

Coupled Approaches in N931SJ

GI 275 Update

August 2023

This document is a guide to Approved Flight Manual (AFM) supplements for equipment installed in N931SJ. Pilots should review and understand the supplements, which are located in the Pilot's Operating Handbook.

Summary

N931SJ is equipped to fly coupled approaches using the two-axis KAP 140 autopilot, GTN 750 GPS, and GI 275 electronic flight instrument. This is accomplished using APR mode on the KAP 140 for all coupled approaches. The GI 275 drives the KAP 140 for both GPS and VLOC approaches.

This document is organized in two sections:

1. ILS Procedure
2. LPV Procedure

ILS Procedure

Load your ILS approach in the GTN 750, toggle to VOR1 using the CDI button on the GI 275, select GPSS on the GPSS/HDG toggle switch, and select APR on the KAP 140. This abbreviated procedure describes a GPS-driven intercept with no course reversal, as we often do on the ILS 23 at FDK.

Transition

Procedure.....Activate
GI 275.....GPS
ILS freq.....Confirm
GPSS/HDG.....GPSS
Autopilot.....HDG

Intercept

GI 275.....VOR1
HSI.....Set
GPSS/HDG.....GPSS
Autopilot.....APR

Landing

Autopilot.....Off
Land.....Manual

Missed Approach

Autopilot.....Off
GPS.....Unsuspend
GPSS/HDG.....GPSS
Autopilot.....HDG

For FDK ILS 23

*Via vectors or NUMBE
Fly to NUMBE using GPS
110.3 in in NAV1
Autopilot follows GPS
Autopilot in HDG mode*

*Outside FAF
Switch from GPS to VOR1
229° final approach course
Autopilot follows VOR1
Once established*

*Disengage at DA
Autopilot NA below DA*

*Disengage at DA
Waypoint sequencing to RICKE
GPS drives autopilot
Once stabilized and on-course*

LPV Procedure

The GTN 750 is equipped to fly LPV approaches (localizer performance with vertical guidance). Lateral and vertical guidance are fed from the GTN 750 to the GI 275 and then to the KAP 140 autopilot. LPV is a GPS procedure, but the KAP 140 behaves as if it is flying a standard ILS. See section 6.12 of the [GTN Pilot's Guide](#).

This example assumes enroute GPS navigation to the RNAV 14 LPV approach at GAI.

Transition

Procedure.....Activate
GTN.....TERM & GPS
Heading bug.....Set
GPSS/HDG.....GPSS
Autopilot.....HDG

After Intercept

GTN.....GPS
Heading bug.....Set
HSI.....Set
GTN.....Enable APR
Autopilot.....APR
GPSS/HDG.....GPSS

Landing

Autopilot.....Off
Land.....Manual

Missed Approach

Autopilot.....Off
GPS.....Unsuspend
GPSS/HDG.....GPSS
Autopilot.....HDG

For GAI RNAV 14

Via RUANE

Confirm TERM and GPS

186° for RUANE transition

GPS steers

Autopilot follows GPS

Confirm LPV at FAF and GPS

Use as heading reminder

136° final approach course

MSG at FAF > Enable APR Output

Autopilot tracks CDI and GS needles

GPS drives autopilot

Disengage at DA

Autopilot NA below DA

Disengage at DA

Waypoint sequencing to CUTOP

GPS drives autopilot

Once stabilized and on-course

ILS Coupled Approach Procedure

Transition

Procedure.....Activate
GI 275.....GPS
ILS freq.....Confirm
GPSS/HDG.....GPSS
Autopilot.....HDG

Intercept

GI 275.....VOR1
HSI.....Set
GPSS/HDG.....GPSS
Autopilot.....APR

Landing

Autopilot.....Off
Land.....Manual

Missed Approach

Autopilot.....Off
GPS.....Unsuspend
GPSS/HDG.....GPSS
Autopilot.....HDG

For FDK ILS 23

*Via vectors or NUMBE
Fly to NUMBE using GPS
110.3 in in NAV1
Autopilot follows GPS
Autopilot in HDG mode*

*Outside FAF
Switch from GPS to VOR1
229° final approach course
Autopilot follows VOR1
Once established*

*Disengage at DA
Autopilot NA below DA*

*Disengage at DA
Waypoint sequencing to RICKE
GPS drives autopilot
Once stabilized and on-course*

LPV Coupled Approach Procedure

Transition

Procedure.....Activate
GTN.....TERM & GPS
Heading bug.....Set
GPSS/HDG.....GPSS
Autopilot.....HDG

After Intercept

GTN.....GPS
Heading bug.....Set
HSI.....Set
GTN.....Enable APR
Autopilot.....APR
GPSS/HDG.....GPSS

Landing

Autopilot.....Off
Land.....Manual

Missed Approach

Autopilot.....Off
GPS.....Unsuspend
GPSS/HDG.....GPSS
Autopilot.....HDG

For GAI RNAV 14

Via RUANE

*Confirm TERM and GPS
186° for RUANE transition
GPS steers
Autopilot follows GPS*

*Confirm LPV at FAF and GPS
Use as heading reminder
136° final approach course
MSG at FAF > Enable APR Output
Autopilot tracks CDI and GS needles
GPS drives autopilot*

*Disengage at DA
Autopilot NA below DA*

*Disengage at DA
Waypoint sequencing to CUTOP
GPS drives autopilot
Once stabilized and on-course*