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**H38/14**

**E-mail:** publications.unit@airservicesaustralia.com **DATE: 29 MAY 14**

# **INTRODUCTION OF CATEGORY I GROUND BASED AUGMENTATION SYSTEM (GBAS) LANDING SYSTEM (GLS) AT SYDNEY (KINGSFORD SMITH) AERODROME**

## **1. INTRODUCTION**

1.1 This AIP SUP cancels and replaces SUP H35/12.

1.2 The purpose of this AIP SUP is to notify pilots and operators that Ground Based Augmentation System (GBAS) Landing System (GLS) will be commissioned at Sydney commencing 29 May 2014. The GLS provides precision approach and landing guidance currently to Category (CAT) I minima.

## **2. BACKGROUND**

2.1 The GBAS has been on test at Sydney for more than twelve months and after review of the data, CASA have issued Airservices approval to utilise the GBAS for GLS approaches to CAT I minima.

2.2 The GLS will be used in the conduct of Independent Visual Approaches (IVA) and Dependent Parallel Approaches, but cannot be used for Independent Parallel Operations in IMC.

2.3 The GLS procedures are equivalent to the existing ILS procedures currently in use. There will be some differing phraseology when using GLS procedures including the following:

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- the term GLS is equivalent to ILS; and
- the term “final approach course” is equivalent to Localiser.

2.4 GLS approaches will be available to suitably equipped operators and pilots authorised to conduct GLS approaches. A pilot should request a GLS approach on receipt of Standard Arrival Route (STAR) clearance.

## **2.5 Flight planning**

2.5.1 Pilots are required to annotate equipment Field 10a of the flight plan using the Designator “A” (GBAS Landing System).

## **2.6 GBAS avionics and operations**

2.6.1 The term “GBAS receiver” designates the GNSS avionics that meet the minimum requirements for a GBAS receiver as outlined in the relevant State specifications.

2.6.2 Similar to ILS and MLS, the GBAS receiver provides lateral and vertical guidance relative to the defined final approach course and glide path. The receiver employs a channelling scheme that selects the VDB frequency and identifies the specific FAS data block that defines the approach. Each separate procedure requires a different channel assignment. For a precision approach, the GBAS receiver only uses satellites for which corrections are available.

2.6.3 GBAS scaling and deviation displays to the pilot are equivalent to the ILS displays to reduce aircrew training requirements.

2.6.4 The term GLS is used in the charting of GBAS approaches, both for the chart title (GLS RWY NN) and the GBAS minima.

2.7 The availability of GLS approaches will be included on CATIS.

2.8 The changes to AIP are listed below.

## **3. CHANGE DESCRIPTION**

3.1 The following changes to AIP will be effective 29 May 2014.

### **GEN 1.5**

#### **2. Radio Navigation Systems**

#### **2.2 Rated Coverages**

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**d. GBAS course deviation limitation**

GLS course deviation information is not available outside 23NM from the GBAS site.

**8. Area Navigation Systems Approval and Operations****8.5.5 IFR Operations**

e. **GBAS Landing System (GLS)**. CASA may approve an operator to use GNSS GBAS as a precision approach navigation aid.

**GEN 2.2 - Definitions and Abbreviations**

**Final Approach Course:** Where the aircraft is established laterally on that part of a GLS approach procedure which commences at the specified initial approach fix and ends at the aerodrome, from which point a landing can be made, or a missed approach is initiated.

**Ground Based Augmentation System (GBAS):** An augmentation system in which the user receives augmentation information directly from a ground-based transmitter.

**Ground Based Augmentation System (GBAS) Landing System (GLS):** A system for approach and landing operations using a GBAS, as the primary navigational reference.

**Instrument Runway**

b. Precision approach runway, CAT I. An instrument runway served by a precision approach procedure and visual aids intended for operations with a decision height not lower than 60M (200FT) and either a visibility not less than 800M, or a RVR not less than 550M.

**Precision Approach Procedure:** An instrument approach procedure utilising lateral and vertical guidance provided by an ILS or GLS.

**Threshold Crossing Height (TCH):** The calculated height of the procedure nominal approach path at the threshold. For ILS or GLS, the TCH will be similar to the Reference Datum Height.

**FAS** Final approach segment

**GEN 3.4 - Communication Services****2. RADIO NAVIGATION SERVICE**

g. Global Navigation Satellite System (GNSS) including Global Positioning System (GPS);

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- h. GBAS Landing System (GLS) - (Polarisation GBAS/H);
- i. Tactical Air Navigation System (TACAN) (military locations);
- j. Automatic Dependent Surveillance - Contract (ADS-C) (FANS - 1/A); and
- k. Automatic Dependent Surveillance - Broadcast (ADS-B) (1090MHz Extended Squitter).

## **2.2 Identification**

2.2.1 Radio navigation aids serving the same location normally radiate the same identification codes. Further, at ILS/localiser installations, the normal identification is preceded by the letter "I"; and at private non-accredited NDBs, a four letter identifier is radiated, the first letter being "X".

2.2.2 A GBAS station is identified by the relevant Aerodrome's 4 letter ICAO code where the GBAS is installed (e.g. YSSY). Approaches provided from the GBAS station are identified by the Reference Path ID field in the Final Approach Segment (FAS) data blocks. The Reference Path ID is unique to the approach to be used and published on the Approach Plate for the runway. Each Reference Path ID commences with the letter "G".

## **2.8 Abnormal Operation of Radio Navigation Aids**

**2.8.2 Aids not Available for Navigation.** Sometimes a facility that is not suitable for navigation has to be operated for test purposes. To provide a warning to pilots in such cases, in addition to NOTAM or verbal advice, the station identifier will either:

- a. be suppressed; or
  - b. for ILS:
    - (1) if the localiser is out of service, the glide path will not be radiated and there will be no identifier; or
    - (2) if the glide path is out of service but radiating test signals, the localizer will not be radiated;
    - (3) if the glide path is out of service and switched off, the localiser may be radiated together with the station identification; or
  - c. for GLS:
    - (1) when required for maintenance or on failure the system will be withdrawn from service; or
    - (2) if the audible Reference Path ID is corrupt or not received the system will be withdrawn from service.
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- d. for newly installed NDBs or experimental facilities, the identifier XP will be used.

**GEN 3.4****5.12 Approach and Area Control Services**

<b>Circumstances</b>	<b>Phraseologies</b> * Denotes pilot transmission
1. Departures Instructions	a. TRACK ( <i>three digits</i> ) DEGREES [MAGNETIC] TO ( <i>or</i> ) FROM) ( <i>significant point</i> ) [UNTIL ( <i>time</i> ) ( <i>or</i> ) REACHING] ( <i>fix or significant point or level</i> )
2. Approach Instructions	a. CLEARED DME ( <i>or</i> ) GNSS, <i>or</i> GPS) ARRIVAL [SECTOR ( <i>identifying letter of the sector</i> )] b.* REQUEST [STRAIGHT-IN] ( <i>chart title</i> ) APPROACH c. CLEARED [STRAIGHT-IN] ( <i>chart title</i> ) APPROACH [FOLLOWED BY CIRCLING TO RUNWAY ( <i>number</i> )] d.* REQUEST ( <i>chart title</i> ) APPROACH VIA ( <i>last two letters of the IAWP identifier</i> ) Se. CLEARED ( <i>chart title</i> ) APPROACH VIA ( <i>last two letters of the IAWP identifiers</i> ) f. COMMENCE APPROACH AT ( <i>time</i> ) g.* REQUEST ( <i>chart title</i> ) APPROACH VIA ( <i>last two letters of the IF identifier</i> ) h. TRACK DIRECT ( <i>last two letters of the IF identifier</i> ) CLEARED ( <i>chart title</i> ) APPROACH i. TRACK DIRECT TO (IAF <i>identifier</i> ) TRACK VIA ( <i>chart title</i> ) MAINTAIN ( <i>or</i> ) DESCEND TO) ( <i>level</i> ) REPORT ESTABLISHED j.* ESTABLISHED k. CLEARED ( <i>chart title</i> ) APPROACH
RNAV (GNSS) ( <i>or</i> ) RNP APCH) approach via an IAWP	
RNAV (GNSS) ( <i>or</i> ) RNP APCH) approach via an IF	
RNAV (RNP) ( <i>or</i> ) RNP AR APCH) approach where an aircraft has been subject to vectoring <i>or</i> random tracking and is subsequently re-cleared direct to the IAF and the resulting track change at the IAF is greater than 30 degrees.	

<b>Circumstances</b>	<b>Phraseologies</b>
<p>GLS approach</p> <p><i>Note: The chart title for the procedure must be used. Except for circling approaches, the procedure suffix may be omitted when no possibility of confusion exists. The words (GNSS) or (RNP) do not need to be included in the RNAV approach request or clearance.</i></p>	<p>* Denotes pilot transmission</p> <p>I. *REQUEST GLS APPROACH RUNWAY (<i>runway identifier</i>)</p>

#### 5.14.9 Arrival at Aerodrome

<b>Circumstances</b>	<b>Phraseologies</b>
<p>8. When a Pilot Advises That an "Autoland", "Coupled" or Similar Approach is Being Made (note not applicable for GLS) and the ILS Critical Area is Not Protected.</p>	<p>* Denotes pilot transmission</p> <p>a. ILS CRITICAL AREA NOT PROTECTED</p>

#### 5.15.8 Approach Radar Services

<b>Circumstances</b>	<b>Phraseologies</b>
<p>2. Vectoring for ILS/GLS, pilot-interpreted NAVAIDs and RNAV (GNSS) (or RNP APCH) approaches via the IF</p> <p>instructions and information</p>	<p>* Denotes pilot transmission</p> <p>a. POSITION (number) MILES FROM (fix), TURN LEFT (<i>or</i> RIGHT) HEADING (<i>three digits</i>)</p> <p>b. YOU WILL INTERCEPT (<i>radio aid or track</i>) (<i>distance</i>) FROM (<i>significant point or TOUCHDOWN</i>)</p> <p>c.* REQUEST (<i>distance</i>) FINAL</p> <p>d. CLEARED FOR (<i>chart title</i>) APPROACH</p> <p>e. REPORT ESTABLISHED [ON ILS (LOCALISER) <i>or</i> (GLIDE PATH) <i>or</i> GLS (FINAL APPROACH COURSE) <i>or</i> RNAV (GNSS) (<i>chart title</i>) APPROACH]</p>

<b>Circumstances</b>	<b>Phraseologies</b> * Denotes pilot transmission
Instructions and information (cont)	f. CLOSING FROM LEFT ( <i>or</i> RIGHT) [REPORT ESTABLISHED] g. TURN LEFT ( <i>or</i> RIGHT) HEADING ( <i>three digits</i> ) [TO INTERCEPT] <i>or</i> [REPORT ESTABLISHED] h. EXPECT VECTOR ACROSS ( <i>intermediate segment [GNSS], localiser course/final approach course or aid</i> ) ( <i>reason</i> ) i. THIS TURN WILL TAKE YOU THROUGH ( <i>aid</i> ) [ <i>reason</i> ] j. TAKING YOU THROUGH ( <i>aid</i> ) [ <i>reason</i> ] k. MAINTAIN (level) UNTIL GLIDE PATH INTERCEPTION l. REPORT ESTABLISHED ON GLIDE PATH m. INTERCEPT ( <i>radio aid</i> ) [REPORT ESTABLISHED]
3. Independent and Dependent Parallel Runway Approaches    Independent Parallel Runway Approaches in IMC when an aircraft is observed to be deviating towards the NTZ	a. CLEARED FOR ( <i>chart title</i> ) APPROACH b. YOU HAVE CROSSED THE LOCALISER/FINAL APPROACH COURSE, TURN LEFT ( <i>or</i> RIGHT) IMMEDIATELY AND RETURN TO THE LOCALISER/FINAL APPROACH COURSE c. TURN LEFT [RIGHT] HEADING XXX JOIN FINAL RUNWAY [number] FROM THAT HEADING CLEARED INDEPENDENT VISUAL APPROACH  d. RADAR INDICATES YOU ARE DEVIATING LEFT ( <i>or</i> RIGHT) OF THE LOCALISER COURSE

**ENR 1.1 - General Rules and Procedures****12.8.5 Minimum Altitude Requirements.**

- b. by night:
- (1) for an IFR flight:
- maintain an altitude not less than the route segment LSALT/MSA or the appropriate step of the DME/-GPS Arrival procedure, or 500FT above the lower limit of the CTA, if this is higher; or
  - if receiving an ATS surveillance service, operate not below the last assigned altitude;
- until the aircraft is:
- within the prescribed circling area for the category of aircraft or a higher category, where the limitations of the higher category are complied with, and the aerodrome is in sight; or
  - within 5NM (7NM for a runway equipped with an ILS/GLS) of the aerodrome, aligned with the runway centreline and established not below "on slope" on the T-VASIS or PAPI; or
  - within 10NM (14NM for Runways 16L and 34L at Sydney) of the aerodrome, established not below the ILS/GLS glide path, with less than full scale azimuth deflection.
- (2) for a VFR flight:
- maintain not less than the lowest altitude permissible for VFR flight (CAR 174B) until the aircraft is within 3NM of the aerodrome and the aerodrome is in sight.

**24 Parallel Instrument Approaches****24.1 Dependent Parallel Approaches in IMC**

24.1.1 Dependent parallel approaches may be conducted to parallel runways with centre-lines separated by more than 915 M provided that:

- a. the aircraft are making straight-in approaches;
  - b. Precision approaches (ILS/GLS) are being conducted on adjacent runways;
  - c. a minimum of 1,000FT vertical or 3NM radar separation is provided between aircraft during the turn-on to parallel ILS localiser courses/GLS final approach course;
  - d. aircraft established on the same ILS localiser course/GLS final approach course are radar separated by a minimum of 3NM unless increased longitudinal separation is required
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- due to wake turbulence;
- e. successive aircraft on adjacent ILS localiser/GLS final approach courses are separated by a minimum of 2NM by radar; and
- f. the missed approach track for one approach diverges by at least 30 degrees from the missed approach track of the adjacent approach.

## **24.2 Independent Approaches in IMC**

24.2.2 Independent parallel approaches in IMC require the use of ILS. GLS cannot be used for Independent parallel approaches in IMC.

## **25.2 Independent Visual Approaches**

25.2.1 Independent visual approaches may be conducted to parallel runways with centrelines separated by at least 760M provided that:

- a. the aircraft are making straight-in approaches commencing at the outer marker or 4NM from the runway threshold;
- b. a minimum 1,000FT vertical or 3NM radar separation is maintained between aircraft until:
  - (1) one aircraft is established within the furthest Initial Approach Fix (IAF), when both aircraft are established on their respective localiser/GLS final approach course in visual conditions; or
  - (2) one aircraft is established on the localiser/GLS final approach course in visual conditions, and the other is established on a heading to intercept final inside the furthest IAF with the runway reported in sight; or
  - (3) both aircraft are established on a heading to intercept final inside the furthest IAF with the runway reported in sight; and
- c. when an aircraft is vectored to intercept the final course, the final vector permits the aircraft to intercept at an angle not greater than 30°.

25.2.2 Aircraft may be processed via a precision approach until visual, then cleared for an independent visual approach. Notification will be by the ATIS using the phrase "EXPECT ILS OR GLS APPROACH THEN INDEPENDENT VISUAL APPROACH WHEN VISUAL."

When visual, the pilot will be cleared for a visual approach and will be required to comply with the pilot responsibilities listed in sub-section 25.3.

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## **26. SEGREGATED OPERATIONS IN IMC**

26.2 The following types of approaches may be conducted in segregated parallel operations:

- a. ILS/GLS;
- b. radar; or
- c. visual.

## **28. SIMULTANEOUS OPPOSITE DIRECTION OPERATIONS**

28.2 All arriving aircraft conducting instrument or visual approaches to the arrival runway shall:

- a. intercept the final course at an angle not greater than 30°;
- b. be retained on the controller's frequency until the aircraft is established on final; and
- c. be established on final approach and transferred to tower frequency no later than 10NM from touchdown. If divergence between tracks is greater than 15°, this distance may be amended to take account of local circumstances.

*Note: In the event of LOC or GBAS failure ATC should confirm with the pilot of an aircraft on a visual approach that the runway is in sight.*

## **ENR 1.5 - Holding, Approach and Departure Procedures**

### **4.7 Landing Minima**

#### **4.7.3 Aerodromes with approved precision approach CAT I procedures**

Published precision approach CAT I DA and visibility minima may be used, except that:

- a. minimum visibility 1.5KM is required when precision approach CAT I lighting system (also known as HIAL) is not available; and
  - b. minimum visibility 1.2KM is required unless:
    - (1) the aircraft is manually flown at least to the CAT I DA using a Flight director or approved HUDLS; or the aircraft is flown to the CAT I DA with an auto pilot coupled (LOC and GP or GLS); and
    - (2) the aircraft is equipped with a serviceable failure warning system for the primary attitude and heading reference systems; and
    - (3) high intensity runway edge lighting is available.
  - c. minimum visibility 0.8KM is required if instrumented RVR information in the threshold zone is not available.
  - d. A380 operators must use CAT I DA at Darwin, Sydney,
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Brisbane, Melbourne, Alice Springs, Perth, Adelaide and Townsville only where specific calculations have been confirmed. Otherwise and for other locations, A380 operators must use the LOC MDA.

#### **4.7.6 Aerodromes with approved GLS procedures**

Subject to 4.7.3, a published GLS procedure may only be conducted by operators and pilots authorised to conduct GLS by the National Aviation Authority of the State of registration of the aircraft.

### **7. PRECISION APPROACH OPERATIONS**

#### **7.1 General**

7.1.1 Precision approach operations involve the use of either ILS or GLS facilities.

7.1.2 An ILS supports all types of precision approach operations. The ground facilities comprise localiser equipment, glide path equipment and marker beacons, usually supported by an NDB or dedicated DME.

7.1.3 A GLS currently supports precision approach operations with minima as low as CAT I, but with the future potential for supporting CAT II and III operations. A GLS consists of a GBAS ground station located on or in the vicinity of one or more aerodromes and an aircraft subsystem. The GBAS provides data and corrections for the GNSS ranging signals over a digital VHF data broadcast to the aircraft subsystem. The aircraft subsystem translates the position signal into flight guidance similar to that provided for an ILS.

#### *ILS Caution:*

1. *False courses may exist or course reversals may occur outside the sector 35° (or 20° at certain aerodromes specified in ERSA) either side of the ILS localiser course.*
2. *Back beam radiation of an ILS LOC can be received and displayed on aircraft navigation instrumentation. Pilots should be alert to this possibility at locations providing ILS/LOC approaches on reciprocal runways.*

#### **7.2 Failures:**

- a. NDB. In the event of failure of an associated NDB, aircraft must join the ILS outside the outer marker as directed by NOTAM or ATC.
  - b. Glide path. For ILS operation where the glide path fails, only the localiser procedure is available.
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- c. Markers. Where marker beacons are not available, aircraft may use the ILS if the alternate fixes nominated on the IAL chart or by NOTAM are used for altimeter checks.
- d. GBAS. If GBAS fails GLS approaches are not available.

### **7.3 Altimeter checks and flight tolerances**

7.3.1 The final approach segment contains a fix at which the glide path/ altimeter relationship should be verified. If the check indicates an unexplained discrepancy, the ILS/GLS approach should be discontinued.

Pilots must conform to the following flight tolerances:

- a. To ensure obstacle clearance, both LOC/GLS final approach course and glideslope should be maintained within half scale deflection (or equivalent on expanded scale).
- b. If, at any time during the approach after the FAP, the LOC/GLS final approach course or glideslope indicates full scale deflection a missed approach should be commenced.

### **7.5 Protection of GLS critical and sensitive areas**

7.5.1 There are no GLS critical and sensitive areas.

*Note 1: A CAT I GLS is not required to support autoland operations. Pilots are responsible for obtaining information necessary to make operational decisions to conduct a GLS autoland.*

## **ENR 1.6 - ATS Surveillance Services and Procedures**

### **3. VECTORING PROCEDURES**

3.13 When the aircraft is provided with the vector to intercept final for a pilot-interpreted approach, the pilot will be:

- a. advised of range from the aerodrome, or position reference the final approach point;
- b. informed that the vector is to intercept the approach aid;
- c. provided with a clearance for the approach, when such a clearance has been authorised; and
- d. instructed to report when established on the final approach track.

*Note 1: When ILS/GLS is used for final approach, pilots should report when established on the localiser or final approach course and not delay this report until the glide path is intercepted.*

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**AIP DAH****NAV – 4 Section 20 – Navigation Aids**

Sydney GBAS YSSY 33°57'53"S, 151°11'05"E

**ERSA FAC S****SYDNEY/(Kingsford Smith)****Radio Navigation and Landing Aids**

Sydney GBAS YSSY 33°57'53"S, 151°11'05"E

**Local Traffic Regulations**

21. GBAS available for CAT I precision approaches to all runways.
22. GBAS available for use by operators and pilots authorised to conduct GLS by the National Aviation Authority of the State of registration of the aircraft.

**4. CANCELLATION**

4.1 This AIP SUP will self cancel when changes are incorporated to the AIP.

**5. DISTRIBUTION**

5.1 By Airservices website only.

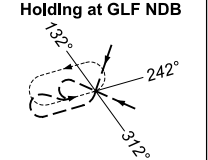
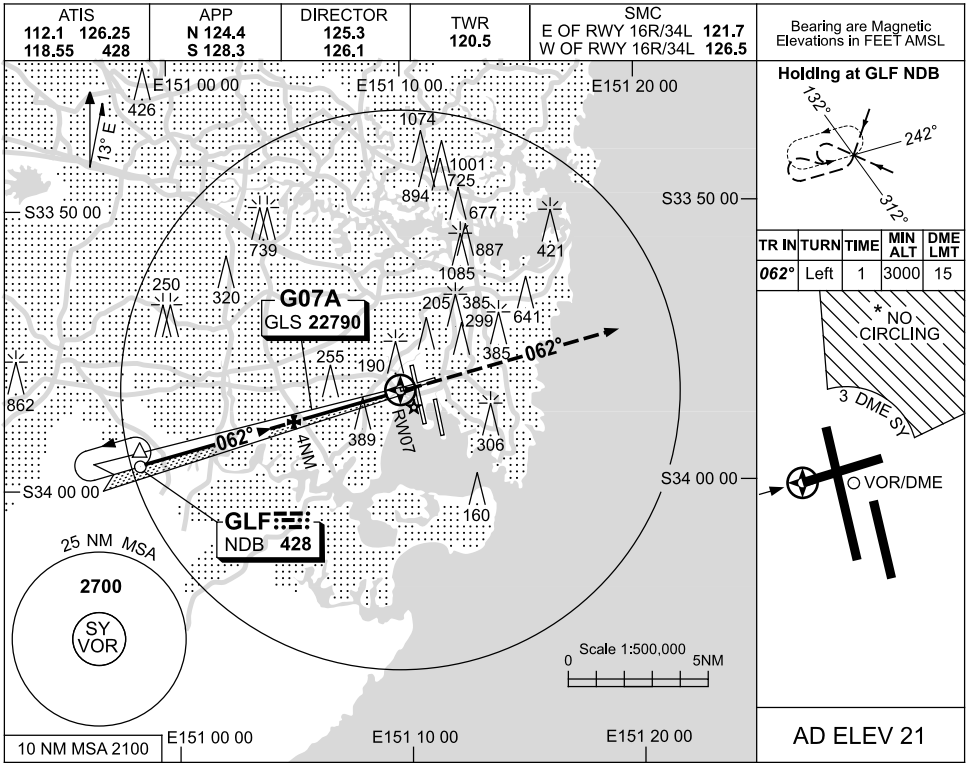
**Appendices:**

1. GLS RWY 07, Sydney (Kingsford Smith), NSW (YSSY)
  2. GLS RWY 16L, Sydney (Kingsford Smith), NSW (YSSY)
  3. GLS RWY 16R, Sydney (Kingsford Smith). NSW (YSSY)
  4. GLS RWY 25, Sydney (Kingsford Smith), NSW (YSSY)
  5. GLS RWY 34L, Sydney (Kingsford Smith), NSW (YSSY)
  6. GLS RWY 34R, Sydney (Kingsford Smith), NSW (YSSY)
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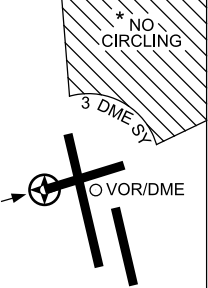
**APPENDIX 1  
TO SUP H38/14**

**USE QNH  
SYDNEY (KINGSFORD SMITH), NSW (YSSY)**

GLS RWY 07

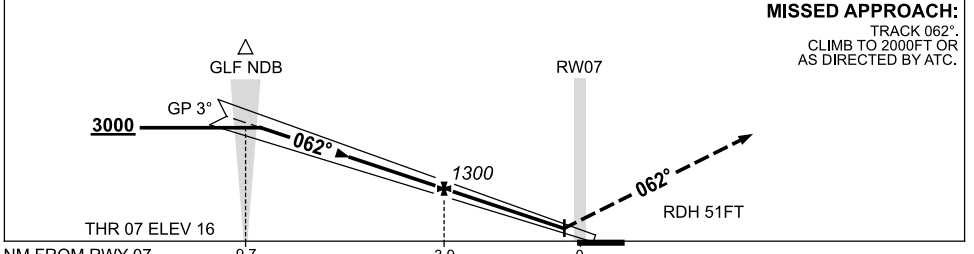


TR	IN	TURN	TIME	MIN ALT	DME LMT
062°	Left	1	3000	15	



**AD ELEV 21**

RWY07 DIST	9.2	9	8	7	6	5	3.9	3	2	1	0.6		
ALT (3° APCH PATH)	3000	2930	2610	2300	1980	1660	1300	1020	700	390	270		



**NOTES**

CATEGORY	A	B	C	D
S-I GLS	<b>270 (254) 1.5</b>			
CIRCLING *	<b>710 (689-2.4)</b>	<b>1000 (979-4.0)</b>	<b>1000 (979-5.0)</b>	
ALTERNATE	<b>(1189-4.4)</b>	<b>(1479-6.0)</b>	<b>(1479-7.0)</b>	

\* 1. NO CIRCLING BEYOND 3 DME SY EAST OF RWY 16R & NORTH OF RWY 25.

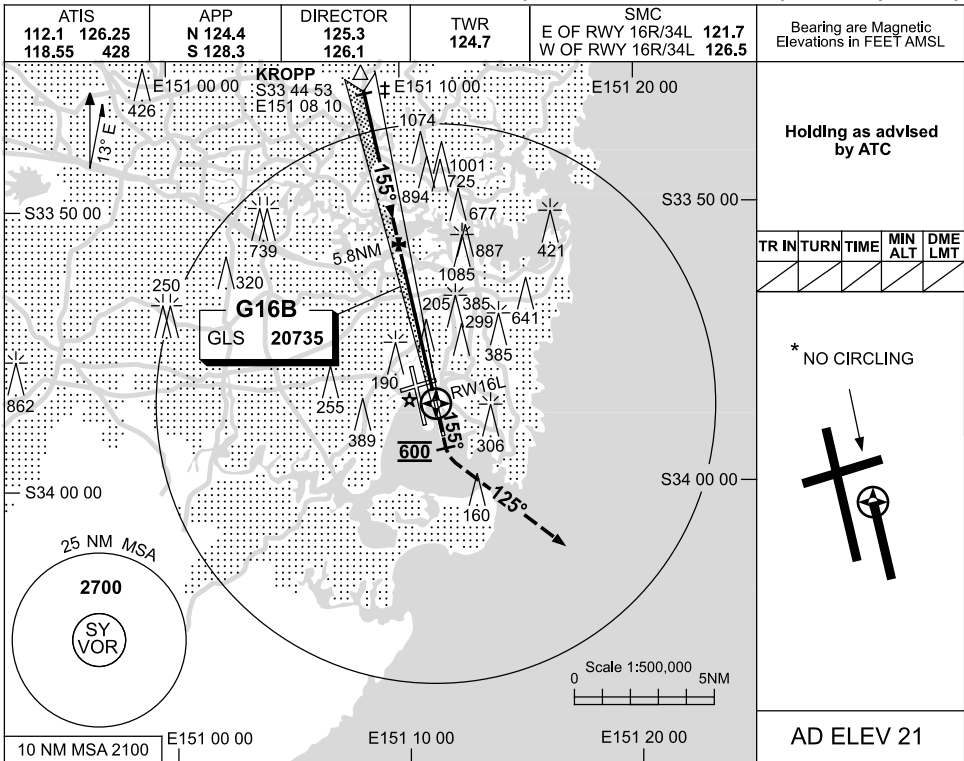
Changes: REVISED PROC, PROC NAME, MNM, DIST/ALT TABLE, Editorial.

SSYGL01-SUP

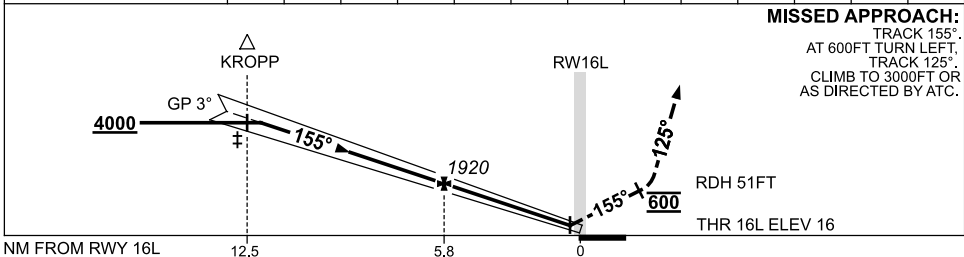
**APPENDIX 2  
TO SUP H38/14**

**USE QNH  
SYDNEY (KINGSFORD SMITH), NSW (YSSY)**

GLS RWY 16L



RWY16L DIST	12.4	11	10	9	8	7	5.8	5	4	3	2	1	0.5
ALT ( 3° APCH PATH )	4000	3570	3250	2930	2610	2300	1920	1660	1340	1020	700	390	220



**NOTES**

CATEGORY	A	B	C	D
S-I GLS		<b>220</b> (204) 0.8		550 RVR
CIRCLING	NOT AUTHORISED			
ALTERNATE	(1189-4.4)		(1479-6.0) (1479-7.0)	

‡ 1. ACFT WILL BE RADAR VECTORED TO INTERCEPT FINAL APP.

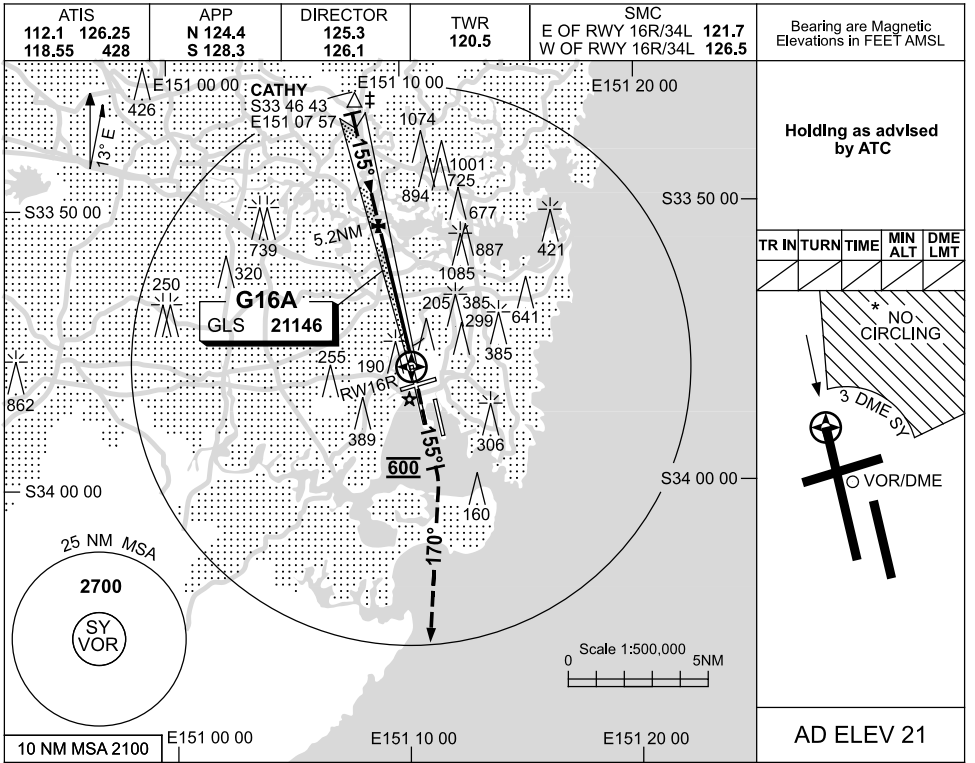
Changes: REVISED PROC, PROC NAME, 25NM MSA, MNM, DIST/ALT TABLE, Editorial. SSYGL02-SUP



**APPENDIX 3  
TO SUP H38/14**

**USE QNH  
SYDNEY (KINGSFORD SMITH), NSW (YSSY)**

GLS RWY 16R



**Holding as advised  
by ATC**

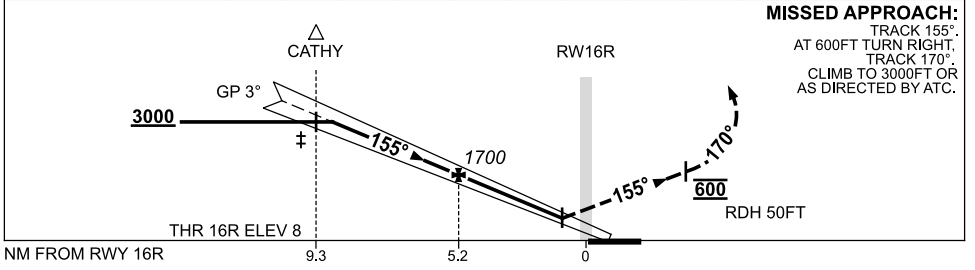
TR IN	TURN	TIME	MIN ALT	DME LMT
/	/	/	/	/

\* NO CIRCLING

O VOR/DME

**AD ELEV 21**

RWY16R DIST	9.2	9	8	7	6	5.2	4	3	2	1	0.5		
ALT (3° APCH PATH)	3000	2920	2610	2290	1970	1700	1330	1010	690	380	210		



**NOTES**

CATEGORY	A	B	C	D
S-I GLS	210 (202) 0.8			550RVR
CIRCLING *	710 (689-2.4)		1000 (979-4.0)	1000 (979-5.0)
ALTERNATE	(1189-4.4)		(1479-6.0)	(1479-7.0)

\*1. NO CIRCLING BEYOND 3 DME SY EAST OF RWY 16R & NORTH OF RWY 25.  
\*2. ACFT WILL BE RADAR VECTORED TO INTERCEPT FINAL APP.

Changes: REVISED PROC, PROC NAME, 25NM MSA, MNM, DIST/ALT SCALE, Editorial. SSYGL03-SUP

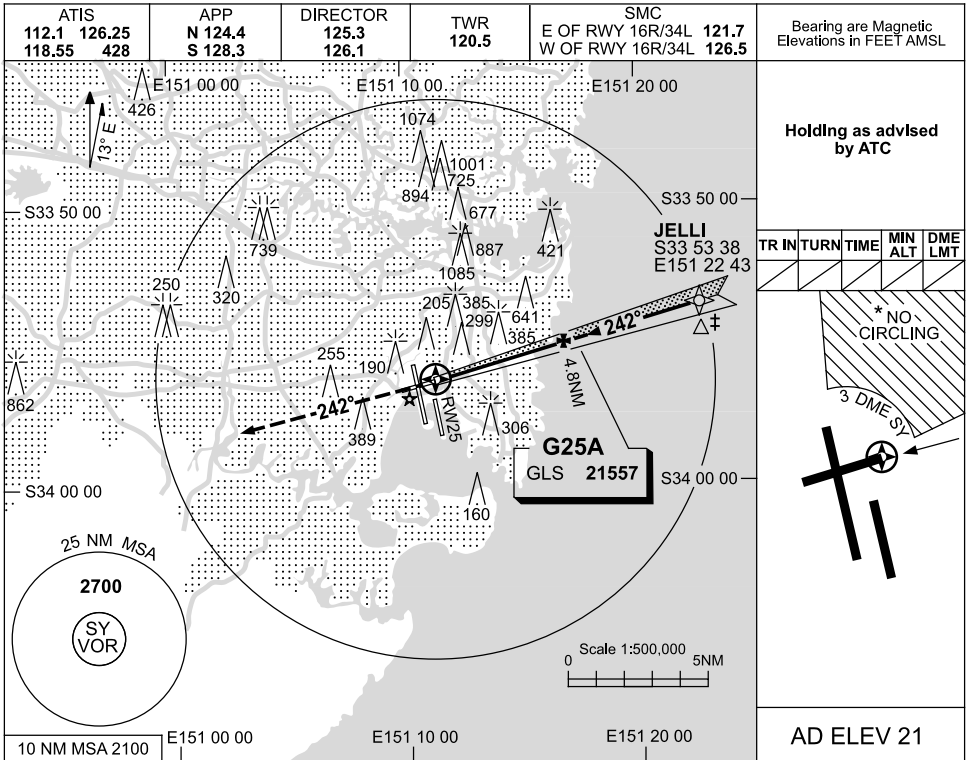




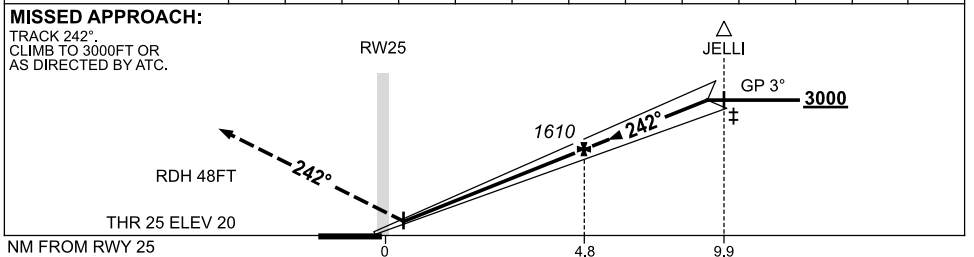
**APPENDIX 4  
TO SUP H38/14**

**USE QNH  
SYDNEY (KINGSFORD SMITH), NSW (YSSY)**

GLS RWY 25



RW25 DIST	0.6	1	2	3	4	4.8	6	7	8	9	9.2		
ALT ( 3° APCH PATH )	270	390	700	1020	1340	1610	1980	2300	2620	2930	3000		



**NOTES**

CATEGORY	A	B	C	D
S-I GLS	<b>270 (250) 1.5</b>			
CIRCLING *	<b>710 (689-2.4)</b>		<b>1000 (979-4.0)</b>	<b>1000 (979-5.0)</b>
ALTERNATE	<b>(1189-4.4)</b>		<b>(1479-6.0)</b>	<b>(1479-7.0)</b>

\* 1. NO CIRCLING BEYOND 3 DME SY EAST OF RWY 16R & NORTH OF RWY 25.  
 \* 2. ACFT WILL BE RADAR VECTORED TO INTERCEPT FINAL APP.

Changes: REVISED PROC, PROC NAME, MNM, DIST/ALT TABLE, Editorial.

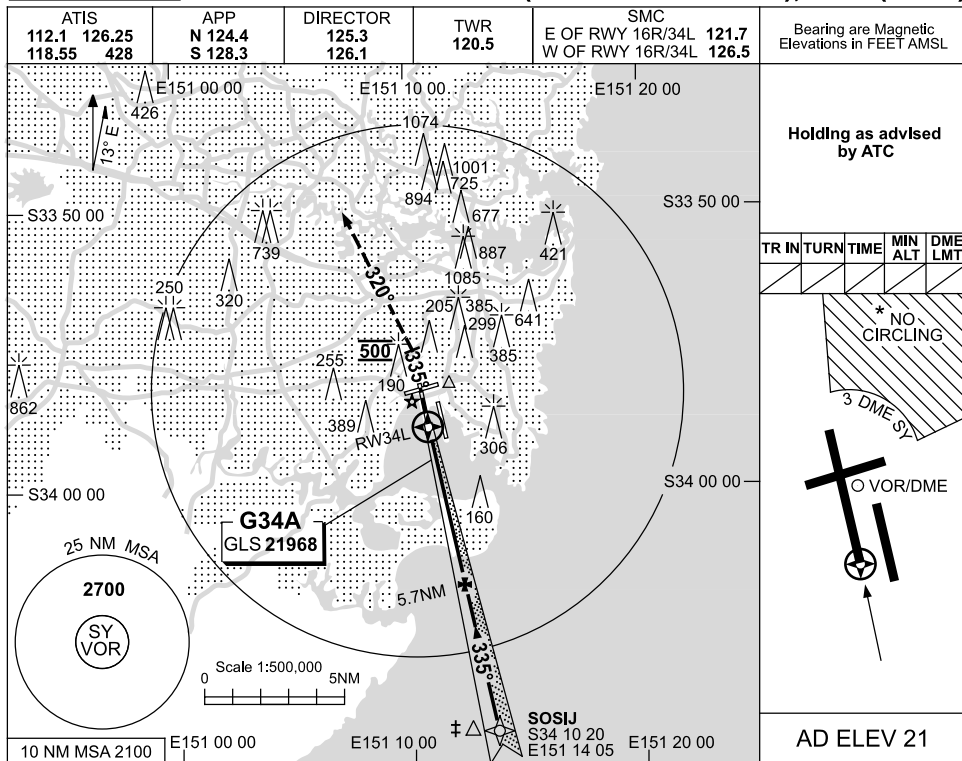
SSYGL04-SUP



**APPENDIX 5  
TO SUP H38/14**

**USE QNH  
SYDNEY (KINGSFORD SMITH), NSW (YSSY)**

GLS RWY 34L

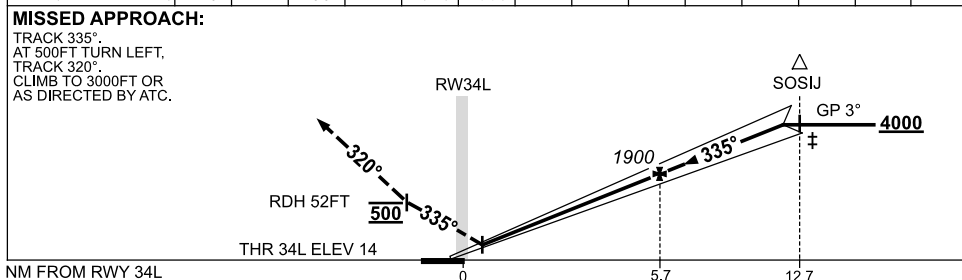


**Holding as advised by ATC**

TR IN	TURN	TIME	MIN ALT	DME LMT
* NO CIRCLING				
3 DME SY				

**AD ELEV 21**

RW34L DIST	0.5	1	2	3	4	5	5.8	7	8	9	10	11	12	12.4
ALT (3° APCH PATH)	220	380	700	1020	1340	1660	1900	2300	2610	2930	3250	3570	3890	4000



**NOTES**

CATEGORY	A	B	C	D
S-I GLS	<b>220 (206) 0.8 800 RVR</b>			
CIRCLING *	<b>710 (689-2.4)</b>	<b>1000 (979-4.0)</b>	<b>1000 (979-5.0)</b>	
ALTERNATE	<b>(1189-4.4)</b>	<b>(1479-6.0)</b>	<b>(1479-7.0)</b>	

\* 1. NO CIRCLING BEYOND 3 DME SY EAST OF RWY 16R & NORTH OF RWY 25.  
 ‡ 2. ACFT WILL BE RADAR VECTORED TO INTERCEPT FINAL APP.

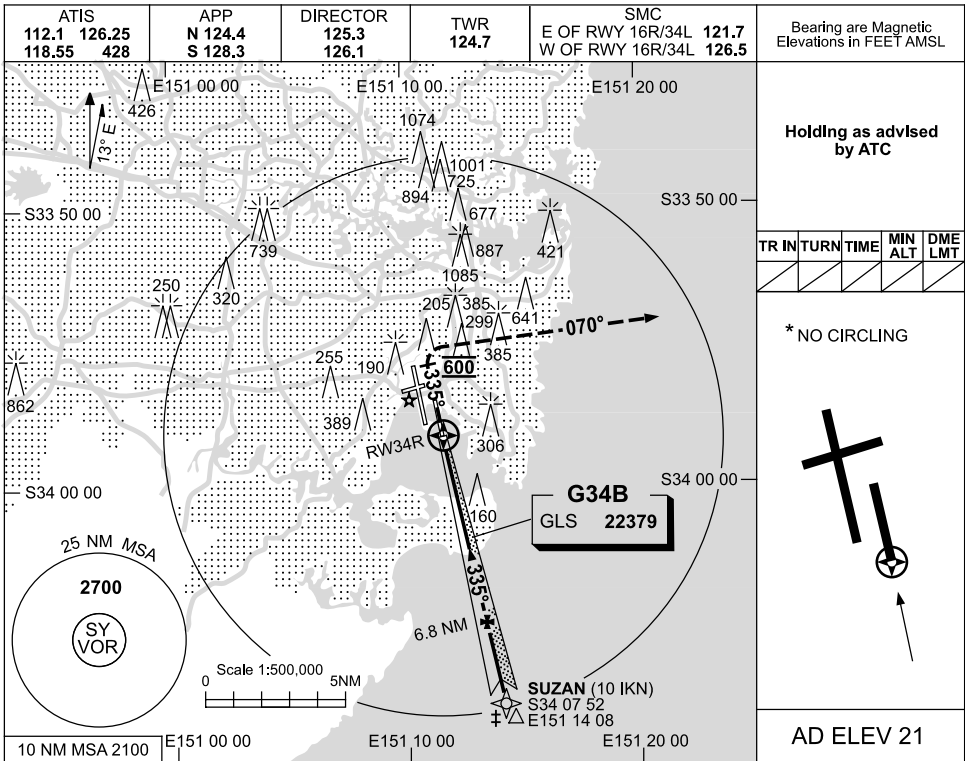
Changes: REVISED PROC, PROC NAME, 25NM MSA, MNM, DIST/ALT SCALE, Editorial.

SSYGL05-SUP

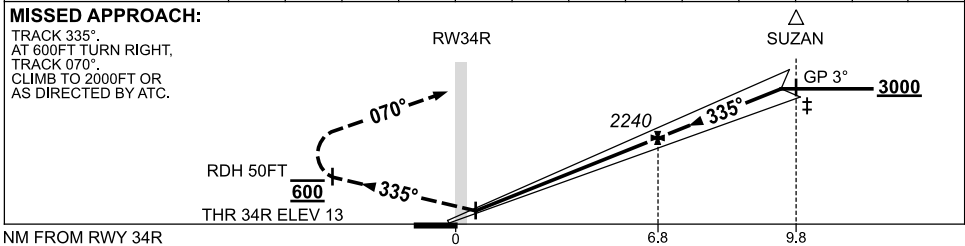
**APPENDIX 6  
TO SUP H38/14**

**USE QNH  
SYDNEY (KINGSFORD SMITH), NSW (YSSY)**

GLS RWY 34R



RW34R DIST	0.7	1	1.2	2	3	4	5	6	6.8	8	9	9.2	
ALT (3° APCH PATH)	270	380	460	700	1020	1340	1660	1970	2240	2610	2930	3000	



**NOTES**

CATEGORY	A	B	C	D
S-I GLS (2.5% MAP)	460 (447) 2.5			
S-I GLS (3.3% MAP)	270 (257) 1.5			
CIRCLING	NOT AUTHORISED			
ALTERNATE	(1189-4.4)	(1479-6.0)	(1479-7.0)	

‡ 1. ACFT WILL BE RADAR VECTORED TO INTERCEPT FINAL APP.

Changes: REVISED PROC, PROC NAME, MNM, ALT/DIST SCALE, Editorial.

SSYGL06-SUP