Flight Evaluation Schedule For GPS IFR Approval
Primary Means Enroute, Terminal and Non-Precision Approach

CIVIL AVIATION AUTHORITY OF NEW ZEALAND

Aircraft Description:

Model | ZK- | Operator

GPS Description:

Manufacturer | Model | Serial Number | TSO-C129 Class

Software Status | Firmware Status | Modification Status

Modification Details:

Modification Number | STC Number (—) | CAA Approval Number

Flight Manual Supplement:

AIR No | Supplement No (—) | Approval Date

Flight Evaluation Details:

Date of Flight Evaluation (/ /) | Location

Name of Pilot | Name of Observer

Pre-Flight Evaluation Checklist:

- ☐ Operator notified of date of flight evaluation
- ☐ Charts available
- ☐ Checklist prepared
- ☐ Pilot has GPS endorsement
- ☐ Review AFM supplement

Ground Evaluation Checklist: ✓ ✖ N/A

1. **Ensure that the GPS database is current for the planned non-precision approach(es).** *List database version:* _____ ☐

2. **Determine airfield reference points.** ☐

   *Location 1:*_____ *Position 1:* _____

   Location 2: _____ *Position 2:* _____

3. **Brief ATC on requirements.** ☐

   Note: Inform ATC that once a procedure is started any interruption may require the restart of the entire procedure.

4. **Brief the operating pilot on the flight evaluation requirements and flight profile.** ☐

   Suggested profile:
   - *Climb to altitude*
   - *Fly procedure in level flight at altitude: holding pattern, procedure entry, NPA, missed approach*
   - *360º turns at 30º bank for satellite drop-out*
   - *Fly procedure with vertical profile*

5. **Flight plan filed.** ☐

6. **GPS checks.** ☐

   - *Power up GPS*
   - *Ensure hardware, software, firmware details recorded on page 1.*
   - *Check default settings:*
     altitude alert OFF
     de-clutter screen
     set moving map to TRACK UP
     set required units of measure
   - *Load flight plan*
   - *Time:* _____
   - *Satellites:* _____
   - *Trip circuit breaker and check for appropriate warnings/flags*
   - *Check VHF interference on following frequencies for all comms:*

			Comm 1 ☐
121.150 MHz	*121.175MHz*	*121.200MHz*	*Comm 2* ☐
131.250MHz	*131.275MHz*	*131.300MHz*	

   - *Check EMC:* *Comm 3* ☐

Interference from other systems to GPS

Interference from GPS to other systems

- *Check power transfer functions*
- *Position aircraft at a location specified above and record GPS position:*

  Location: 1 / 2 *GPS position: _____*

Flight Evaluation Checklist: Comments ✓ ✖ N/A

1. **GPS operating modes.**

   Evaluate all operating modes of the GPS equipment. Particular attention should be given to mode switching and transition requirements associated with the approach mode for class A1 equipment. Refer also to Item 13.

2. **GPS interface.**

   Evaluate the interface (function) of other equipment connected to the GPS equipment.

3. **Failure modes.**

   Review various failure modes and associated annunciations such as loss of electrical power, loss of signal reception, GPS equipment failure, autopilot/flight director response to GPS flags, etc. Detail how the losses were initiated and the responses.

4. **Autopilot steering.**

   Evaluate the steering response while autopilot and/or flight director is coupled to the GPS equipment during a variety of different track and mode changes. This evaluation shall include, as applicable, transition from en route to approach transition to approach modes and vice versa. Additionally, all available display sensitivities shall be evaluated. Displace the aircraft off-track and monitor auto-pilot actions for smooth resumption of track.

	Comments	✓ ✖ N/A
5. **Displayed GPS information.** *Evaluate displayed GPS navigation parameters on interfaced cockpit instruments such as HSI, CDI, distance display, electronic flight instruments system (EFIS), moving maps, fuel management systems, etc.*		☐
6. **Switching and transfer functions.** *Assess all switching and transfer functions, including electrical bus switching, pertaining to the GPS installation. Detail the functions evaluated and the responses.*		☐
7. **Accessibility of GPS controls.** *Evaluate the accessibility of all controls pertaining to the GPS installation.*		☐
8. **Day/night visibility.** *Evaluate the visibility of all controls, displays, and annunciators relating to the GPS installation during day and night lighting conditions. No distracting cockpit glare or reflections may be introduced and all controls must be illuminated for identification and ease of use. Night lighting shall be consistent with other cockpit lighting.*		☐
9. **Crew work load.** *Evaluate crew workload when operating the GPS equipment in association with other piloting requirements.*		☐

Comments ✓ ✖ N/A

10. **GPS navigation performance.**

Demonstrate GPS navigational performance has not been adversely affected by the installation in the aircraft.

NAVAID:	*Bearing*		*Distance*	
GPS:	*Bearing*		*Distance*	

11. **Antenna blanking.**

Verify continuity of navigation data during 360 degree left and right turns at 30 degrees of bank.

12. **Flight Technical Error.**

Verify that flight technical error (FTE) can be maintained at less than 1.0 NM (enroute and approach transition) and 0.25 NM for approach modes.

13. **GPS non-precision approaches.**

For class A1 equipment, conduct a sufficient number of approaches using the navigation data base to verify the proper operation of annunciations, waypoint sequencing, and display sensitivity changes in accordance with the requirements specified in TSO-C129. This demonstration shall include procedure turns, holding patterns, and missed approaches. List the approaches conducted, whether a missed approach followed, pilot evaluation of accuracy at MAP and of missed approach procedure.

1st approach:

2nd approach:

3rd approach:

14. **End-of-flight satellite data.**

Time: _____

Satellites: _____

Flight Evaluation Report:

I *(Name)* _____ certify that ZK- meets the guidelines of FAA AC20-138 and that the GPS installation is suitable for use as a primary IFR enroute/terminal/non-precision approach* navigation aid.

Signature _____ Date / /

* Delete as applicable

CAA Use Only

GPS approved for use as a primary IFR enroute/terminal/non-precision approach* navigation aid.

CAA 2129 endorsed *(date)* / /2000

Signature: _____ Date: / /

* Delete as applicable