

CHECK FLIGHT CERTIFICATE



PBN BN-2T TURBINE ISLANDER

CFS 227 issue 1

Date:	Crew:	Observer:	Registration:
-------	-------	-----------	---------------

Performance	Climb #1	Climb #2	
Average Weight			
Average Altitude			ft
Average Temp.			°C
Speed			KIAS
Achieved Rate			fpm
Scheduled Rate			fpm
Margin			fpm
Permitted Margin	-50	-50	fpm

Airfield:
Start Weight Kg/Lbs*:
Takeoff cg:
Performance: SATIS/UNSATIS/NOT APPLICABLE* <i>(delete as applicable)*</i>

Defects

No.	Defect	-/R/FT	Action?

(use a continuation sheet as necessary)

Conclusions/Comments

--

I CERTIFY that I have tested the above aircraft and have detailed the deficiencies and unsatisfactory features above. Those items annotated R or FT must be dealt with as shown in the notes on the reverse side.

Name:	Signed:	Date:	Licence No.:
For CAA Use only	Report Logged by:	Date:	Report No.:

NOTES

General

Only CAA personnel or pilots specifically briefed to carry out CAA check flights may conduct the test.

General notes on test conduct can be found in the CAA Check Flight Handbook.

This sheet replaces any check flight certificate given in the schedule.

Registration: If the aircraft is not on the UK register, add the manufacturer's serial number and expected UK registration (if known).

Crew: Captain, Co-pilot, Flight Engineer (where applicable).

Airfield: Departure airfield.

Start Weight: Actual all up weight at first engine start. Also delete Kg or Lbs as appropriate.

Takeoff cg: Actual cg at lift-off, preferably as a % of the Mean Aerodynamic Chord.

Performance

A full description of climb analysis is given in the CAA Check Flight Handbook.

Climb#1/Climb#2: Enter in these columns data from the first and second climbs.

Average Weight: The aircraft all up weight at the midpoint of the measured climb.

Average Altitude: The altitude at which the line drawn to average the measured points passes through at the mid time.

Average Temp: The temperature at which the line drawn to average the measured points passes through at the mid time.

Speed: The target climb speed (Indicated Airspeed.)

Achieved Rate: The climb rate as given by the slope of the line drawn to average the measured altitude points in feet per minute.

Scheduled Rate: The expected gross rate of climb read from the appropriate graph in the Flight Manual with any adjustments for configuration differences. For large aircraft, the basic gross data are normally to be found in a separate supplement labelled 'Additional Flight Test Data'.

Margin: The difference between the Scheduled and Achieved rates of climb (negative if achieved is lower than scheduled).

Defects

Enter all defects from the flight. All defects must also be entered in the Technical Log. Procedural items entered in the Technical Log (such as re-stowing oxygen masks) need not be entered here. Items affecting flight safety which were known before the flight, whether or not they were deferred should be entered. In the latter case, the defect should be annotated accordingly after the details.

No.: The first column is to allow the items to be numbered.

Defect: Enter details of the defect.

-/R/FT: Classify each defect according to its impact on safety, regardless of whether it can be deferred according to the MEL. Any deferrals should be dealt with in the normal way in the Technical Log. Items requiring rectification (or deferral under the MEL) before further flight for hire or reward or before the issue of the CofA should be marked 'R'. Additionally, items that require re-checking in-flight following rectification (such as inadequate climb performance) should be marked 'FT'. Items requiring both should be marked 'R/FT'.

Action?: This column should be left blank unless further information is required from the engineers or the item is considered to be of sufficient import that CAA action is considered necessary, then the person/department/agency from whom further action is required should be noted in this column. Annotate accordingly if an MOR or similar report is to be raised.

Conclusions/Comments

Any conclusions, notes or comments useful for tracking defects may be entered.

Name: Only the pilot who carried out the test may sign this sheet.

CAA Check Flight Schedules

All CAA Check Flight Schedules (CFSs) are prepared based on a design standard which, before September 2003, was the UK Type Certificate. Following the creation of EASA there may be different design standards in service within the European Union (EU) - this may include modifications approved in any EU country.

It is the responsibility of the flight crew to ensure that the exercises and limitations in the CFS are correct for the aircraft under test.

The prime source of information will be the aircraft flight manual and in the event of conflict the flight manual should be taken as overriding.

CAA policy is that pilots who conduct check flights on behalf of the Authority must be acceptable to the Authority, must have been briefed on techniques and safety considerations before carrying out the tests in these schedules and must have carried out a check flight within the last 4 years.

The CAA does not accept responsibility for the use of a CAA CFS on a test flight not directly under their control.

CHECK FLIGHT SCHEDULE



PBN BN-2T TURBINE ISLANDER

CFS 227, Issue 1

Registration:	
Flight Date:	

1 INTRODUCTION

This schedule is applicable only to PBN BN-2T Turbine Islander. It is based on the assumption that every day operation of the aircraft serves as a continuous check on the functioning of all normal services. On this check flight, however, the crew are expected generally to monitor the behaviour of all equipment and report any unserviceable items. In addition to completing all the tests in this schedule, any characteristics which are considered to be unsafe or undesirable must be recorded.

The data contained in this schedule is correct at the time of issue, but might not be in agreement with subsequent Pilots' Operating Handbook amendments. In case of conflict the current Pilots' Operating Handbook is overriding, and the CAA should be informed of any such conflict.

The minimum crew for this test is one pilot and should, whenever possible, be increased by one observer to record the results of the tests.

Aircraft commanders are reminded that it is illegal to carry passengers on a flight made under 'A' or 'B' Conditions and that while it is legal to carry passengers on a test flight made with a valid Certificate of Airworthiness, the practice is not recommended. If passengers are carried, they must be informed that the risk is greater than that on a normal scheduled flight.

The data contained in this schedule is correct at the time of writing, but might not be in agreement with subsequent Flight Manual amendments. In cases of conflict, the current Flight Manual is over-riding and CAA (Flight Department) should be informed.

The crew of the aircraft must be familiar with the contents of this schedule before flight and the pilot conducting the tests must be specifically approved by the CAA for airworthiness test flights on BN-2T Turbine Islander aircraft.

It is recommended that the tests are made in the sequence given. The results are to be written in ink in the spaces provided.

Aerodrome Altitude:

Ground Temperature:

QFE:

2 LOADING

The aircraft is to be loaded with full fuel and any necessary ballast to achieve the take-off weights and CG given below, depending on whether wing tip Mod NB/M/1153 is fitted:

WITH WING TIP TANKS: 6500lb (2948 kg) to 7000lb (3175 kg); 20½ to 24 inches AOD
 WITHOUT WING TIP TANKS: 6100lb (2767 kg) to 6600 lb (2944 kg); 19½ to 23 inches AOD

The weight and CG must remain within the Flight Manual limitations at all times.

Take-off weight: Kg/lb CG Position: Inches AOD

3. PRE-FLIGHT INFORMATION

Total Airframe Hours:

ENGINE:	LEFT	RIGHT
SERIAL NO.	<input type="text"/>	<input type="text"/>
HOURS RUN:	<input type="text"/>	<input type="text"/>

4. GROUND TESTS

Check all flying controls and trimmers for full travel, freedom of movement and correct functioning.

Overspeed Governor Check

With condition levers set to MAX RPM; advance the power levers until 1725 propeller RPM (N2) is indicated. Select each overspeed test button and note reduced N2 RPM. [60-100 RPM].

LEFT	RIGHT
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Release test buttons and confirm the RPM returns to 1725.

5. TAXYING

Check operation of parking brake (including Lock and Release)

Check brakes (including freedom from binding and normal ability to hold aircraft at high engine power)

Check taxiing (including nose-wheel steering and differential braking)

6. TAKE-OFF

Carry out a normal take-off; flaps TO; climb initially at the take-off safety speed. Note any unusual characteristics.

7. CLIMB PERFORMANCE

Shut down Port engine; note time to feather from moving condition lever to Fuel Off Feather:

secs

Carry out a 5 minute single engined en-route climb, clear of cloud and turbulence with:

- Flaps up; 75 knots IAS
- Port engine feathered
- Starboard engine N2 2030 RPM; 830 lb ft torque
- Anti-ice off
- Altimeter set to 1013 mbar

Note at start of climb:

Fuel Contents:

--

 lbs Aircraft Weight:

--

 lbs

Record the attitude, ASI and OAT every half minute and the operative engine instrument readings after about 3 minutes.

Time (Minutes)	Altitude (Feet)	ISA (Knots)	OAT (°C)
0			
½			
1			
1½			
2			
2½			
* 3			
3½			
4			
4½			
5			

Trimmer Settings:

Rudder	<table border="1" style="width: 100%; height: 30px;"><tr><td> </td></tr></table>	
Elevator	<table border="1" style="width: 100%; height: 30px;"><tr><td> </td></tr></table>	

Weather Conditions:

--

Note at end of climb: Fuel Contents:

--

 lbs Aircraft Weight:

--

 lb

* After 3 minutes, record starboard engine readings:

N1	<table border="1" style="width: 100%; height: 30px;"><tr><td> </td></tr></table>		%
N2	<table border="1" style="width: 100%; height: 30px;"><tr><td> </td></tr></table>		
TGT	<table border="1" style="width: 100%; height: 30px;"><tr><td> </td></tr></table>		°C
OIL PRESSURE	<table border="1" style="width: 100%; height: 30px;"><tr><td> </td></tr></table>		PSI
OIL TEMPERATURE	<table border="1" style="width: 100%; height: 30px;"><tr><td> </td></tr></table>		°C
FUEL FLOW	<table border="1" style="width: 100%; height: 30px;"><tr><td> </td></tr></table>		LB/MR

Restart the port engine. Record time to 61% N1:

--

 secs

8. ENGINE FUNCTIONING

With N2 set at 2030 RPM, and with torque at 830 lb ft climb until red line TGT is reached on both engines.

Note: Height at which red line TGT is reached:

	LEFT	RIGHT
OAT °C		
NI %		
Oil Pressure PSI		
Oil Temperature °C		

At a suitable en-route climb speed, shut down Starboard engine. Note time to feather from moving condition lever to Fuel off Feather.

Secs

Restart the Starboard Engine. Record time to 61% N1.

Secs

9. CRUISE

With a typical high cruise power, trim the aircraft accurately in level flight and record the following:

Indicated Altitude: ft IAS kts OAT °C

Trimmer Settings: Rudder: Elevator:

Engine	Torque LB-FT	N1 %	N2 RPM	TGT °C	Oil Press PSI	Oil Temp °C	Fuel Flow LB/HR
Left							
Right							

Check all flying controls for break-out loads, centering, backlash, weight and response.

Note anything abnormal:

Fuel System: Confirm satisfactory fuel flow (for at least 30 seconds) for the following combinations:

ENGINE \ TANK	LEFT	RIGHT
LEFT		
RIGHT		

If Mod NB/M/1153 is fitted, confirm satisfactory fuel transfer from Wing tip tanks:

MAN:

SATIS / UNSATIS

AUTO:

SATIS / UNSATIS

10. MAXIMUM SPEED CHECK (Smooth Air Only)

From a trimmed cruise condition, increase speed to V_{NE} (196 knots IAS) and gently throttle back. Check the following:

Any Unusual Behaviour:

Control Forces & Response Over Small Angles:

Engine & Propeller Behaviour:

Throttle Alignment:

11. STALLS AND FLAP FUNCTIONING

To be performed clear of cloud, recommended starting altitude for each stall not below 5000 feet above terrain. Trim at the trim speed given at P.10. There should be a minimum of 5 knots between warning and stall.

Stall the aircraft with flaps up, max RPM, throttles at idle;

Aircraft Weight	Trim Speed	Elevator Trim	Scheduled Stall	Achieved		Behaviour
				Warning	Stall	
LB	KNOTS	-	KNOTS	KNOTS	KNOTS	

At 114 knots, time flaps up to 25°:

--

Secs

Stall the aircraft with flaps 25°, throttles at idle:

Aircraft Weight	Trim Speed	Elevator Trim	Scheduled Stall	Achieved		Behaviour
				Warning	Stall	
LB	KNOTS	-	KNOTS	KNOTS	KNOTS	

At 88 knots, time flaps 25° to 56°:

--

Secs

Stall the aircraft with flaps 56°, throttles at idle:

Aircraft Weight	Trim Speed	Elevator Trim	Scheduled Stall	Achieved		Behaviour
				Warning	Stall	
LB	KNOTS	-	KNOTS	KNOTS	KNOTS	

At 88 knots, time flaps 56° to 25°:

	Secs
--	------

At 114 knots, time flaps 25° to UP:

	Secs
--	------

12. SYSTEMS FUNCTIONING

A AUTOPILOT (if fitted)

Check for smooth engagement and dis-engagement, and general functioning in flight.
Check satisfactory ability to overpower autopilot.

B ANTI-ICING/DE-ICING EQUIPMENT (if fitted)
Check functioning of power plant anti icing.

Note: Ammeter Readings:

Check functioning of airframe de-icing. Visual check of wing boot inflation.

C ELECTRICAL SYSTEM

Check electrical equipment for satisfactory operation.

--

D INSTRUMENTS

Check all instruments for satisfactory operation.

Note: Vacuum gauge reading:

	In Hg

E HEATER

Check cockpit heating and ventilation.

--

13. LANDING

Carry out a normal full flap landing.
(Threshold speed given on P.10).
Record any unusual characteristics.

--

14. AFTER LANDING

Check placards for presence, accuracy and legibility.
Check all external and internal lighting is available.

--

STALL SPEEDS

KNOTS IAS

WEIGHT LBS	FLAPS					
	UP		T.O. (25°)		DOWN (56°)	
	TRIM	STALL	TRIM	STALL	TRIM	STALL
5000	75	46	68	42	65	40
6000	81	49	73	44	70	42
6600	85	51	76	46	72	44
7000	87	52	78	47	74	45

LANDING THRESHHOLD SPEED

WEIGHT (LBS)	6800	6600	6000	5000
SPEED (KNOTS IAS)	62	61	59	55