in the coming winter months and whilst the current land-plane experience of two out of the three FIGAS Islander pilots is unavoidably low.
16. In view of the isolation of FIGAS from the rest of the aeronautical world it is suggested that a periodic inspection visit by a member of the UK CAA Flight Operations in the UK would be of great benefit in cross-fertilisation of ideas and in maintaining operations standards over the years. A similar recommendation was made in the report on the accident to Beaver VP-FAK.

File: Accidents Investigation Branch
Board of Trade

PASSENGER QUESTIONNAIRE

Page 1

Full Name (Capitals) MARGARET ROCKLEY BURKETT		
Age OVER 21	Sex F	Occupation PASTURE AGRONOMIST
Permanent address 11 CHURCH RD STOKE BISHOP BRISTOL 9		Contact address 1 DAVIS ST EAST STANLEY
Location of accident HILL COTE AIRSTRIP		Date of accident Time 12 FEB 80

1. Where were you seated? Seat No. Row No. 304
- Facing forward ☒ Rearward ☐
- (If you are not certain mark "X" in appropriate boxes below.)
- | | | |
|---|---|--|
| (a) Side of aircraft
<input type="checkbox"/> Right <input checked="" type="checkbox"/> Left | (b) Section of aircraft
<input type="checkbox"/> Front <input type="checkbox"/> Centre <input type="checkbox"/> Rear | (c) Class
<input type="checkbox"/> First <input type="checkbox"/> Tourist |
| (d) Seat
<input checked="" type="checkbox"/> Window <input type="checkbox"/> Centre <input type="checkbox"/> Aisle | (e)
Other | |
2. Were you aware of the emergency exit nearest your seat? ☒ Yes ☐ No
- If "Yes", how did you know where the exit was. *Fly often in the Islander*
3. Where was the emergency exit in relation to your seat?
- ☐ Ahead ☐ Behind ☒ Alongside How many rows
4. Were there any specific instructions given prior to the accident?
- ☐ Yes ☒ No ☐ Do not remember
- If "Yes", describe the instructions and state who gave them.
5. Did you know that an accident was about to happen? ☒ Yes ☐ No
- If "Yes", how did you know. *While the aircraft was running along the strip I realised it was not going to stop before it reached the drums which marked the end of the strip.*

6.	Was the "NO SMOKING" sign on?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Do not know <i>But usually is</i>
7.	Was the "FASTEN SEAT BELTS" sign on?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Do not know <i>But usually is</i>
8.	Were there any cabin lights on?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Do not know
	If "Yes", describe.			
	If "Yes", did they remain on after accident	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Do not know
9.	Was your seat belt fastened?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Do not remember
	If "Yes" how was it adjusted	<input type="checkbox"/> Loose	<input checked="" type="checkbox"/> Snug	<input type="checkbox"/> Tight <input type="checkbox"/> Do not remember
10.	Describe any significant occurrence in your cabin area before accident.			
11.	Did the seat belt and its attachments to the seat remain intact? <i>Yes</i>			
12.	What happened to your seat?	<input checked="" type="checkbox"/> Remained attached to floor.		
	<input type="checkbox"/> Came partially loose.	<input type="checkbox"/> Came completely loose.		
	<input type="checkbox"/> Bent or deformed.	<input type="checkbox"/> Do not know.		
13.	Did you experience difficulty in leaving your seat?			
	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Do not remember	
	If "Yes", describe.			
14.	Which exit did you use? - describe route taken - was there a delay in reaching exit - reason for using this exit. <i>Entrance down left side - Fast exit</i>			
15.	Did you see others use this exit, if so, how many? <i>YES</i> <i>Don't remember</i>			
16.	Did you open the exit yourself?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	If "No", who did.			

17. Did you, or the other person experience difficulty in opening the exit?

☐

Yes

☒

No

☐

Do not know

If "Yes", describe.

18. Did anyone help you leave aircraft?

☐

Yes

☒

No

If "Yes", describe.

19. What assistance, if any, did personnel outside aircraft render?

Not to help passengers get out

20. Did you use any emergency equipment, e.g., chute, slide, rope, etc.?

☐

Yes

☒

No

If "Yes", describe - including any difficulties in using equipment.

21. Additional comments on accident.

The sea behind glassy as if there was no wind. My impression was that the aircraft touched down about half way down the strip. When I was on the aircraft Mr. Tim Blake, Manager of Hill Cove Farm, showed me a handkerchief which he had clipped at the point he said he had observed the aircraft touch down. He then borrowed my tape (30 ft) measure and he measured the distance from the end of the strip, and also the length of the strip. He said that he thought that the plane had touched down too far down the runway. While walking back at Port Stanley I saw Capt. Kern lift the hand

Signature
of Passenger

Margaret Burkett
DeLaney

Date

6/3/80.

the aircraft and comment that (I think) some of the load should be shifted forward.

When I got out of the aircraft I noticed that the grass surface of the strip in which the aircraft had made its landing run was unusually long (at least 8 ins) for the Faeblands. It was a mixture of grass and clover which an aircraft's wheels when braking would be particularly prone to stick on. The grass was also sodden, very wet.

Margaret Burkett
D.A. Glen. 6/3/80

Accident to BN Islander VP-FAY

Statement by Chief Technician

Alastair Watson.

1. I am seconded from the Royal Air Force to the Falkland Islands Government Air Service as part of a maintenance team for the two Beaver floatplanes and Islander VP-FAY. I am a powerplant and associated systems technician.
2. When I took up my post in FIGAS in October 1978 I was informed by my predecessor, Ch Tech N. Hall, that I would be gaged as being authorised by the government to sign aircraft maintenance documents for the two FIGAS aircraft - the Beavers - and for two privately owned Cessna 172 aircraft. I have never seen any gage notice. I have asked the DCA at least twice about this and was told that it would be done. I do not hold a civil aircraft maintenance engineer's licence.

A. Watson.

John.

STANLEY AIRPORT
9 MAR 80

Accident to BN Islander VP-FAY

Statement by Chief Technician

William Hughes, RAF.

1. I am seconded from the Royal Air Force to the Falkland Islands Government Air Service as part of a maintenance team for the two Beaver floatplanes and Islander VP-FAY. I am an airframe technician, and also in the team is a powerplant technician, one apprentice and two hangar assistants. Radio inspection and maintenance work is done by two government radio personnel.
2. When I took up my post in FIGAS in June 1979 I discussed the matter of signing aircraft maintenance documents with the Director of Civil Aviation, Captain Kerr. I asked what authority I would have in this respect as I did not hold a civil aircraft maintenance engineer's licence. The DCA said that I would be gazetted as having been granted the Governor's authority for such purposes. Both myself and Chief Technician Watson, who has been here longer than I have, have reminded the DCA but to my knowledge neither of us have been so gazetted.
3. On the evening of 11th February 1980 I performed a Check 'A' on the aircraft and found it to be serviceable. I also repelled it to the state requested for the next morning's flight. The first flight on 12th February, followed a pre-flight inspection by myself. Again the aircraft was found to be serviceable. The aircraft ^{flies} on one trip with Captain Anderson as pilot and as its

W. Hughes.

W. Hughes.

STANLEY AIRPORT 9 MAR 80

return I refuelled it and had a general check over. Captain Anderson indicated that the aircraft was satisfactory. The aircraft then went on again with Captains Kerr and Anderson.

4. Over lunch time I heard from the Stanley ATC Controller that he had received a radio message from Hill Cove to the effect that the aircraft had hit a gorse bush. ~~I went to the house together with Chief Technician Watson~~ ^{On our telephone} ~~he had been told that~~ conversation he added that the port leg fairing was damaged and that the a/c Captain considered the aircraft was airworthy and wanted my opinion on its airworthiness for a return flight to Stanley. I told the Controller that without inspecting the aircraft myself I could not pass such an opinion. Together with Chief Technician Watson I went to the Control tower in case the pilot should communicate. The next I heard was when Chief Tech Watson told me the aircraft was airborne and in radio contact with Stanley ATC.

5. When the aircraft returned Captain Kerr completed Section 1 to 4 of Form CA27, Aircraft log Book, Section 5 being left blank. Captain Anderson gave me a debrief of the details. Together with Chief Technician Watson I examined the aircraft and we discovered the following:-

1. That the port main undercarriage leg fairing was damaged at its lower leading edge and also that there was a compression failure with trailing edge, approximately $\frac{3}{4}$ of the way up the fairing, with associated buckling. On removing the fairing distortion was apparent at the front spar of the leg fairing.

W. Kerr

W. Douglas.

Statement by Ch Tech Hughes (Contd)

2. On removal of the port nacelle rear fairing we found slight undulations in the metal on section side panels.
3. The ADF Sensor aerial under the fuselage had been ^{severely bent} and the centre post had sheared at its mounting point. There was a small split on the leading edge of the forward of the 3 aerial mounting posts.
4. There were two negligible ^{marks} ~~stains~~ ^{as a surface scratch} about an foot long on the port side of the nose, apparently made when the aircraft struck grass bushes.
5. There was ~~an~~ a new small paint scrape on the tail bumper.
6. There was a ^{small} whitish mark on the front, left, bottom face of the port engine firewall made by the exhaust tail pipe clamp bolt.
7. There was a compression split in the inward lower upper hard bearing indicating of the engine having been pushed backwards.
8. The propeller was out of track by about $\frac{1}{4}$ inch, which was discovered by a track check. It could not be seen by the naked eye. Because of this the engine was replaced in accordance with Lycoming Service letter No 163B.
9. Bit of grease were removed from both engine

D. L. Geden

Ch Tech Hughes.

air intakes, but especially from the port one.

10. The brake system was inspected and found to be fully serviceable. The brake linings were approaching their prescribed wear limits but had not reached these.

11. The 5 tyres were inspected and found to be fully serviceable with just over 5 mm of remaining tread. Cold tyre pressures were measured and found to be correct at the recommended pressures of 29 PSI nose and 35 PSI main wheels.

R. Allen

H. Stanger

WITNESS STATEMENT

Accidents Investigation Branch, Department of Trade & Industry		Page No. 195
Name EDDIE ANDERSON	Age 24	Normal address FAHKLAND ISLAND GOVERNMENT AIR SERVICE STANLEY
Occupation PILOT		Temporary address
<p>1. I have been employed as a pilot by the Falkland Islands' Government Air Service since 24 August 1977, flying Beaver float planes (DH C 2) and, as P1 U/S, the Britten Norman Islander.</p> <p>2. By the 12th February 1980 I had a total of about 570 hours of which 57 were on the Islander, the latter mainly flown from the left seat.</p> <p>3. On 12 February I reported at Stanley Airport for duty at 0830 hrs local time. At 0910 I took off in VP-FAY as Captain on the route Stanley - Port Howard - Darwin - Port Stanley, a flight of 1435 minutes. The aircraft was perfectly serviceable and the flight was quite normal.</p> <p>4. After landing I found I was scheduled to fly as pilot under supervision with Captain Kerr. I did an external check of the aircraft and found it to be perfectly satisfactory, in particular the ^{main} tyres appeared to be properly</p>		
Signature of Witness Eddie Anderson	I declare this to be a true statement.	Date/Time 7 MARCH 1980
		Place STANLEY
Signature of Inspector D. A. [unclear]	FAKLAND ISLANDS	

WITNESS STATEMENT

Continuation of WITNESS STATEMENT

Page No. 285

inflated and in good condition. Captain Kern carried out the supervision of the loading of the aircraft and we took off at about 1120 and flew to Douglas Station, a natural grass strip, where I landed and shuttled the. Before taking off I checked generally round the aircraft in particular at the pilot's head - I found nothing wrong. From Douglas I flew to Pebble Island where I landed on a re-seeded activated strip and followed the same procedure. On taking off at Pebble Island I experienced considerable wheel drag due to the soft nature of the ground caused by heavy rain which had fallen in the last 24 hours.

5. On approaching Hill Cove from the East I was flying at a height of about 800 feet AMSL, the weather being as stated in the pro-forma I signed. Due to the light wind, as determined from the surface of the water, there was some discussion between Captain Kern and myself as to which runway to use. In the absence of a wind sock at the strip the information available indicated that an approach from the south to the main runway would be the most suitable.

Signature of Witness

Eddie Andersen.

I declare this to be a true statement.

Date/Time

Place

Signature of Inspector

D.C. Owen.

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 385

I flew a right hand base leg. The nature of the terrain can result in a higher approach than one imagines - there are an aerial on the approach on the right side and the fact that there is an undulation about 500 yards up the strip which I consciously aim to avoid because if I had known that if I touched down before the undulation the aircraft became airborne again on reaching it. The result of this was that my approach path was steeper than would be ideal.

5. The aircraft was aligned with the runway at about 100 feet above threshold elevation with full flap, low power and IAS about 70 knots. The approach was a low power approach but I cannot remember what the manifold pressure was. Speed ~~was~~ reduced to 65 knots by the threshold ~~at~~ when I closed the throttles. It was unusual of the fact ~~(that I did not touch down)~~ that I did not touch down than on previous occasions landing on the same strip. At best I can estimate I touched down 450 to 500 yards from the far end but I had no reason to believe the aircraft could not be safely landed brought to a halt. I lowered the nose wheel almost immediately and commenced braking in the normal manner - a gentle, ~~steady~~ ^{intermittent} application. I realised

Signature of Witness

Edwin Andersen.

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

W. J. Cohen.

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 485

The deceleration rate was inadequate and despite intermittent application and release of brakes no noticeable improvement resulted. I called "Brakes" to Captain Kern when we were very close to the marker drums and at about ~~the~~ the same time the aircraft yawed some 5 to 10° to the right. The aircraft passed through the line of drums at about 10 units and the port undercarriage struck one of them. The aircraft continued down into a hollow and came to rest in a gorse bush. I believe I shut the engine down, they certainly stopped. My door was blown by a gust. One of the passengers had opened the rear port door and I opened the starboard passenger door. The passengers got out without difficulty.

6. I inspected the grass on the strip. I would think it was generally six inches long and very wet.

7. In my first flight that day as Captain in Command I had flown into Port Howard in the same aircraft which I believe at the time ~~the~~ was at about the maximum landing weight (6300 lbs), and landed on a wet grass strip of considerable

Signature of Witness

Eddie Andersen

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

D. A. Gordon

WITNESS STATEMENT (continued)

File:

Continuation of WITNESS STATEMENT

Page No.

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downhill gradient and into a 5 to 10 knot wind and experienced
no difficulty in shipping. The grass at Port Inward
was quite short (2 ins maximum) and wet.

[A large diagonal line is drawn across the main body of the page, likely indicating that the statement continues on the next page.]

Signature of Witness

*Eddie Anderson*I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

[Signature]

WITNESS STATEMENT (continued)

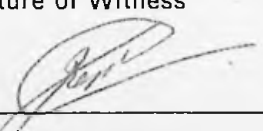
Captain E. Andersen - Supplementary Statement
on Aircraft Hoarding.

When Captain Alsop of Loganair Ltd was attached to FIGAS he commented frequently on the wisdom of an alt CO of gas being conducive to good take off performance in marginal conditions i.e.

boggy runways. He added that possibly for example in an emergency medical case etc he would be aware that the aircraft CO of gas would be beyond the alt limit, But in no way suggesting that this would be a normal occurrence or to be considered normal practice.

Eddie Andersen

WITNESS STATEMENT

Accidents Investigation Branch, Department of Trade & Industry		Page No. 1 of 1
Name JAMES KERR	Age 57	Normal address ROSS RD WEST, STAMLEY, FAIRFAX IS
Occupation Director of Civil Aviation and Chief Pilot FICAS		Temporary address
<p>1. I have been the Director of Civil Aviation - Falkland Islands and Chief Pilot of the Falkland Islands Government Air Service for about the past 25 years. I hold a Falkland Islands Commercial Pilot's licence endorsed for Beaver and Islander aircraft. For this period the bulk of my flying has been on Beaver float planes with some Cessna 172 amphibious flying also. In November 1979 I underwent a conversion course to the PBN Islander, with Captain Alsop of Logans, UK. Between the start of my conversion and 12 Feb 80 I had flown 57 hours in the Islander and during that time carried out 153 landings. Most of these I did myself, the rest were done by junior pilots under my supervision. During this period I have landed about 4 times on runway 36 at Hill Cove and have experienced no problems whatsoever. All these landings were made in comparatively light winds i.e. a headwind component of 10 knots or less, but none of the landings were made on wet grass. On these occasions I would say the grass on the landing strip</p>		
Signature of Witness 	I declare this to be a true statement.	Date/Time 7 MARCH 1980
		Place STAMLEY, FAIRFAX ISLANDS
Signature of Inspector D. C. HARRIS		

WITNESS STATEMENT

Continuation of WITNESS STATEMENT

Page No. 2

was shorter than on the day of the accident. I would estimate the length on these 4 occasions as 3500 ft, whereas on the 12 Feb I estimate it as about 6000 ft.

2. When plans were being drawn up to implement the ^{potential} Brown floatplanes with an Islander various landing sites were surveyed for suitability. The criteria of length, width, slope and surface condition were used based on data obtained from the Civil Aviation Authority in the UK, and from the manufacturers. Many sites were surveyed by Captain Russell Hughes a FIC-AS pilot, and Mr. Bala Kauragasari the then Airport Superintendent, Stanley. They produced a data sheet for each proposed landing strip and I produced a photocopy of that for the Hill Cove Top Settlement Strip. The data sheet was discussed by the FIC-AS Committee and the Manager of Hill Cove Farm was asked to carry out necessary work to make the strip suitable for use. Prior to commencing Islander operations Captain Alsop inspected all the strips, and went to place into them in the Islander. I accompanied him with Hill Cove on three occasions and he supervised himself carefully whilst with the strips.

Signature of Witness

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 3

The strip was marked at each end by a line of nine 50 gallon oil drums in groups of three. The drums being painted alternately red and white. There was no side markings on the Hill Cove Strip. Prior to the 12 February I had just painted on the strip on 8th February and did not know the grass was excessively long. In the morning I painted on morning 18 which was safe.

3. The Manager at Hill Cove Farm is asked by FIGAS to inspect the strip before such movements, but the assessment of braking action was not included in this.

4. I produce a photostat of the Certificate of Airworthiness for VP-FAY in use on 12 Feb 80 (and at the present date also), being the UK (CAA) Certificate of Airworthiness for Export. The Falkland Islands Government CAA had not yet been issued to replace the CAA one.

5. The FIGAS Operations Manual, which has been approved by the Government, includes a section on the operation of a standard aircraft which is based on the Hoganair Operations Manual for the aircraft.

6. In accordance with a system recommended by Capt Chris Hoganair FIGAS have adopted a standard landing pattern which positions the centre of gravity at or

Signature of Witness

I declare this to be a true statement.

Date/Time

Place

Signature of Inspector

D. L. Boden.

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 480 PD

Slightly beyond the aft limit. The purpose being to assist in securing the nosewheel on soft grass strips during take-off. A circular slide rule is used for this purpose. No written load sheet and fuel sheet is made out.

7. I arrived at Stanley Airport on 12 Feb 80 at about 1030 hrs local. I took the aircraft VP-FAY over from Captain John Ayres who reported that it was fully serviceable. Mr. Condon ~~who~~ who was to fly as PI under supervision - and I did the external pre-flight checks together and found the aircraft satisfactory. In particular the tyres appeared properly inflated, the tread was good - as one would expect from wheels and tyres which had only done 40 flying hours.

8. After taking off at 1120 hrs local we flew to Douglas Station landing at 1135 and carrying out a normal check before taking off at 1146 for Pottle Island. We landed there at 1213 when the engine was again stopped. In both these landings the wheel brakes operated normally and efficiently. At Pottle Island I loaded the aircraft using the circular calculator. There

Signature of Witness

I declare this to be a true statement.

Date/Time

Place

Signature of Inspector

R. L. Loken.

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 58910

13. Adult and three child passengers. Two male adults and one female, ~~and~~ 1 male child age 10, and two female children aged 8 and 12. Since the accident I have inspected a boat and Area Sheet showing the loading prior to take-off at Pebble Island and I was provided this.

9. Take-off from Pebble Island was at 1220 hrs, Mr. Anderson being the handling pilot - as he had been since leaving Stanley. I was in the right seat. Mr. Anderson's flying had been up to his usual high standard. The two approaches had been good ones at the correct speed, and the touch down points were each about 20 metres inside the threshold.

10. On arrival at this low we found on the base leg from right hand circuit at 800 ft QNH (that low strip being 50 ft AMSL) The purpose of the right hand circuit was to clear the wind direction from the water. There was no wind so on the landing site and I estimated the wind as being roughly at 10 knots.

11. The aircraft was lined up at about 500 ft QNH, Mr. Anderson flying, with full flap and IAS 65 knots,

Signature of Witness

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 6 of 10

which was also like the threshold speed. All pre-launching checks were completed by the Commander and checked by myself.

12. The angle is upwards, if anything, would be too high, but still satisfactory. The launching ship did not behave in any way unusual. There is no air/ground communication at Hill Cove, but I could see the four launchers waiting clear of the ship as is usual. Launching conditions were good (see weather report completed).

13. The ship length is about 60 yards longer than the 588 yds stated on the Data Sheet - Proposed Landing Strip. There is no data sheet as these aren't the Survey by the Department of Public Works. The ship initially slopes upwards little more, and the target touchdown point is just beyond the crest from which point the ship slopes downward. I estimate the crest to be 60 to 80 yards from the 36 threshold. I can't estimate exactly where the touchdown point was but I was not concerned that the point of touchdown was in any way dangerous.

Signature of Witness

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 7819

14. The manoeuvre was held for a short period, which is standard practice, and braking was commenced as soon as the manoeuvre was lowered. We appeared to be travelling a little fast and Mr. Anderson called "Brakes" and I assisted in the braking, using intermittent braking. The time we were both operating the brakes at this point. The slowing up process of the aircraft was less than I would have expected and we reached a point where the ~~air~~ airstrip slope steepened downwards and it was then obvious that the aircraft was not going to stop before running out of the prepared strip.

15. The aircraft slewed to the right and started sliding when about 50 yards from the end markers. ~~at~~ ~~It~~ The port main landing gear struck one of the 3 centre line markers viz:

0 0 0 0 0 ~~X~~ 0 0 0

16. The aircraft then came to rest with the left wing and nose over a grass hedge about 20-30 yards beyond the markers. I estimate the speed at the markers to have been 10 mph. The actual impact with the grass hedge was not violent.

Signature of Witness

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 8

8819

17. The engines were ~~idling to~~ ~~over~~ running down as the idle cut out had been pulled before impacting the ledge by Mr. Anderson. The aircraft was shut down and the passengers evacuated through the port and starboard passenger doors.

18. The aircraft was then pushed clear of the ledge and a check made of the damage by myself and Mr. Anderson. We found that the lower leading edge of the port undercarriage fairing had been damaged and the ADF antenna was bent and one of the antenna fibre glass mountings fractured. The port engine, which had generated the force ledge, was hand turned and there was no apparent damage. The engine was then started and a power check carried out - all readings were normal and the propeller control operated satisfactorily throughout its range including feathering. There was no indication of vibration at all. During the run-up Mr. Anderson observed the propeller rotation from the port wing tip and then appeared to be no defects.

Signature of Witness

I declare this to be a true statement.

Date/Time

Place

Signature of Inspector

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 98610

I then decided to start the starboard motor and carry out a turning check. This was satisfactory and there was no wear on either of the brakes. All the tyres were still fully inflated and in good condition. I then decided that the aircraft should return direct to Stanley for detailed inspection. At this point I gave the co-pilot the job of flying the aircraft which he elected to do. There were the same three children on board and we landed at Stanley at 1410 hrs local. During the landing run no attempt to brake the aircraft was made and the only use of brakes made was when turning and coming to a halt at the hangar. Brake reaction was normal.

19. When the aircraft was inspected the substantial damage already mentioned was confirmed and the prominent engineer discovered that the propeller was in fact out of track. Comparison checks of the engine bays revealed slight "oil canning" of the after nacelle of the port engine. The port leg landing stiffener was also found to be damaged.

Signature of Witness

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

WITNESS STATEMENT (continued)

File:

Continuation of WITNESS STATEMENT

Page No. 10 of 10

20. I estimate the grass on the strip at H&C
was the approximately six inches long and
very wet. My feet were soaked after walking around
for a few minutes.

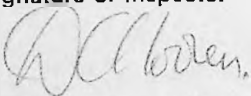
Signature of Witness

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector



WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 10810

20. I estimate the grass on the strip at that time to be approximately six inches long and very wet. My feet were soaked after walking around for a few minutes.

21. I confirm that Captain Alsop advised that for soft-strip operations the Insensens should be loaded to position the COG at or slightly beyond the aft limit. He did not say how much beyond.

Alsop
13 MAR 80.

Signature of Witness

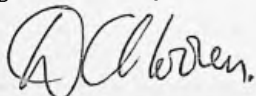


I declare this to be a true statement.

Date/Time

Place

Signature of Inspector



WITNESS STATEMENT (continued)

WITNESS STATEMENT

Accidents Investigation Branch, Department of Trade & Industry		Page No. 1 083
Name DR. JOHN ALEXANDER FERGUSON	Age OVER 21	Normal address GRASSLANDS TRIALS UNIT, PORT STANLEY
Occupation TEAM LEADER GRASSLANDS TRIALS UNIT		Temporary address
<p>1. I am employed by the Overseas Development Administration as team leader of the Grasslands Trials Unit, Falkland Islands. Since December 1979 I have visited about 7 grass airstrips, of which I have landed in the Islands at Douglas Station, Pebble Island, and Hill Cove. The characteristics of the surface of these seven strips, and probably all other in the Islands, ^{main} will differ. The reasons for these differences are:</p> <ul style="list-style-type: none"> ① The length of time from cultivation to being used by an aircraft. ② The management of the strip in terms of whether aircraft are allowed on it between flights. This will affect the length of the grass, species of grass, and consolidation of the first 6 inches of the top top soil. ③ Species of grass ④ Length of grass. ⑤ The ^{physical} basis of soil characteristics. 		
Signature of Witness <i>John A Ferguson</i>	I declare this to be a true statement.	Date/Time 8 MAR 80 Place STANLEY FALKLAND ISLANDS
Signature of Inspector <i>R. Claren</i>		

Continuation of WITNESS STATEMENT

Page No. 2

83

(6) Rainfall and drainage (7) Soil Fertility

2. During summer there are species of grass that are better suited than others to aviation use because of their habit of growth. For example creeping grass would be better suited to most situations than erect growing species. Some species even provide better anchoring than others.

3. The grass at the Boundary Strip at Hill Line after the accident on 12 Feb 80 was about 60cm high, very lush and thick, some of the best ^{feed} ~~growing~~ grass I have seen on the Islands. I identified at least 5 species including rice grasses, weathervane grasses, cox's foot, plus white clover. The grass was very wet - water was dripping off grass when was disturbed. Without waterproof clothing my feet and trousers would have been sodden after 20 or so paces. There was virtually no wind, just a small ripple in the water which I thought from the aircraft and from the strip.

4. Now seated in Row 4, Right Side Window seat, and got out of the left hand door when behind building.

5. I estimate the aircraft touched down between $\frac{1}{3}$ and $\frac{1}{2}$

Signature of Witness

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

WITNESS STATEMENT (continued)

Continuation of WITNESS STATEMENT

Page No. 383

way down the airstrip. I did see a slightly long time from ~~the~~ crossing the marker barrels to actually touching down.

6. I was watching the right side wheels when the aircraft touched down (I had actually been looking at the grasses). The wheels touched after touch down and then they locked very soon afterwards - within about two seconds I would say. There was no apparent deceleration. I watched the wheels on and off and ~~each time~~ I saw them they appeared to lock and no turning. There was ^{water} spraying out in a type of low wave.

Signature of Witness

I declare this to be a true statement.

Date/Time

Place

Signature of Inspector

WITNESS STATEMENT (continued)

WITNESS STATEMENT

Accidents Investigation Branch, Department of Trade & Industry		Page No. 183
Name JARREN LIVERMORE	Age 19	Normal address 5 CROZIER PLACE, STANLEY F.I.
Occupation STUDENT		Temporary address
<p>1. I am a student and at the time of the accident to VP-FAY on 12 Feb 1980 I was employed by the Grassland Trials Unit. I have ^{often} flown in Beaver floatplane aircraft and had about 15 landings as passenger in the Islander.</p> <p>2. When the aircraft landed at Hill Cove on 12 February I was in the 4th row right hand seat and was looking out of the window. I have landed at Hill Cove 3 times previously and have noted that the landing strip goes upwards initially and then slopes down. On previous flights the aircraft has touched down before the ridge dividing the two slopes, with the nose wheel on the ground by this point. I have noticed that as the aircraft crosses the ridge the nose wheel clears the ground for a short period. On two occasions the pilot was Captain Ayres, and on the other</p>		
Signature of Witness J. Livermore	I declare this to be a true statement.	Date/Time STANLEY, FALKLAND ISLANDS
Signature of Inspector D.A. Cohen.		Place 8 MAR 80

WITNESS STATEMENT

Continuation of WITNESS STATEMENT

Page No. 283

time the crew was Mr. Anderson in the left seat and Captain Kerr in the right.

3. On 12th February I noticed that the aircraft crossed the threshold marker chains at a greater height than on previous occasions and the touch down was made well beyond the ridge but I can't say exactly how far along the strip.

~~From~~ I watched the right wheel at touch down as I like to see the operation of the suspension. I did not notice any rotation in the wheel right from the beginning of the landing run. The airstrip was quite wet - no big puddles or anything just the grass that was wet, but there was water spraying up from the wheels. I estimate the aircraft was going faster than 20 mph when it hit the chain at the far end of the strip.

4. After I got out I walked along the strip and saw marks from the two main wheels, and ~~was~~ also that the grass was extremely wet. I estimate the length of the grass in most places along the strip was between 3 & 4 inches.

5. I saw Mr. Tim Blake together with Mr. Anderson

Signature of Witness

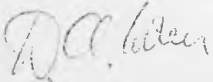


I declare this to be a true statement.

Date/Time

Place

Signature of Inspector



WITNESS STATEMENT (continued)

File:

Continuation of WITNESS STATEMENT

Page No. 3 of 3

measuring the interior with Miss Baskett's tape measure.

Signature of Witness

I declare this to be
a true statement.


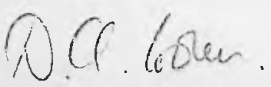
Date/Time

Place

Signature of Inspector

WITNESS STATEMENT (continued)

WITNESS STATEMENT

Accidents Investigation Branch, Department of Trade & Industry		Page No. 067
Name LIONEL GEOFFREY BLAKE	Age OVER 21	Normal address HILL COVE, FALKLAND ISLANDS
Occupation FARM MANAGER		Temporary address
<p>1. The bottom (north) end of the Hill Cove North-South airstrip has been in use for some 5 years for Cessna light aircraft. When it was proposed that FIGAS might operate on British Norman Islander the strip was inspected by Mr. Bala Kanagasabai (Airport Manager Stanley) and Captain Russ Hopkin of FIGAS. At about this time on their suggestion I had 50 yards of grass hedge which ran East West and marked the South boundary of the strip as it was then, removed so as to give a strip long enough for an Islander.</p> <p>2. I later received from FIGAS Information Sheets 1 and 2, dated April and July 1978, on Landing Strips. A little later, in my absence, Mr. Wainwright of the UK CAA inspected the strip and advised a further 10 yards of hedge be removed, and this was done.</p> <p>3. In November 1979 Captain Alsop made the first landing with the Islander, having previously inspected the</p>		
Signature of Witness 		I declare this to be a true statement.
Signature of Inspector 		Date/Time 10 MAR 80 Place HILL COVE FALKLAND ISLANDS

WITNESS STATEMENT

WITNESS STATEMENT

Accidents Investigation Branch, Department of Trade & Industry		Page No. 2867
Name L. G. BLAKE	Age	Normal address
Occupation		Temporary address
<p>Strip. On his first visit his only comments were that he was a little worried about possible turbulence with a South-west wind, and also that he wouldn't like take off to the South fully loaded without some experience of the Strip first. After his flight in the Islander he said that ^{Strip was} fit for operations. However, I received no airstrip licence as such.</p> <p>3. Before each aircraft movement I drive over the airstrip in a landrover and generally inspect its condition to see that it is free of obstacles, animals and geese. I use common sense and previous experience in making these inspections; I have not been issued with any check list or given any training.</p> <p>4. A windsock and fire/crash equipment as recommended by DCA is due shortly, but none was available at the time.</p> <p>5. Since Capt Alsop's landing the Islander has made about 20 landings, several in both directions without any apparent difficulty.</p>		
Signature of Witness J. S. Allen		I declare this to be a true statement.
Signature of Inspector R. A. Boden		Date/Time Place

WITNESS STATEMENT

WITNESS STATEMENTAccidents Investigation Branch, Department of
Trade & IndustryPage No. 3-867

Name

L. G. BLAKE

Age

Normal address

Occupation

Temporary address

6. On 12th February I went down to the airship at about ~~1100~~ 1100 Camp Time (\approx 1500 GMT) and checked the strip as usual. I found the grass was very wet, with globules of water on the blades. There was no surface water lying on the ground. There had been intermittent rain showers since 0800 hrs Camp Time that morning. I don't know what the weather had been that night.

7. I positioned myself alongside a gorse hedge on the east side of the strip together with the Assistant Manager and three settlement wives. The aircraft approached the settlement from the north-east and made a right hand circuit to the south. It made a normal approach in a northerly direction except that it appeared to ~~make a steep approach~~ ^{appear} ~~have been~~ ^{be} ~~previously~~ ^{be} higher than usual at the beginning of its final approach.

Signature of Witness

J. S. BlakeI declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

W. L. Jones**WITNESS STATEMENT**

WITNESS STATEMENTAccidents Investigation Branch, Department of
Trade & IndustryPage No. 4-87

Name

L G BLAKE

Age

Normal address

Occupation

Temporary address

8. I watched the aircraft touch down. The touch down point was beyond the removed gate hedge and well beyond the point of previous Islander landings, which had been within 75 yards of the threshold markings.

9. The aircraft's propellers down. About 5 seconds after touchdown the nose wheel touched the surface.

I noticed water spraying backwards from the main wheels, but did not notice whether the main wheels were turning at this stage. However I am sure they were turning after the initial touchdown. The Assistant Manager said that the aircraft was going to have a go to stop, and I agreed. It disappeared from view, I saw a marker drum appear in the air closely followed by pieces of gorse. I went down in one Landrover, closely followed by the Assistant Manager in another. We braked the Islander with its port engine

Signature of Witness

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

W. J. Allen

WITNESS STATEMENT

WITNESS STATEMENTAccidents Investigation Branch, Department of
Trade & IndustryPage No. 5067

Name

L. G. BLAKE

Age

Normal address

Occupation

Temporary address

embedded in the gorse hedge ^{beyond S.O.} ~~at~~ the end of the strip. The propellers were stopped and it appeared that everyone was out of the aircraft.

10. The air unit was unhandled out and later, while the DCA was talking to Stanley airport on the aircraft radio I, together with Captain Anderson ~~to~~ walked up the strip.

We followed the marks we agreed had been made by the aircraft's main wheels and agreed that the point at which those marks ceased was the touch down point, which I marked by putting my hands out on the ground. This point was north and west of the position I had been standing when the aircraft landed. The wheels marks became more definite about 50 yards after they started. I noticed no obvious signal scattering and the turf wasn't disturbed or cut about in any way.

Signature of Witness

T. J. AllenI declare this to be
a true statement.

Date/Time

Place

Signature of Inspector

Allen

WITNESS STATEMENT

WITNESS STATEMENT

Accidents Investigation Branch, Department of Trade & Industry		Page No. 6007
Name L.G. BLAKE	Age	Normal address
Occupation		Temporary address
<p>11. The ground underlying the grass on the strip is a peaty - clay, which is very firm, having last been cultivated in about 1963. It is an old and established pasture. From my experience of wheelbar vehicles on grass I am sure that the commencement of the wheelmarks that marked designated the aircraft's initial contact with the ground, and not simply the start of braking. I judge this by the change change in apparent colour of the blades of grass and the removal of the water sheen.</p> <p>12. After the aircraft had departed for Stanley, taking off on the East-West Strip, I together and the Assistant Manager took measurements of the wheel marks made on landing and I submitted this evidence in a letter to the Acting Governor. I used a steel 100 ft tape measure. I identify the photocopy of my letter produced and sign it to make it.</p>		
Signature of Witness L.G. Blake	I declare this to be a true statement.	Date/Time Place
Signature of Inspector DL Baker		

WITNESS STATEMENT

WITNESS STATEMENTAccidents Investigation Branch, Department of
Trade & Industry

Page No. 7067

Name

L. G. BLAKE

Age

Normal address

Occupation

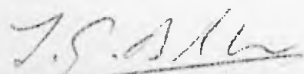
Temporary address

13. As far as I can recollect I asked Captain Anderson whether he agreed that the beginning of the wheel marks was where he had touched down and he said "Yes", and did I think I knew where braking started. I said "Yes", further down the track because this was the point I had seen spray from the wheels suddenly increase from a light fanning to a heavy spray.

14. In clarification of my statement as the wind in my letter of 15 Feb to the Acting Governor, by "a light air" I mean a wind of only 2 or 3 knots.

15. The point at which I was standing was the point at which the Islander usually stops, which is along the ~~road~~ road.

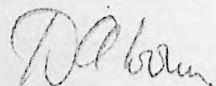
Signature of Witness

I declare this to be
a true statement.

Date/Time

Place

Signature of Inspector



WITNESS STATEMENT

14 March 1980

cc AIR/7/7 ✓

Chief Secretary

Director of Civil Aviation

CERTIFICATE OF AIRWORTHINESS

I return herewith the UK "Certificate of Airworthiness for Export" for the Islander aircraft which I believe you provided for the Inspector of Accidents, Mr Cooper.

2. We discussed this the other day and I informed you that the legal view was that this certificate would need to be validated by the Governor or replaced with a locally issued certificate under the provisions of the Air Navigation (Overseas Territories) Order 1977. I enclose a copy of the Senior Magistrate's opinion on this matter for your information.

3. Mr Cooper has now given me his draft report on the Hill Cove incident involving the Islander and one of his recommendations is that the aircraft should not fly again until a valid Certificate of Airworthiness is in existence.



F E Baker

CHIEF SECRETARY

I attach two letters from Mr D A Cooper, Senior Inspector of Accidents, one concerning the Halley Base accident and the other concerning the accident to Islander VP-FAY at Hill Cove on 12th February. Mr Cooper's investigations into both these accidents will be continued in the United Kingdom but he has meanwhile been able to produce what he stresses is a preliminary draft report on the Islander accident.

2. I have had the opportunity of discussing this with him and I would like to make the following preliminary comments:

- (a) Mr Cooper stresses that he is unable to allocate a cause for the accident until he has made further enquiries about the landing performance of the aircraft on wet airfields, and until he has had a chance to study the survey of the Hill Cove strip. We had a survey made of the Hill Cove strip levels last week and Mr Cooper was able to take this home with him.
- (b) Turning to the points which he recommends to be studied with a view to preventing a recurrence of this kind of accident, a number of these concern documentation and others the actual operation of the aircraft.
- (c) With regard to the Certificate of Airworthiness I have spoken to the DCA about this. Apparently he was under the impression that the UK Export Certificate issued by the CAA was valid for operations here. I have referred him to Mr Cooper's findings and a legal opinion produced at my request by the Senior Magistrate, both of which firmly indicate that either the Export Certificate should be validated or a new Certificate for this territory should be issued. I have written to DCA to confirm this and he is seeking the Senior Magistrate's advice with reference to the Air Navigation (Overseas Territories) Order 1977. I have said that the aircraft should not fly again until it has a valid Certificate of Airworthiness.
- (d) With regard to the certification of the two RAF technicians, this again appears to have been overlooked although Mr Cooper and I discovered earlier Gazette Notices appointing the preceeding technicians under the Air Navigation (Overseas Territories) Order 1977. I have asked DCA to submit Notices for signature and Gazettal.
- (e) The question of load sheets is obviously of particular importance. I understand that some of the FIGAS pilots use their own personal type of load sheet, and others simply estimate. Mr Cooper has discussed this thoroughly with DCA and recommended the introduction of a suitable load sheet. The fact that preliminary indications that the Islander aircraft's centre of gravity was "outside the aft limit" on the flight from Pebble Island to Hill Cove as part of the accident is particularly disturbing.
- (f) The matter of the use of a Technical Log for this aircraft has also been discussed by Mr Cooper with DCA. I understand that Capt Alsop had also made recommendations about this and I am sure that we should insist that the Log (there is a form in preparation, I understand) should be brought into use before the aircraft is allowed to fly again.

/(g)

- (g) The production of an Operations Manual was initiated by Capt Alsop. Unfortunately the extracts from the Loganair Operations Manual which he left behind to form the basis of a FIGAS Manual did not appear to be available to FIGAS pilots at this time. Obviously Mr Cooper's recommendation that this should be completed as soon as possible is very important.
- (h) A Training Manual for the Islander aircraft is also, I understand, in preparation and, although YE could (theoretically) grant an exemption from this requirement under the Air Navigation (Overseas Territories) Order, it would seem obvious that this should be completed and introduced as quickly as possible. (Mr Cooper verbally recommended that Captain Ayers might be asked to undertake this task).
- (i) The question of landing on wet grass surfaces is apparently the subject of a recommendation in a part of the Loganair Operations Manual and, although it does not go into great detail, it would obviously have been of some guidance to FIGAS pilots had that information been known to them. This again, I fear, is a result of Capt Alsop's work being, to some extent, disregarded.
- (j) The fact that the Hill Cove strip had not been accurately surveyed is regarded as of great importance by Mr Cooper. As we have already discussed, the Islander operation was introduced with some haste and is still, to a large extent, experimental. Consequently many of the strips used by this aircraft are not properly surveyed. We have attempted to do this but have been faced with the usual problems of manpower. My own feeling would be that the aircraft should not be allowed to fly into any strip which has not been properly surveyed and licensed.
- (k) Mr Cooper's next point, concerning the marking of airstrips, is, in a sense, related to the previous one, and again my recommendation would be that no airstrip should be used by the aircraft (except in emergencies) until it is marked in all respects to the satisfaction of the DCA.
- (l) Mr Cooper's next point is also related.
- (m) The provision of wind socks is, of course, highly desirable. Some settlements have provided these for themselves (eg Fox Bay East) but others do not appear to be aware of the vital necessity for this sort of equipment. A consignment of wind socks has been ordered by DCA and I have recently given him a dispensation to sell these to settlements at cost price only in order to encourage settlement managers to obtain and instal them as soon as possible. I am not sure just how important this is but here again my personal inclination would be to make the provision of a wind sock absolutely mandatory for any airstrip to be used by the Islander.
- (n) I suspect from Mr Cooper's sub-paragraph 12 that he is not completely in the picture with regard to fire-fighting equipment. Six mobile outfits (designed for towing behind land rovers) have been provided under the ODA project. However, these cost £3,000 each and are somewhat elaborate for our circumstances. DCA is in process of arranging for these to be delivered to, and taken over by, the settlements with the heaviest potential Islander traffic. The problem will be the provision of suitable equipment for the other air-fields.

- (o) Mr Cooper's next point (sub-para 13) I regard as being of great importance. The licensing of airstrips for the Islander was also recommended by the Inspector appointed for the previous Islander accident investigation. I would suggest again that the aircraft should not be allowed to fly to any airstrip (except in emergencies) until it has been properly licensed in accordance with the Air Navigation (Overseas Territories) Order.
- (p) I have no particular comment on Mr Cooper's sub-para 14 other than that I believe DCA is trying to introduce a system for passing information about the condition of the airfields by radio.
- (q) I agree with the recommendation in Mr Cooper's sub-para 15. I have discussed this with him at some length, and my conclusion is that, in spite of the fact that there may be internal repercussions within the Air Service, Capt Ayers should be appointed to carry out the functions suggested as soon as possible.
- (r) Although the recommendation in Mr Cooper's sub-para 16 would involve us in expense, I consider that in the interests of safety and efficient operation of the Air Service generally we should certainly adopt it.

gls

CS

17.iii.80



19 March 1980

W H Teach Esq CBE
Chief Inspector of Accidents
Accident Investigation Branch
Department of Trade

Dear Mr Teach,

1. I should like to place on record my thanks to you for sparing Mr Cooper at such short notice to come to the Falkland Islands to investigate the accidents to the FIGAS Islander and the BAS Twin Otter, and to say how much we have appreciated Mr Cooper's helpful and professional advice.
2. I was shocked to read in his Flight Safety Report that three of his recommendations had been made previously, by Mr Wilkinson in his report into the accident to the FIGAS Islander in 1975 and that they had not been implemented. I have instructed that the 16 recommendations made by Mr Cooper be implemented forthwith and I assure you that I shall do my utmost to see that my instructions are carried out without delay. It is quite obvious to me that Mr Cooper's visit was both timely and necessary, and on behalf of the Falkland Islands Government I should like to thank you for making his visit possible.

Yours sincerely,

Paul Hume

cc: Chief Secretary



19 March 1980

Mrs M Rosser
Latin America Dept
Overseas Development
Administration

Dear Mary,

FIGAS: ISLANDER

1. Having looked again at your report of January 1979 on your visit to the Falkland Islands, I cannot blame you for saying "I told you so". I have now read Mr Cooper's valuable Flight Safety Report and the Islander will not fly again until action on his recommendations has been taken. You may like to have a copy of the minute I have sent to the Chief Secretary on the subject.
2. I think we can count ourselves fortunate that the two accidents to the Islander were not more serious; emphasis must now be on flight safety and accident prevention. Regardless of expense and the time taken to get the Islander back into service.

Yours sincerely,

Rep

R D Hunt

cc: Chief Secretary

20 March

80

Director of Civil Aviation
FIGAS
Stanley

As I briefly mentioned on the telephone last night I enclose a photocopy of Don Cooper's preliminary draft report with a copy of HE's minute on the recommendations.

Don Cooper's intention in providing us with the draft report pending his further enquiries in London was to enable the Governor to take early action on some of the recommendations which have important safety aspects.

I will be grateful if you could look at the report and HE's minute with a view to you and I discussing at an early stage the implementation of the recommendations.

F E Baker

CHIEF SECRETARY



Chief Secretary

FIGAS: THE ISLANDER

1. Thank you for your minute of 17 March and helpful comments on Mr Cooper's Flight Safety Report of 13 March. In the light of his recommendations, I consider that there is no alternative to the following course of action.

2. Before the Islander flies again:

(i) a Falkland Islands Certificate of Airworthiness should be issued. (I see from your minute that this is in hand);

(ii) the two Royal Air Force technicians should be officially appointed under the Air Navigation (Overseas Territories) Order of 1977, Article 9 (4) (also in hand);

(iii) a technical log should be brought into use as required by ANO (OT) 1977 9 (6);

(iv) a Training Captain on the Islander should be appointed.

3. Before the Islander operates into any airstrip (except in an emergency):

(i) the airstrip should be licensed under ANO (OT) 1979. Before a licence is issued:

(a) the airstrip should be surveyed;

(b) the airstrip should have lateral as well as end boundary markers;

(c) the airstrip should have markers indicating the safe touchdown zone;

(d) the airstrip should have a windsock;

(e) the airstrip should have fire extinguisher and crash equipment, and personnel trained in the use of such equipment;

(f)



(f) an airstrip controller and deputy should be appointed;

(ii) air/ground communications should be provided. Failing direct radio contact, messages should be relayed via Stanley.

4. Before a pilot (except the Training Captain) flies as Pilot-in-Command:

(i) he should undergo a "Certificate of Test" check flight as required by ANO (OT) 20 (4);

(ii) he should be fully conversant with the Operations Manual;

(iii) he should be fully conversant with the Training Manual;

(iv) he should ensure that the Islander is loaded in accordance with ANO (OT) 1977 28.

5. Before the Islander carries passengers:

(i) an Operations Manual should be completed as required by ANO (OT) 1977 25;

(ii) a load sheet should be made out for each flight as required by ANO (OT) 1977 28 (4);

6. Other action to be taken:

(i) the Pilot-in-Command should get an airstrip assessment from the airstrip controller or farm manager before starting his approach to land at any airstrip;

(ii) the Training Captain, when appointed, should introduce a Training Manual for the Islander as required by ANO (OT) 1977 26. (No pilot other than the Training Captain should carry passengers until this has been done);

(iii) we should invite the British Aviation Authority to send a member of their Flight Operations to the Falkland Islands in about six months' time and thereafter at periodic intervals to inspect pilots' performance and thus maintain operations' standards over the years.



7. It seems to me that Mr Ayres is the obvious choice for Training Captain on the Island and you may wish to consider an appropriate increase in his salary in recognition of his additional responsibilities.

A handwritten signature in dark ink, appearing to read 'R M Hunt', with a long horizontal stroke extending to the right.

18 March 1980

R M Hunt

NOTE ON A MEETING WITH HE AND DCA: 7 APRIL 1980

The meeting was based on the various matters raised in Mr Cooper's interim report on the Islander incident at Hill Cove and the following points emerged.

1. CERTIFICATE OF AIR WORTHINESS

This has now been signed by HE.

2. GAZETTAL OF TECHNICIANS

A draft has been produced and will be submitted for gazettal in the near future.

3. TECHNICAL LOG

The Head Printer to be asked by the CS if he could give some priority to this task. Meanwhile the Loganair version to be used if necessary.

4. TRAINING CAPTAIN

DCA to appoint John Ayers Training Captain in general terms (the situation might change if Captain Alsop were to be recruited for duties specifically concerning the Islander). Other FIGAS pilots are to be shown the Cooper recommendations.

5. LICENSING OF AIR FIELDS

DCA considered the first airfields to be processed for licensing should be Darwin, Fox Bay East, North Arm, Chartres, Hill Cove and Pebble Island. Of these Hill Cove had already been surveyed - as had Port Stephens, but this would have to enjoy a lower priority.

Special dispensation for Airstrips: DCA suggested that Kepple, Sedge, Carcass, West Point, New Island, Beaver, and Sealions should receive special dispensations from the Governor so long as they could provide at least the basic requirements, including wind socks and strip markings.

6. MARKING OF STRIPS

DCA to issue instructions to strip owners and operators concerning the required markings, making it clear that the Islander will not be operating to any airstrip which does not comply.

7. FIRE FIGHTING EQUIPMENT

Darwin, Fox Bay East, North Arm, Hill Cove, and Pebble Island have all agreed to accept fire-fighting trailers. These should be shipped out, if possible, by Forrest; HE will contact OCRM and Capt Sollis about this. One fire-fighting trailer will be retained at Stanley Airport in order to reduce the requirement for a fire engine coming out from town.

50 lb Dry Powder Extinguishers: We already have six of these which DCA suggested should be distributed to Chartres, Teal Inlet, Port Howard, Port Stephens, Dunnose Head, and Saunders Island.

8. APPOINTMENT OF CONTROLLERS AND DEPUTIES

DCA to write letters to all owners and operators requesting them to appoint a controller and, where possible, also a deputy.

9. GROUND TO AIR RADIO COMMUNICATIONS

DCA to look into this further with particular reference to the possibility of using 2m sets.

10. PILOTS



8 April 1980

J Kerr Esq MBE
Director of Civil Aviation
Stanley

Dear Jim,

MR COOPER'S FLIGHT SAFETY REPORT

1. At our meeting yesterday with the Chief Secretary I undertook to talk to the Director of Public Works about surveying airstrips for the Islander and also to enlist Major Gilding's help in delivering the fire fighting trailers to five of the main airstrips.
2. I spoke to Mr Mason this morning and he is willing to make his surveyor, Mr Bonner, available to survey the main airstrips as soon as possible. I suggest you give him priority on the Beaver and arrange the flights so that he can visit and survey the following airstrips with the least possible delay:

- (i) Darwin
- (ii) Fox Bay East
- (iii) North Arm
- (iv) Chartres
- (v) Pebble Island

As you know, Mr Bonner has already surveyed Hill Cove and should be able to produce a diagram with the necessary data for making another visit there.



3. I said to Mr Mason that all you required was a basic survey showing the length and breadth of the airstrips, their gradients and magnetic bearings. Please let him know if you require anything else. On this basis, Mr Mason thought that one day in each airstrip would suffice with another week to draw up the diagrams.

4. I have also spoken to Major Gilding who is happy to transport the fire fighting trailers in mv Forrest and hopes to be able to deliver them to North Arm, Hill Cove and Pebble Island within the next two weeks. He thinks he should be able to deliver one to Fox Bay East within a month. He can also deliver one to Darwin but suggests that the Monsunen could probably take it there sooner. I shall speak to Mr Milne about this. As Mr Mason is short of trained fire fighting personnel, Major Gilding also agreed to instruct one of his marines trained in fire fighting to visit the airstrips and show the airstrip controller and his deputy how to operate the fire fighting equipment. He undertook to get in touch with Mr Mason on the detailed arrangements.

5. At our meeting yesterday we also agreed that the Chief Secretary would forward to me the appointments of the two Royal Air Force technicians for my signature and that he would check with the Government Printer the progress made on printing a local technical log. You agreed to appoint Mr Ayers as Training Captain in writing and to write to all farm managers explaining in detail what they must do before their airstrips can be licensed. We agreed that the six to

/be



be given priority were Darwin, Fox Bay East, North Arm, Chartres, Hill Cove and Pebble Island. We also agreed that I should give special dispensation where necessary to the following airstrips that could not reasonably be expected to meet the requirements for the granting of a licence: Keppel, Sedge, Carcas, West Point, New Island, Beaver and Sea Lion. Nevertheless, we agreed that we should insist on windsocks, lateral and end boundary markers.

6. We also agreed that the six x 50 kilo spherical dry powder fire extinguishers should be distributed as soon as possible to the following airstrips: Chartres, Teal Inlet, Port Howard, Port Stephens, Dunnose Head and Saunders Island. We concluded that San Carlos, Port San Carlos, Green Patch and Weddell Island would have to wait until more fire extinguishers were available.

7. You also agreed to instruct farm managers to appoint an airstrip controller and deputy and to look into the possibility of providing direct air-to-ground communications between the aircraft and the airstrip.

8. On Mr Cooper's flight safety recommendations, we agreed that you and Mr Ayers would give each other a "certificate of test check flight and that Mr Ayers would then, as Training Captain, check out the other pilots in F104S and issue them with Test Certificates. You also undertook as a matter of urgency to arrange for the operations manual and the training manual to be brought and kept up to date,

/with



with particular reference to the Islander operations. I understood you to say that technical logs and load sheets were being maintained but I suggested that you should look at ANO (OT) 1977 9 (6) and 28 (4) respectively to ensure that they were being maintained in accordance with the regulations. You also undertook to instruct airstrip controllers, when appointed, in their duties and, in particular, how to give proper assessment of airstrip conditions before flights.

9. Finally, we agreed we should invite the British Civil Aviation Authority to send a member of their flight operations to the Falkland Islands in about six months' time as recommended by Mr Cooper.

Yours ever,

A handwritten signature in dark ink, appearing to read 'R M Hunt', is written over a horizontal line.

R M Hunt

cc: Chief Secretary
Director of Public Works

C & W

Ref: AIR/7/7 ✓

TO: ACCIDENTS INVESTIGATION BRANCH, DEPT OF TRADE, LONDON
TELEX NO: 8811074

No 224

FOR DA COOPER SENIOR INSPECTOR OF ACCIDENTS FROM CHIEF SECRETARY
FALKLAND ISLANDS GOVERNMENT

The Governor proposes to broadcast in the near future concerning the re-institution of Islander operations following implementation of recommendations in your flight safety report. He would also like to be able to refer to your final report and we wonder if it is possible to indicate when this might be available. Many thanks for all your assistance. Regards

CHIEFSEC

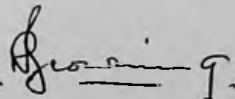
17. The following matters were "mentioned" in the course of discussions and under the general heading of "any other business" -

AIR/7/7

17.10 FIGAS

3/80

- Ai Operations by the Islander Aircraft. The report of Mr. D. Cooper, Senior Inspector of Accidents, has not yet been received. Before he left the Colony, however, he had submitted recommendations aimed at improving safety and strongly urged that they be implemented forthwith. Thus it had been decided that all airstrips would be surveyed and then licensed, where possible. The surveying had now been put in hand as a matter of priority by the Public Works Department. Dispensation from fully complying with all the requirements would have to be given in the case of certain airstrips and a list of such airstrips would be provided by the Director of Civil Aviation and submitted for consideration.
- Aii Mr. Cooper's report also contained recommendations with regard to the provision of markers, windsocks, firefighting and crash tenders, and personnel at each airstrip.
- B Re-organisation of FIGAS. Mr. J. Kerr was expected to retire at the end of May 1980 and consideration would have to be given to a successor in title and role. Consideration would also have to be given to the number of pilots that FIGAS would then need. Council discussed the application received from Mr. Andy Alsop for appointment to the flying staff of FIGAS and was in favour of Mr. Alsop being recruited but only if he were prepared to do a three year tour. O.D.A. to be so informed.


Clerk of Council

By PC. simulate of P/A

in AIR/7/7.

YB

H.E. P 7/5
C.S.

OK
7/5

214 GOVERNOR FK

214 GOVERNOR FK

8811074DTHQ G

**ACTION
COPY**

FROM DEPARTMENT OF TRADE LONDON

TO ROUTINE FALKLAND ISLANDS TLXNO 001964 07 MAY 80

FOR CHIEF SECRETARY, FALKLAND ISLANDS GOVERNMENT

FROM D A COOPER, AIB DEPT OF TRADE LONDON

REF YOUR AIR/7/7 DATED 5 MAY

INVESTIGATION INTO ISLANDER'S PERFORMANCE WHEN LANDING
ON VERY WET GRASS SURFACES NOT YET COMPLETE.

ESTIMATE FINAL REPORT AVAILABLE BY MID JULY . LETTER
FOLLOWS

BEST WISHES

DONALD COOPER

NNNN

8811074DTHQ G

214 GOVERNOR FKEO

EXTRACT FROM THE MINUTES OF EXECUTIVE COUNCIL
MEETING NO 4/80 HELD ON TUESDAY 20th MAY 1980

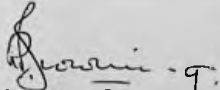
AIR/7/7

4/80

2.9. FIGAS (3/80 - 17.10)

- 2.9.1. The report of Mr. D. Cooper, Senior Inspector of Accidents, was still awaited. Firefighting equipment had now been sent to the main airstrips in the Camp, and training in the use of the equipment was being arranged for personnel on the farms concerned.
- 2.9.2. The position with regard to the re-organisation of FIGAS was far from satisfactory. Mr. Alsop's decision on the offer made by Government had not yet been received although he was being pressed for a reply. O.D.A. had been asked to point out to Mr. Alsop that Mr. Ayers would become Director of Civil Aviation on Mr. J. Kerr's retirement and that consequently Mr. Alsop would be subordinate to him.

- 2.9.3. His Excellency said that he was conscious that FIGAS was a matter of concern particularly to people living in the Camp and that he proposed making a radio broadcast soon fully to explain the position.


Clerk of Council



DEPARTMENT OF TRADE

Accidents Investigation Branch

Kingsgate House 66-74 Victoria Street London SW1E 6SJ

Telephone Direct Line 01-212 5887
Switchboard 01-212 7676

Mr F E Baker, OBE
Chief Secretary
Stanley
Falkland Islands

Your reference

Our reference

EW/B184/01

Date

13 May 1980

Dear Dick,

1. I had just returned to the office after nine days away intent on writing you this letter when your telex arrived. I trust all is going well with the Islander. The state of the two investigations is as follows.

Twin Otter

2. I am awaiting a medical assessment of the pilot's vision and of the effect the photocromic lenses in his spectacles might have had in his height judgement over the flat snowy surface. I am also investigating the behaviour of the type of radio altimeter fitted to the aircraft in low temperature over such surfaces as the pilot has stated that when he landed it was still indicating 50 to 70 ft and that this was a recognised occasional phenomenon.

Islander

3. I am completing a study of the Islander's wet grass landing performance. I have asked Pilatus Britten Norman to send FIGAS a flight manual supplement on wet grass operations which was missing from VP-FAY's flight manual. This says the same as does the page in the Loganair operations manual that I referred to in my Flight Safety Report.

4. I have also had FIGAS placed on the mailing list for AIB bulletins as I hope that regular details of the sort of accidents happening in the UK may be of interest and value to them and to your two private operations.

5. One point I failed to take up in the FSR because it only occurred to me after my ~~section~~ ^{section} was the unsuitability of 40 gallon (or other) drums as runway threshold markers. I have discussed this with the CAA; they do not approve and say you should use frangible markers. They suggest prismatic ones made of plastic or of plywood and canvas, or flat ones (3 x 1 metre sheets), or even plastic road cones. So I recommend some action here.

6. As I said in my telex I hope to get the Islander report to the Governor by mid-July, and I intend the same date for the Twin Otter one as well. However much depends on the progress of the detailed studies under way and my other work load.

*Regards to all,
Best wishes*

Dun.

See outline also! Newshyde typing in Whitehall

7. I hope you are all well. Please give everyone my regards, and tell Connie that unfortunately none of my penguin slides came out - the roll did not wind on!



PA.

AIR 17/7.

GOVERNMENT HOUSE,
FALKLAND ISLANDS.

Chief Secretary

ACCIDENT TO ISLANDER VP-FAY on 12 FEBRUARY 1980

/ 1. I enclose two copies of Mr Cooper's draft report into
/ this accident, together with a letter to Mr Anderson asking
him if he wishes to exercise his rights of making represent-
ations under Regulation 8(5) of the Falkland Islands Regulation
number 3 of 1959.

2. I should be grateful if you would forward the letter and
one copy of the draft report to Mr Anderson and let me have
his reply in due course. I should also be grateful if you
would let me have comments on those parts of the report that
affect the Falkland Islands Government.

R M Hunt

8 August 1980

PA

CHIEF SECRETARY'S OFFICE
THE SECRETARIAT
STANLEY

Ref: ZMMx AIR/7/7 ✓

11 August 1980

Ag Director of Civil Aviation

2/10

In the last bag the Governor received copies of Don Cooper's draft Report on the accident to the Islander at Hill Cove on 12th February last, together with letters to be sent to various people concerned.

2. I enclose a photocopy of the draft report and also a copy of Don's covering letter to ME, from which you will see that we, as Falkland Islands Government, are also invited to comment. Perhaps at an early stage you could telephone me so that we can discuss the report and attempt to draft our comments together.



F E Baker
CHIEF SECRETARY

PA

CHIEF SECRETARY'S OFFICE

THE SECRETARIAT

STANLEY

Ref: AIR/7/7 ✓

11 August 1980

Mr E Anderson
FIGAS
Stanley

D/O

In the last bag the Governor received copies of Don Cooper's draft Report on the Islander accident at Hill Cove, together with letters to be forwarded to various people concerned. He has asked me to forward the enclosed letter and copy of the report to you. I notice that Don has asked if you would acknowledge his letter and let him know whether or not you intend to make representations. Perhaps it would be easier if you were to forward any such acknowledgement through me as we shall be sending him other papers in the near future. Also, if you wish to consult about this matter in any way, please do not hesitate to come and do so.



F E Baker
CHIEF SECRETARY

JB



DEPARTMENT OF TRADE

Accidents Investigation Branch

Kingsgate House 66-74 Victoria Street London SW1E 6SJ

Telephone Direct Line 01-212 5887
Switchboard 01-212 7676

Your reference

Our reference

EW/B184/01

Date

15/4 July 1980

His Excellency the Governor
Government House
Stanley
Falkland Islands

Sir

ACCIDENT TO ISLANDER VP-FAY ON 12 FEBRUARY 1980

1. I enclose 4 copies of my draft report into the accident to Islands VP-FAY which occurred at Hill Cove on 12 February 1980.
2. Before I can finalise the report I must comply with Regulation 8(5) of the Falkland Island Regulation No 3 of 1959 made under the Civil Aviation Act 1949. The UK accident regulations were revised in 1969 so as to improve the process of allowing persons who might be affected by the report to make comment on relevant parts before the Inspector completed it. I enclose an extract of the UK regulations dealing with this point. In view of this and because part of my investigation and all the report writing had been carried out far removed from the source of most of the evidence and witnesses I consider it would be only fair, and indeed prudent, to follow the UK practice and invite persons or organisations affected by the report to make representations on any matter affecting them before I complete it, rather than state that it would be impracticable for me to comply with Regulation 8(5).
3. In my opinion the affected persons/organisations are: the Falkland Islands government; Captain J Kerr in his triple capacity as Director of Civil Aviation, Chief Pilot FIGAS, and aircraft commander; Mr E Anderson as the handling pilot; and Mr L G Blake, Farm Manager Hill Cove, as the airstrip manager.
4. I will take the same action with Pilatus Britten-Norman and when all representations have been received I will consider them and finalise the report.
5. I enclose covering letters addressed to Captain Kerr, Mr Andrews and Mr Blake attached to a copy of the draft report. If you approve of this suggested course of action I would be grateful if you would instruct a member of your staff to send the letters out, to receive and forward answers, and to forward any representations on behalf of the Falkland Islands government itself. I will take the same action with Pilatus Britten-Norman and when all representations have been received will consider them and complete the report.

I have the honour to be, Sir,
Your Excellency's obedient servant.

D. A. Cooper

D A Cooper
Inspector of Accidents, Falkland Islands

Aic/7/7



Paschoe House
Bow
Credition
Devon.

15th Aug 1980

D.A.Cooper
Accidents Investigation Branch
Kingsgate House
66-74 Victoria St.
London.

Dear Mr. Cooper

Many thanks for your letter EW/B184/01.
with enclosures.

I do not wish to exercise my rights under
Reg ~~295~~ 8(5) and have no objection to the accident report
on the accident to VP-FAY at Hill Cove on 12th Feb 1980

Yours faithfully

A handwritten signature in dark ink, appearing to read "L.G. Blake", written over a horizontal line.

L.G.Blake.



CHIEF SECRETARY'S OFFICE
THE SECRETARIAT
STANLEY
FALKLAND ISLANDS

Ref: AIR/7/7

5 September 1980

Mr D A Cooper
Senior Inspector of Accidents
Board of Trade
Accidents Investigations Branch
Kingsgate House
66-74 Victoria Street
London SW1E 6SJ

Dear Sir,

ACCIDENT TO ISLANDER AIRCRAFT VP-FAY ON 12 FEBRUARY 1980

I refer to your letter to His Excellency the Governor ref CW/B184/01 of 15 July enclosing copies of your draft Report on the accident to Islander aircraft VP-FAY which occurred at Hill Cove on 12 February 1980, and in which you invited the Falkland Islands Government and others to forward to you any representations they might wish to make before you finalised your report.

2. The Falkland Islands Government is grateful to you for affording us this opportunity to make representations. The comments we would wish to make, however, mainly concern section 4 of your draft report, headed "Safety Recommendations" and in this respect I would simply like to take the opportunity of recording what action we have taken as a result of the most helpful Flight Safety Report which you provided before leaving the Colony. Using section numbers as in your draft Report the following action has been taken (or is in process of being taken) by the Falkland Islands Government on the Safety recommendations:-

- 4.2 An Islander section has been produced for incorporation in the FIGAS Operations Manual.
- 4.1 Suitable load sheets and technical log for Islander operations have been produced and will be used for all future Islander operations.
- 4.3 An Islander Training Manual has been produced and an Islander Training Captain was appointed. (He has since left the Falkland Islands Government service but a new appointment will be made as soon as a suitably qualified and experienced pilot is available.)
- 4.4 FIGAS will be introducing the Certificate of Test required by article 20(4) of ANO(OT)1977 as soon as practicable.



5 September 1980

-2-

- 4.5 All airstrips intended for use by the Islander aircraft are now in process of being accurately surveyed (in many cases the survey is completed) and will be approved and licensed in accordance with article 66 of ANO(OT)1977 before being used by this aircraft.
- 4.6 FIGAS has requested owners or operators of all airstrips intended for use by the Islander aircraft to appoint a Controller or Deputy Controller and will be assisting with training in their duties.
- 4.7 All airstrips intended for Islander operations are now required to be marked as appropriate and in accordance with the requirements of ANO(OT)1977, using approved materials.
- 4.8 The Falkland Islands Government has accepted the recommendation to invite the UK Civil Aviation Authority to send a Flight Operations Inspector on an advisory inspection of FIGAS at regular intervals and is currently investigating the timing and arrangements for the first of these visits.

3. In addition action has been taken on a number of other matters which, although not specifically mentioned in section 4 of your draft Report, are touched upon elsewhere in the Report or were drawn to our attention during your visit to the Colony. These include the following:-

- 1) All airstrips intended for Islander operations will now be required to have some form of wind-speed and direction indicator.
- 2) Efforts are being made to introduce compatible ground-to-air radio communications equipment wherever possible at Islander airstrips.
- 3) A valid Certificate of Airworthiness was issued before it was allowed to fly on completion of the accident damage repairs.
- 4) The appropriate form of authority required under ANO(OT) 1977 for the aircraft engineers to sign certificates of maintenance has been issued and gazetted.

/4.

Mr D A Cooper



5 September 1980

-3-

4. I trust the foregoing is of interest and assistance and I would like to take this opportunity of thanking you on behalf of the Falkland Islands Government for your much valued help in this matter.

Yours faithfully,

A handwritten signature in cursive script, reading 'F. E. Baker', written over a horizontal line.

F E Baker

CHIEF SECRETARY

AIR/7/7

CSO

CS

UNCLASSIFIED

MODEV

IMMEDIATE

ODA

For Rosser LAD ISLANDER AIRCRAFT FLIGHT SAFETY

As requested by Capt Knowles CAA ref our telephone conversation of 17 Sept action so far on Governor's minute of 18 March on Cooper's Flight Safety Report as follows (numbering as in minute):

2) Action taken as suggested on all points except last (Ayers was so appointed but carried out no training duties before departure).

3) All main strips have now been surveyed and drawings are being produced. Strip owners/operators have been requested to provide markers and wind socks or other suitable indicator as suggested. Strips likely to have most frequent use now have fire fighting equipment and are in process of providing basic crash equipment and personnel training is proceeding. Further equipment for other strips will be provided in due course. Owners/Operators have been asked to appoint Controllers and Deputies and Aviation Dept will assist with training. Improvement air/ground communications is still being researched. Strips will be licensed under provisions of ANO(OT) before use by Islander. Some applications have already been received and certificates are ready for signature but we consider it essential that strips should be inspected again by experienced Islander pilot before any landings permitted.

4) Certificate of Test checks must await appointment of qualified Captain but operations and training manuals have been produced. Loading will be carried out in accordance with ANO(OT)

5) Operations manual completed. Appropriate load sheets have been produced and will be used as required by ANO(OT).

6) These points are in hand.

2. We feel we have made good progress with the Flight Safety Report recommendations and are confident that our Islander operation can be got under way on a safe and efficient basis as soon as a suitably qualified and experienced Captain is available.

HUNT




Government House
PORT STANLEY
Falkland Islands
30 September 1980

D A Cooper Esq
Inspector of Accidents
Department of Trade
Accidents Investigation Branch
Kingsgate House
66-74 Victoria Street
London SW1

Dear Don,

1. Many thanks for your letter of 29 August, and sorry for the delay in replying, but I have been on tour.
2. I hope that by now you will have received answers from Mr Anderson and from the Falkland Islands Government, and that your accident report is now on its way. The sooner we can publish it here the better for all concerned, including particularly Eddie Anderson.
3. With Ayers' sudden resignation, we have found ourselves in a quandary about the Certificates of Test that you recommended we should introduce before a pilot could fly the Islander as pilot-in-command. As training captain, Ayers refused to check out Anderson or White before he left. We had hoped that the difficulty would be resolved when Andy Alsop joined us, but sadly ODA and Alsop could not come to terms and he withdrew. It now looks as though we might be getting a third pilot who has less hours on the Islander than Anderson. Since Ayers

/left,



left, Anderson has been air-testing the Islander once a week to keep it serviceable. On my instructions he has not carried passengers or attempted to land at any of the airstrips. He has now clocked up over 50 hours on the Islander, and could now carry passengers under our insurance cover. We have implemented all the recommendations in your Flight Safety Report concerning improvements to airstrips and completion of Operations and Training Manuals and load sheets. The one remaining obstacle is the Certificate of Test. At the time of writing your Flight Safety Report, you rightly recommended that I should not give an exemption to the requirement for a Certificate of Test under ANO (OT) Article 20 (iv). But now that we have no experienced pilot to carry out the test, I see no alternative but to make an exemption order for Anderson. Before doing so, however, I should be grateful for your views.

4. I would plan to tread very cautiously. With the approach of summer, and the drying out of airstrips, I would hope that Anderson could carry out a physical check of selected airstrips during his normal Beaver flights before I would authorise him to take the Islander. I would then authorise him for mail and freight only and clear him for passengers only after several landings and take-offs from the selected airstrip. He could take the new pilot, when he comes, for local familiarisation and also in time check out our other pilot, Ian White, who has at present no type rating on the Islander. I realise that this is not a satisfactory situation, but the fact is that Eddie Anderson is now our most experienced pilot on both the Beaver and the Islander in local conditions. Even if we get an experienced Islander pilot on secondment from Aurigny

/Airlines,



Airlines, which ODA are now trying to arrange for us, Eddie Anderson will have to take him round the local airstrips. In the circumstances, who gives whom the Certificate of Test? You see the quandary that we are in.

5. One recommendation you made that we have been unable to implement is a periodic inspection visit by a member of the UK CAA Flight Operations. In the hope that such a visit might get us out of our present quandary, I wrote to ODA asking them to submit our request to the CAA. Back came the reply that the CAA were too short-staffed to be able to send anyone out here in the near future. You could not spare the time to come and help us out, could you?

6. With best wishes,

Yours ever,

R. M. Hunt

R M Hunt



Reg. P.C. B/12 on file

Air 17/17

73

13/8

Government House
PORT STANLEY
Falkland Islands

Chief Secretary

FIGAS

- /
1. You may like to see a copy of my letter to Mr Cooper about the Islander and how we might get her flying again with passengers.
 2. I discussed all this with the Acting DCA the other day and suggested that he told Mr Anderson to start inspecting airstrips with a view to taking the Islander in as soon as the weather improves. I said that, normal flying permitting, Mr Anderson could take Mr White for familiarisation. I also said that there could be no question of carrying passengers into airstrips until I had heard from Mr Cooper.

30 September 1980

R M Hunt



DEPARTMENT OF TRADE

Accidents Investigation Branch

Kingsgate House 66-74 Victoria Street London SW1E 6SJ

Telephone Direct Line 01-212 0488
Switchboard 01-212 7676

Encl. 17/

His Excellency the Governor
Government House
Stanley
Falkland Islands

Your reference

Our reference EW/B184/01

Date *5th* November 1980

Sir

I have the honour to submit the report of my investigation into the accident to Pilatus Britten-Norman Islander VP-FAY of the Falkland Government Air Service which occurred at Hill Cove Airstrip, Falkland Islands, on 12 February 1980.

I have the honour to be,

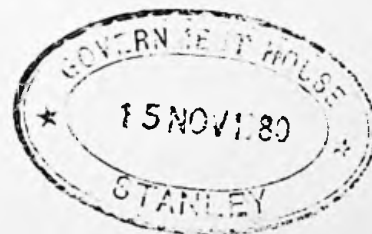
Sir,

Your Excellency's obedient servant,

D A Cooper

D A Cooper
Inspector of Accidents

Enc.



(23)
186/1



DEPARTMENT OF TRADE
Accidents Investigation Branch
Kingsgate House 66-74 Victoria Street London SW1E 6SJ
Telephone Direct Line 01-212 0488
Switchboard 01-212 7676

His Excellency the Governor
Government House
Stanley
Falkland Islands

Your reference
Our reference EW/B184/01
Date 5th November 1980

Dear Sir

(18)

Many thanks for your letter of 30 September which I partly answered by telex. I hope that the pilot from Aurigny has turned out all that was hoped and has got Anderson checked out and the Islander service under way.

2. I spoke to Ian Varney who is head of the CAA's Directorate of Operational Services Overseas about their stated inability to send a Flight Operations Inspector out to the Falklands in the near future. To my surprise he had not heard of the request or, of course, the negative answer! Anyway I emphasised that it was a recommendation of my report and said that both you and I attached great importance to it. He said he would chase it up and try and get someone sent out, and would write to you. I expect you have his letter by now.
3. I enclose 6 copies of the report. The only significant change in it is the inclusion of the missing recommendation on airstrip equipment, para 4.8, which somehow got missed when the last page of the report was re-typed shortly before I sent it to you. Captain Kerr and Mr Deake made no representation and I did not hear from Mr Anderson. PB-N made three-designed to further reduce their part in the affair-but I did not consider the report should be altered. In particular they objected to recommendation 4.10 but of course I have let it remain.
4. In accordance with normal procedure I am sending copies to PB-N, and to the CAA who are concerned in recommendations 4.9 and 4.10 as well as with Falkland Islands Civil Aviation in general.
5. I am now completing the report with the accident to Twin Otter VP-FAW of the British Antarctic Survey. Although there has been a last minute hitch I hope to get it to you before the end of the year.

With best wishes
Yours sincerely,
Dunall Cohen.

D A COOPER
Inspector of Accidents

ENCS.



Chief Secretary

FIGAS: MR COOPER'S SAFETY RECOMMENDATIONS

1. It is now over a year since Mr Cooper presented us with his safety recommendations following the accident at Hill Cove on 12 February 1980. I am concerned that some of the recommendations have still not been implemented. I should be grateful if the Acting Director of Civil Aviation would confirm that:

- (i) load sheets and technical logs for Islander operations have been introduced;
- (ii) the Islander section has been incorporated in the FIGAS Operations Manual;
- (iii) the Islander Training Manual has been introduced (I have already appointed Captain White as Training Captain);
- (iv) We have introduced the Certificate of Test required by Article 20(4) of ANO (OT) 1977;
- (v) all airstrips now in use by the Islander have been accurately surveyed and approved or licensed in accordance with Article 66 of ANO (OT) 1977;
- (vi) each licensed airstrip has a controller and deputy trained in their duties;
- (vii) all airstrips in use by the Islander have been marked in accordance with the provisions of Section VIII schedule 14 of ANO (OT) 1977, using approved materials;
- (viii) every airstrip used by the Islander has been equipped with wind indicators and fire/crash equipment to appropriate scales.



2. I am aware that one of Mr Cooper's other recommendations, namely that there should be direct ground/air radio communication between aircraft and airstrip, has not yet been carried out because of difficulties over installing a 2-metre set in the Islander. I do not understand why it has taken so long to overcome these difficulties and should be grateful if the Acting DCA would pursue this safety recommendation with the utmost despatch.

3. I am taking up with the Civil Aviation Authority in the UK Mr Cooper's recommendation that they should send a Flight Operations Inspector on an advisory inspection of FIGAS in the near future.

4. Mr Cooper's remaining recommendation related to Britten Norman including Supplement number 26 in every Islander Flight Manual. I should be grateful to know whether FIGAS have received this Supplement and whether it has been read by all pilots.

5. I should also be grateful for the Acting DCA's confirmation that all three pilots have read Mr Cooper's report of 5 November 1980 on the accident at Hill Cove.

23 March 1981

R M Hunt

Apr 7/7

W23

186/1

FAULKLAND ISLANDS
AIRCRAFT ACCIDENT REPORT

P.A. *Rd*
19/11

PILATUS PRITEN-NORMAN ISLANDER VP-FAY
REPORT ON THE ACCIDENT AT HILL COVE SETTLEMENT AIRSTRIP,
FAULKLAND ISLANDS, ON 12 FEBRUARY 1980

2.3 Aircraft documents

The introduction of load sheets and technical logs by FIGAS was recommended in a UK CAA report in 1974¹ and also in the report into the accident to DRC-2 VP-EAK in 1976². The captain's uncertainty during the investigation of the aircraft's weight and centre of gravity position at the time of the take off from Pebble Island highlights the importance of introducing load sheets now. Similarly sound operating practice requires the use of a technical log.

2.4 Operations manual and training

The intended Islander section to the FIGAS Operations manual is an important document and it should be completed as soon as possible. Similarly some document covering pilot training on the Islander should be introduced. This could be produced in the form of the training manual required by ANO(OT)1977 Article 26 or perhaps more simply as part of the Islander section of the Operations manual.

The 1974 CAA report also recommended that FIGAS introduce certificates of test as then required under the Colonial Air Navigation Orders 1961 to 1972. On 8 January 1976 the then Governor of the Falkland Islands granted FIGAS exemption from this requirement under the same order. In the United Kingdom the pilots of even the smallest commercial operators have to undergo such tests and it is suggested that FIGAS introduce these in accordance with ANO(OT) Article 20(4).

In view of the isolation of FIGAS from the rest of the aeronautical world it is suggested that a periodic inspection visit by a member of the UK CAA Flight Operations Inspectorate would be of great benefit in cross-fertilisation of ideas and in maintaining operations standards over the years. A similar recommendation was made in the report on the accident to Beaver VP-EAK.

2.5 Return flight to Stanley

Although the damage to the aircraft appeared superficial to the crew when they inspected it at Hill Cove and the powerplants appeared to be performing satisfactorily significant damage had been sustained. With hindsight it can be seen that it was imprudent for the captain to have carried passengers on the return flight to Stanley Airport, although it did not seem so to him at the time.

3 Conclusions

a Findings

- i The two pilots were properly licensed and sufficiently experienced to carry out the flight.
- ii The aircraft did not have a valid certificate of airworthiness.
- iii The aircraft had been maintained in accordance with an approved schedule but the unlicensed aircraft engineers had not been granted the authority to sign certificates of maintenance.
- iv The aircraft was serviceable when it took off from Stanley Airport and remained so until it overran the airstrip at Hill Cove.
- v The aircraft's weight and centre of gravity were within the prescribed limits although no load sheet was in use and passenger weights were estimated.

¹ Falkland Islands - Report on a study of the Operating Procedures of the Falkland Islands Government Air Service.

² DRC-2 Beaver Floatplane VP-EAK, Report on the accident at Marc Harbour, Falkland Islands, on 14 October 1976.

vi The aircraft's flight manual did not contain Supplement No 26 as this was omitted in error by Pilatus Britten-Norman Ltd when it was compiled prior to export to the Falkland Islands. Nonetheless the same information was available within FIGAS but was not known to either pilot.

vii Because the Hill Cove airstrip did not have any form of wind indicator the crew had to assess the wind from water signs. In doing so they judged it to be northerly at about 10 knots when it was probably about calm over the airstrip itself. This led the crew to elect to land downslope on runway 36 instead of upslope on runway 18.

viii The absence of any compatible ground/air radio communication equipment at Hill Cove prevented the captain from seeking information about the surface wind and the state of the airstrip.

ix The captain accepted the PI U/S's decision to aim to touch down beyond a crest 325 feet beyond the threshold. However the aircraft in fact touched down about 750 feet beyond the threshold, although it should have been apparent to the crew by the final approach stage that touchdown was going to be unduly far down an airstrip which was likely to be wet.

x The airstrip had very wet lush grass growing on a firm subsoil giving a surface which had an extremely low breaking coefficient, at least comparable with the worst case mentioned in Supplement No 26 to the Islander flight manual.

xi Normal braking technique failed to arrest the aircraft and it crossed the end of the airstrip after a ground roll of about 1000 feet, sustaining damage from impact with one of the drums which marked the end of the landing distance available. The aircraft then continued for a further 100 feet until it came to rest in a gorse hedge.

xii There were no casualties but the aircraft sustained damage to the port nacelle area and to the propeller.

xiii The captain was imprudent in not having the aircraft inspected by an aircraft engineer before flying it back to Stanley Airport on a passenger carrying flight.

b Cause

The cause of the accident was that the aircraft landed on an airstrip surface which had such a low coefficient of friction that it could not be stopped in the distance remaining after touchdown.

Contributory factors were:

i The two pilots' inexperience on this type of operation.

ii The pilots' lack of knowledge of the aircraft's wet grass landing performance data.

iii The pilots' lack of knowledge of the exceptionally slippery nature of the surface and of the wind over the airstrip.

iv A touchdown made unduly far down the airstrip.

4 Safety recommendations

It is recommended that:

- 4.1 FIGAS introduce load sheets and technical logs for Islander operations.
- 4.2 An Islander section be incorporated in the FIGAS operations manual.
- 4.3 FIGAS introduce an Islander training manual and consider appointing an Islander training captain.
- 4.4 The Falkland Islands Government should consider instructing FIGAS to introduce the certificate of test required by Article 20(4) ANO(OT)1977.
- 4.5 All Islander airstrips should be accurately surveyed and approved or licensed in accordance with Article 66 of ANO(OT)1977.
- 4.6 An airstrip controller and a deputy should be appointed for each airstrip and trained in their duties.
- 4.7 Islander airstrips should be marked in accordance with the provisions of Section VIII, Schedule 14, ANO(OT)1977, as appropriate, using approved materials.
- 4.8 Islander airstrips should be equipped with wind indicators; fire/crash equipment to appropriate scales; and, wherever possible, VHF airband radio transceiver equipment.
- 4.9 The Falkland Islands government should invite the UK CAA to send a Flight Operations Inspector on an advisory inspection of FIGAS in the near future, and at regular intervals thereafter.
- 4.10 Pilatus Britten-Norman should include Supplement No 26 in every Islander flight manual on initial issue.

D A Cooper
D A Cooper
Inspector of Accidents

5 November 1980

Owner: Falkland Islands Government

Operator: Falkland Islands Government Air Service

Aircraft Type: Pilatus Britten-Norman Islander BN-2A-27

Nationality: Falkland Islands

Registration: VP-FAY

Place of Accident: Hill Cove Settlement Airstrip
Falkland Islands
Latitude 51°30' South
Longitude 060°06' West

Date and Time : 12 February 1980 at 1235 hours Local Time
(1535 hours GMT)

All times in this report are Local Time
ie GMT - 3 hours.

Synopsis

The aircraft overran the 36 airstrip at Hill Cove when landing downslope, in calm conditions, on a very slippery surface. The report concludes that the cause of the accident was that the aircraft landed on a surface which had such a low coefficient of friction that it could not be stopped in the runway remaining from the point of touchdown. Contributory factors were the pilots' relative inexperience in Islander operations; their lack of knowledge of the aircraft's wet grass landing performance data, of the exceptionally slippery nature of the surface, and of the wind over the airstrip; and the fact that the touchdown was made unduly far down the strip.

1 Factual information

1.1 History of the flight

The aircraft took off from Stanley Airport at 11.20 hours under the command of the Chief Pilot of the Falkland Islands Government Air Service (FIGAS) who occupied the starboard pilot's seat. It was fully serviceable on take-off. The port pilot's seat was occupied by a co-pilot performing the functions of a pilot-in-command (P1 U/S) under the supervision of the captain.

The aircraft landed at Douglas Station airstrip at 11.35 hours, where the engines were shut down and re-started before it took off again at 11.46 for Pebble Island airstrip. The aircraft landed there at 12.13 where the engines were again shut down, the aircraft becoming airborne again at 12.20 hours for Hill Cove airstrip, carrying three adult and three child passengers. The crew reported that during both these flights the aircraft remained serviceable, and in particular, that the wheel brakes operated normally and effectively. The aircraft approached Hill Cove airstrip from the north-east at 800 feet AMSL. As there was no wind sock the crew estimated from water indications that the wind was northerly at about 10 knots. They decided to use runway 36 and to make a right hand circuit to it.

After a right hand base leg the aircraft was lined up at about 500 feet AMSL (450 feet above the touchdown elevation) with full flap down and an indicated airspeed of 65 to 70 knots. The 36 runway strip at Hill Cove initially slopes upwards to a point 325 feet from the threshold markers and from there slopes downwards. As both crew members had experienced an uncomfortable bump when the aircraft ran over this 'crest' on previous occasions they decided to make the touchdown just beyond it. The crew and ground witnesses were agreed that the aircraft was somewhat high on the approach. The handling pilot stated that the approach was a low power one, and that the throttles were fully closed as the aircraft crossed the runway threshold at which time the indicated airspeed was 65 knots.

The aircraft touched down well beyond the crest, on the down slope portion of the landing strip about 750 feet beyond the threshold markers, so leaving about 1005 feet to go to the end markers. The nose wheel was lowered almost immediately and the P1 U/S commenced braking. Realising that the deceleration rate was inadequate he called "Brakes" and the captain also commenced braking. Two passengers who were looking at the starboard main landing gear noticed that although the wheels rotated after touch down they soon locked and were not turning whenever they observed them during the remainder of the landing run. They, and witnesses on the ground, saw much water thrown up by the aircraft wheels.

The aircraft continued towards the end of the strip where it yawed some ten degrees to the right and ran through empty 40 gallon oil drums marking the strip end, the port landing gear leg striking one of them. The aircraft continued downhill for another 105 feet until it was stopped by a thick gorse hedge from falling over a 24 foot sheer drop onto a rocky beach. During this time the idle cut outs were operated by the P1 U/S. Once the aircraft had come to rest and the propellers had stopped turning the aircraft was evacuated without further incident.

After the aircraft had been pushed clear of the hedge the crew made a damage check. They found that the port undercarriage fairing and the ADF aerial under the fuselage were damaged. The port engine was the only one which had gone into the

hedge and no damage to it or its propeller was noticeable. It was first hand-turned, then started up and run at idle power by the captain, then a full power check was carried out and the propeller pitch control lever was operated through-out its range, including feathering. The engine was reported to have performed normally, there was no unusual vibration at all, and the P1 U/S observing the propeller behaviour from a position near the port wing tip could see no unusual movement. The captain then started the starboard engine and carried out a taxiing trial which included a brake check. The aircraft appeared to be fit to fly and so he decided to return to Stanley Airport rather than accept the delay that would ensue if maintenance engineers were flown out from Stanley to inspect the aircraft. The return flight was made with 3 child passengers and was uneventful.

1.2 Injuries to persons

None.

1.3 Damage to aircraft

There was impact damage to the port main undercarriage leg fairing and its front-spar, to the port engine nacelle box section side panels, and to the ADF sensor aerial mounted under the fuselage. There was also a compression split in one of the port engine lord bearings indicative of the engine having been displaced rearwards. The port propeller was out of track by about $\frac{1}{4}$ inch; this was discovered during a track check - it could not be detected by visual inspection alone. Because of the out of track condition the engine and propeller were both changed.

1.4 Other damage

None.

1.5 Personnel information

(a) Commander:	Male aged 57, occupied the starboard cockpit seat. Director of Civil Aviation Falkland Islands and Chief Pilot, FIGAS.
Licence:	Falkland Islands Commercial Pilot's Licence first issued on 30 September 1954, valid for life, rated in Group 1 on PBN-2A-27 Islander, and DH(C)2 Beaver Floatplane.
Medical certificate:	Renewed on 28 November 1979 and valid at the time of the accident. Endorsed: to wear spectacles and carry a second pair.
Instrument rating:	None.
Certificate of test:	None.
Flying experience:	Total hours all types - 10,548 Total hours in command - 10,258 Total hours on Islander - 58

	Total hours in last 28 days
	- Islander 17.00
	- Beaver 0.25
Previous landing at Hill Cove airstrip:	8, of which the last was on 8 February 1980.
(b) Co-pilot:	Male aged 24, occupied the port cockpit seat and was flying the aircraft as P1 under supervision.
Licence:	Falkland Islands Commercial Pilot's Licence first issued on 6 October 1979, valid for life, rated in Group 1 on the PBN-2A-27 Islander, the DB(C)2 Beaver Floatplane, and various Cessna single engine types.
Medical certificate:	Renewed on 2 February 1980, with no restrictions, and valid at the time of the accident.
Last certificate of test:	On 21 July 1979 in the United Kingdom on PBN Islander.
Instrument rating:	UK Instrument Rating awarded 20 June 1979.
Flying experience:	Total hours all types - 576 Total hours in command - 480 Total hours on Islander - 53 Total hours in last 28 days - Beaver floatplane 49.30 - Islander 8.30
Previous landings at Hill Cove airstrip:	3, of which the last was on 29 January 1980.

Pilots of FIGAS do not undergo "Certificate Test" check flights as required by the AN(OT) Order, Article 20(4). While it appears that no exemption of this requirement has been given, one was gazetted under Article 72 of the Colonial Air Navigation Orders 1961 to 1972, on 8 January 1976.

1.6 Aircraft information

1.6.1 Airworthiness

The aircraft (Constructors Serial No. 872) was manufactured in Romania in 1978 for Pilatus Britten-Norman (PBN) and exported to PBN Bembridge Airport from whence it was issued with United Kingdom Certificate of Airworthiness for Export No. E-1892-1 on 14 August 1979 prior to export to the Falkland Islands. It was issued with Falkland Islands Certificate of Registration No. 24 on 9 October 1979, being assigned the registration mark VP-FAY. However it was never issued with a Falkland Islands Certificate of Airworthiness (C of A) and so did not have a valid C of A at the time of accident.

The aircraft had been maintained in accordance with an approved schedule and had a total of about 271 flying hours at the time of the accident. The last scheduled inspection (every 100 hours) was carried at 221-20 hours. The next inspection (every 50 hours) had been due at 271-20 hours but at 262-10 hours the Director of Civil Aviation had granted a 5 hour extension to 276-20 hours.

The last Certificate of Maintenance (No. 601) was issued at 17.00 hours on 20 December 1979 when the 100 hour inspection was completed. The period of validity was for 100 hours. This certificate was signed by the two Royal Air Force Chief Technicians employed by FIGAS, in respect of the aircraft's engine, airframe, instruments and electrics; and by a radio engineer employed by the Posts and Telecommunications Department in respect of the radio equipment. None of these three persons held an aircraft maintenance engineer's licence as described in Article 9(4) of The Air Navigation (Overseas Territories) Order 1977 (ANO(OT) 1977). The radio engineer alone had been authorised by the Governor to issue Certificates of Maintenance under Article 9(4) although the Gazette Notice of 8 March 1978 doing so contains an error in that it refers to Article 92 instead of 9(4). Because of the absence of similar authorisation for the two RAF Chief Technicians the Certificate of Maintenance was invalid. No technical log was in use as required by ANO(OT) 1977 Article 9(6) and the Governor had apparently not granted an exemption to this Article, but FIGAS were in the process of preparing a format of a technical log for the Islander at the time of the accident. Notwithstanding these two discrepancies there was no evidence to suggest that the aircraft had not been properly maintained or that it was not fully airworthy when it was presented for flight on the morning of 12 February. The evidence of the two pilots is that the aircraft was fully serviceable when it took off from Stanley Airport at 11.20 hours and remained so throughout the flights to Douglas Station and Pebble Island, suffering damage only when it overran the runway on landing Hill Cove.

The aircraft was fitted with hydraulically operated disc brakes without anti-skid units. The main undercarriage wheels were fitted with Goodyear 700 x 6 Flight Custom tyres which were in good condition, the depth of the grooves being 5 mm on all 4 main wheels and 4 mm on the nosewheel.

1.6.2 Weight and balance

FIGAS were not using load sheets to control the Islander aircraft weight and balance at the time of the accident as required by ANO(OT) 1977 Article 28 (4) nor had any exemption apparently been granted, although a specimen sheet was in the course of preparation. The captain stated that a standard load pattern was used which involved filling the aircraft's seats in a certain order and that passenger weights were estimated, not established by weighing as required under paragraph 2 of Schedule 15 to ANO(OT) 1977. During the investigation the captain drew up a weight and balance schedule showing the aircraft's loading as he believed it to be on take-off from Pebble Island. It showed the take off weight as 5476 lbs and the Centre of gravity (C of G) as being slightly outside the aft limit. However, when the calculations were checked later in the investigation it was discovered that two mistakes had been made. Correcting these errors resulted in a weight of 6223 lbs and a C of G within limits. On this basis the landing weight at Hill Cove was estimated as being 6168 lbs. The maximum take-off weight is 6,600 lbs and the maximum landing weight 6300 lbs.

1.6.3 Aircraft's landing performance

The landing distance required by the Islander operating onto a dry tarmac runway is shown in a chart of Section 7 of the flight manual. Notes with this chart

state that for operations from dry grass runways with freshly cut grass and firm subsoil the distances for a dry tarmac runway should be increased by 10 per cent. No mention is made here of wet grass operations. British Civil Airworthiness Requirements (BCAR's) only require consideration to be given to hard surfaces and to dry grass runways, and this data is provided in the main body of the flight manual. However PBN provide performance data for operations from wet grass airstrips in an advisory flight manual supplement - Supplement No. 26 to Section 7, titled "Advisory Information and Performance Relating to Operations on Grass Surfaced Runways" which states in part:

"Landing Distance Required

Establish the Landing Distance required for a hard, dry surface from figure 14 of Section 5 of this manual, for the appropriate conditions; then:-

- (a) For operation on a dry grass runway, increase the hard dry surface distance by 10 per cent, or:-
- (b) For operation on a wet grass runway, increase the hard dry surface distance by 30 per cent.

Note ...

For some airfields, where the grass surface retains its hardness when wet, or if the surface becomes particularly slippery for any other reason, this factor should be increased to 50 per cent. If doubt exists, take the 50 per cent factor.

- (c) The Landing Approach Speed Variation with Aircraft Weight, given in Section 5 does not change for grass runway operation."

Supplement 26, being advisory only, is only placed in a flight manual when it is made up for an individual aircraft if the customer has asked for it. Due to an administrative error by PBN Supplement 26 was not offered to FIGAS, and so was not included in VP-FAY's flight manual when the aircraft was sold to them by PBN. However during negotiations with the Falkland Islands government in March 1978 PBN had been asked to quote the minimum safe field length for Islander operations on wet short grass and in a telex dated 7 April 1978 had given figures for such surfaces and for dry tarmac runways. The conditions stated were 6,300 lbs weight under International Standard Atmosphere (ISA) conditions at sea level and zero wind. Figures were given for level surfaces and for a 2% adverse slope. The wet grass distances quoted were 30% greater than those for the dry tarmac, and the figure given for the wet grass 2% adverse slope landing case was 1840 feet. No figure was given for the particularly slippery case requiring a 50% increment mentioned in Supplement 26, nor was there any indication in the telex that a worse case than that quoted might exist. There was also no mention of Supplement 26 itself. The telex stated that "the wet grass figures given are advisory and are not part of approved flight manual data. These will therefore be subject to agreement with local operating airworthiness authority".

1.7 Meteorological information

The local forecast in operation for 12 February 1980 was as follows:

"Winds light mainly North and will become strong to gale Southerly in West Falkland by late morning or early afternoon and in East Falkland

in the afternoon. Weather occasional showers with some sunny periods especially in North in the afternoon."

Information from a meteorological aftercast, the aircraft's crew, its passengers, and witnesses on the airstrip was used to compile a picture of the weather at the time of the accident. This was as follows:

Surface wind. This was estimated as northerly about 10 knots by the crew from the appearance of the sea at Hill Cove. However witnesses on the ground reported the wind as calm and the crew accepted that on the airstrip itself this may well have been so.

Cloud. There was no low cloud.

Visibility. 25 Kilometres.

Weather. Although there was no precipitation at the time of the landing there was shower activity in the area and there had been intermittent showers at Hill Cove since 0800 hours. Records showed that 6.3mm of rain had fallen at Hill Cove settlement in the 24 hour period ending 0900 hours local on 12 February.

Temperature. 10°C.

Humidity. Nearly 100% during the period 0900 hours to 1200 hours, resulting in little or no evaporation of surface water during that period.

1.8 Aids to navigation

Not applicable.

1.9 Communications

No facility for ground/air VHF radio communications existed at the Hill Cove airstrip although FICAS Information Sheet No. 2 issued in July 1978 had expressed the hope that settlement farms with airstrips approved for Islander operations would equip themselves with Airband VHF Transceivers.

At the time of the accident any communication between Hill Cove and the Islander would have had to be by HF radio-telephony (RTF) link between the farm manager's house and Stanley RTF Station, by telephone to Stanley Air Traffic Control, and then by VHF or HF RTF to the aircraft. No messages were passed in either direction by this means before the accident.

1.10 Aerodrome and ground facilities

The airstrip at Hill Cove is 180/360 degrees magnetic and lies at a mean height of 50 feet on ground which slopes down in a northerly direction to the sea. The width of the field was about 270 feet and the landing distance available was 1755 feet, each end of this being marked by a line of empty 40 gallon fuel drums lying on their sides lengthwise across the ends of the strip and secured to wooden stakes pegged into the ground. There were no other runway or other markings.

The airstrip had been assessed in 1978 by an inspection team when Islander operations were being planned and trial landings had been carried out there

during the Islander work-up period. However no accurate survey had been carried out prior to the accident. After the 1978 assessment a data sheet was completed which gave the length of the airstrip as 1764 feet and the slope as being approximately 2% down to the north. A survey carried out after the accident determined that the length of the landing distance available was 1755 feet, and that on 36 the overrun was 105 feet and ended in a thick gorse hedge that grew on the edge of a vertical drop of 24 feet onto a rocky beach. The survey established that, while the overall gradient of 36 was a 1.8% down slope to the north, there were two main gradients. From the 36 threshold markers there was a 2% upward slope for 325 feet to a 'crest' and from that point there was a down slope of 2.6% to the end markers and onwards to the gorse hedge.

The airstrip lay on old established pasture with a firm subsoil. The grass growing on the strip at the time of the accident was about 6 inches high and was lush. The grass was extremely wet and water droplets which could be seen lying on the blades dripped off when the grass was disturbed. There was no water lying in pools on the surface of the ground. The aircraft's wheels had left track marks on the grass from a point measured as being about 750 feet beyond the threshold onwards to the gorse hedge. There were no ruts. There was no wind sock, fire extinguishing or crash rescue equipment at the airstrip although it is understood that such equipment was in store at Stanley waiting to be issued to selected airstrips of which Hill Cove was one.

The airstrip at Hill Cove was under the control of the settlement farm manager. Before each aircraft movement it was his practice to drive over the airstrip in a Landrover to inspect its condition and to see that it was clear of obstacles. The manager had received no training in these duties although he had had discussions with FIGAS representatives and had received FIGAS Information Sheets 1 and 2 dealing with landing strips. However he was unaware of the large difference that very wet grass could make to an aircraft's landing run and so when he found the grass on the airstrip very wet he did not realise the possible danger and made no attempt to get a warning message passed to FIGAS or to the pilot.

1.11 Flight recorders

None carried.

1.12 Wreckage and impact information

The aircraft struck one of nine oil drums, which delineated the upwind end of the landing distance available, with its port undercarriage leg. This made a large dent in the drum - which flew high into the air - and caused damage to the leg and the port nacelle area. After over running the airstrip the aircraft continued downhill for a further 105 feet until it was brought to rest by a gorse hedge on the edge of a 24 feet sheer drop onto a rocky beach.

It was not possible to calibrate the aircraft's airspeed indicator system, but the airspeed indicator instrument was removed and calibrated in the flight workshop of HMS Endurance. In the range of 50 to 70 knots the instrument was found to read 1 knot below the true figure.

1.13 Medical and pathological information

None.

1.14 Fire

There was no fire.

1.15 Survival aspects

None.

1.16 Test and research

None.

2 Analysis

2.1 Cause of the accident

Early in the investigation it became apparent that the immediate cause of the accident was that the aircraft had landed on a surface so slippery that it could not be stopped within the 1005 feet of airstrip remaining from the point of touch down. The investigation therefore centred on establishing the sequence of events which led up to the accident, and also the surrounding circumstances of the flight.

The evidence of the aircraft's behaviour during the landing run and of the condition of the airstrip surface together indicate that the airstrip surface was extremely slippery and that this was because there was a very wet grass layer on a firm subsoil. Such a surface can give very low braking coefficients, possibly of the order of 0.1 μ . While it was not possible to establish exactly what value of braking coefficient pertained on this occasion it is safe to say that it would fall into the worst category of surface described in Supplement No. 26 to the flight manual, requiring a 50% factor.

Because of an administrative error by FBN, Supplement No. 26 was not included in VP-FAY's flight manual when it was exported to the Falkland Islands, as it should have been. Information on the variations in performance when operating off wet grass instead of dry tarmac is so important (to all aircraft, not only the Islander) that Supplement No. 26 should be included in each Islander flight manual when it is initially compiled regardless of whether the purchaser asks for it or not. This is because any Islander could be operated into a wet grass airstrip at various times in its life whether or not this was envisaged when it left the factory. Such a procedure would also be administratively simpler and less likely to fall down as it did on this occasion.

The misassessment of the wind over the airstrip by the crew was the result of there being no wind sock or other wind indicator on the airstrip. Once the crew had decided that there was a headwind of 10 knots the decision to land on 36 followed. Although the airstrip had not been surveyed it had been assessed before it was approved for use and both pilots were familiar with it. The differences in slope and length between those measured in the post-accident survey and the planning assessment were small and did not contribute to the accident.

The actual landing distance available was 1755 feet and the airstrip data sheet showed a length of 1764 feet. These figures compare with scheduled landing distances required, in the calm conditions which actually pertained, of 1807 feet for wet grass (30% factor) and 2085 feet for particularly slippery wet grass (50% factor). In a 10 knot headwind, as estimated by the crew before the landing, these figures would have been 1599 feet and 1849 feet. It is impossible to be

certain what the Captain's decision on a landing at Hill Cove might have been if he had been aware of the Supplement No. 26 data and had used it either on the ground in planning or in the air before landing, because of his lack of accurate knowledge of the wind and of the state of the airstrip surface. However even if he had assumed a 10 knot headwind and wet grass (30% factor) he would have realised that a late touchdown could not be accepted.

Thus the several factors of the crew's relative inexperience on type, their lack of knowledge of the information contained in Supplement 26, the lack of a wind indicator on the airstrip, the lack of radio communication with the strip, the farm manager's lack of knowledge of the significance of the very wet grass - which state he might have been able to have relayed to the crew earlier in the day, and the fact that neither crew member had experienced such extremely slippery conditions in the Islander before, all combined to result in a landing being made under conditions in which the landing distance required by the aircraft exceeded that available. The situation was made worse by the fact that the aircraft crossed the threshold 7 knots faster than the recommended speed of 58 knots and touched down about 750 feet beyond the threshold, thus cutting significantly into the safety margins built into the landing distance required data. Although the aircraft would have been able to stop within the strip length remaining from the touch down point if the grass had been dry, there was no chance of stopping on the very slippery surface which existed. It was not possible to establish whether it could have been stopped within the airstrip if the touch down had been made close to the threshold. Regardless of the crew's lack of knowledge of the contents of Supplement No. 26 two further points can be made. Firstly, the Captain as DCA and Chief Pilot should have been aware of the data given in the telex of 7 April 1978, and thus that the 36 strip at Hill Cove was at best marginal in light winds when wet. Secondly, both pilots should have realised by the final stages of the approach, that the touch down point was going to be unacceptably far down a strip which they could reasonably assume to be wet, and so should have carried out a missed approach.

2.2 The airstrip

The fuel drums used to mark the ends of the airstrip were too substantial for safety, as evidenced by the amount of damage the aircraft sustained when it struck one in overrunning. Frangible, lightweight, or flat markers should be used for runway markings.

The absence of edge markings along the length of the strip may have contributed to the aircraft's unduly late touchdown by increasing the difficulty the pilots had in combating the visual illusion caused by the downsloping terrain in the approach and landing areas.

When the Islander operation was planned it was envisaged by FIGAS that airstrips would be equipped with a wind sock, a VHF airband transceiver, and fire/crash equipment. The absence of the first two of these played a part in the accident and the third might well have been required. Such equipment should be provided at Hill Cove and at other airstrips as appropriate.

The Hill Cove farm manager who was in charge of the airstrip had received no training in his duties and was unaware of the significance of the very wet grass. It would be prudent for a controller and a deputy to be formally appointed for each airstrip and for them to be given appropriate local training in their duties. These duties should include the assessment of the condition of the airstrip surface and passing a timely warning if it is in any way unsatisfactory.





