

EGNOS Service Provision workshop

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CAA approach to LPV

Aerodromes without an Instrument Runway
and/or Approach Control

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- Drivers for Change
- Types of Aerodromes
- The Guidance Document
- Scope
- First Steps
- The Safety Argument
- UK Successes
- Future Work

Drivers for change

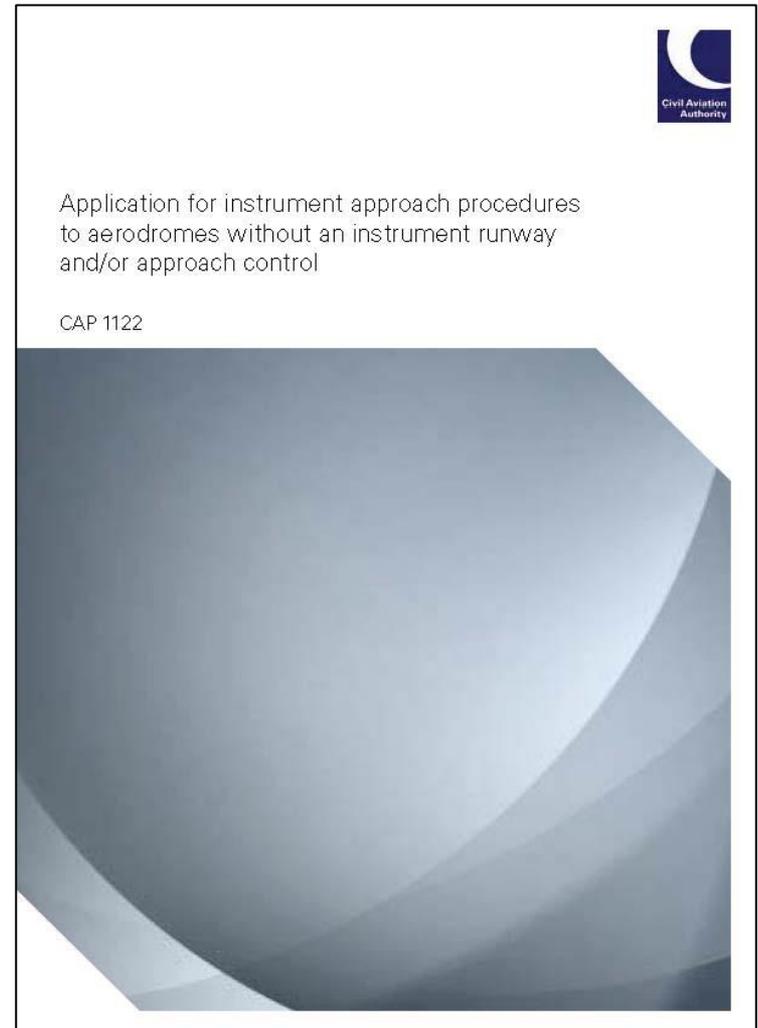


Types of UK Aerodromes



A more risk-based approach:

1. Early 'Preliminary Assessment' to reduce business risk to applicant
2. Applicant conducts a location-specific safety assessment in support of an application for an IAP based upon alternative safety mitigations
3. Single CAA point of contact for applicants
4. Aerodrome, Airspace and ATS all have to be satisfied a procedure can be introduced safely
5. Therefore, final approval has to be assembled from across SARG



Scope – Public Transport Operations

Public Transport Operations						
	Approach Control	Aerodrome Instrument	Aerodrome Visual	AFISO	No ATS	
					AGCS	SafetyCom
Licensed Aerodromes						
Instrument Runway	G	A1	A1	A1	R	N/A
Non- Instrument Runway	A1	A1	A1	A1	R	R
Unlicensed Aerodromes						
Non- Instrument Runway*	N/A	N/A	N/A	N/A	R	R

GREEN Permitted at present

AMBER 1 First stage of risk-based regulatory approach, applications considered on a case-by-case basis subject to safety analysis

RED Not normally prepared to consider applications at this stage. Some may be potential areas for future consideration, following experience gained from earlier stages

* Although it is conceivable that some unlicensed aerodromes may have runways which meet many of the required criteria, the absence of a licence and associated safeguarding activity, means that such runways can not be considered to be 'instrument runways'. They are therefore depicted only as 'non-instrument runways' in the table.

1. Early enquiry
2. Pre-application discussion
3. 1st Preliminary Review Meeting (PRM)
4. 2nd Review meeting & ACP
5. Safety Case & IAP Submission
6. Approval and AIRAC cycle

Baseline Safety Arguments

This table reflects the top level & safety goals which are met by our standards-based method for approval of IAPs. These and the underpinning safety statements form a baseline which describes the current way for aerodromes using approach control and a runway meeting CAP 168 'instrument runway' standards.

Goal 1.1 The risk of a CFIT accident is acceptably low. (CFIT)

Goal 1.2 The risk of a runway excursion accident is acceptably low. (REXC)

Goal 1.3 The risk of a runway collision accident is acceptably low. (RCOLL)

Goal 1.4 The risk of a mid-air collision accident is acceptably low. (MAC)

Goal 1.5 The risk of a loss of control accident is acceptably low (LOC)

Goal 1.6 The risk of an accident during the introduction to service of a new IAP at this aerodrome is acceptably low. (INTRO)

Goal 1.7 The risk of an accident during the through-life operation of an IAP at this aerodrome is acceptably low. (THRULIFE))

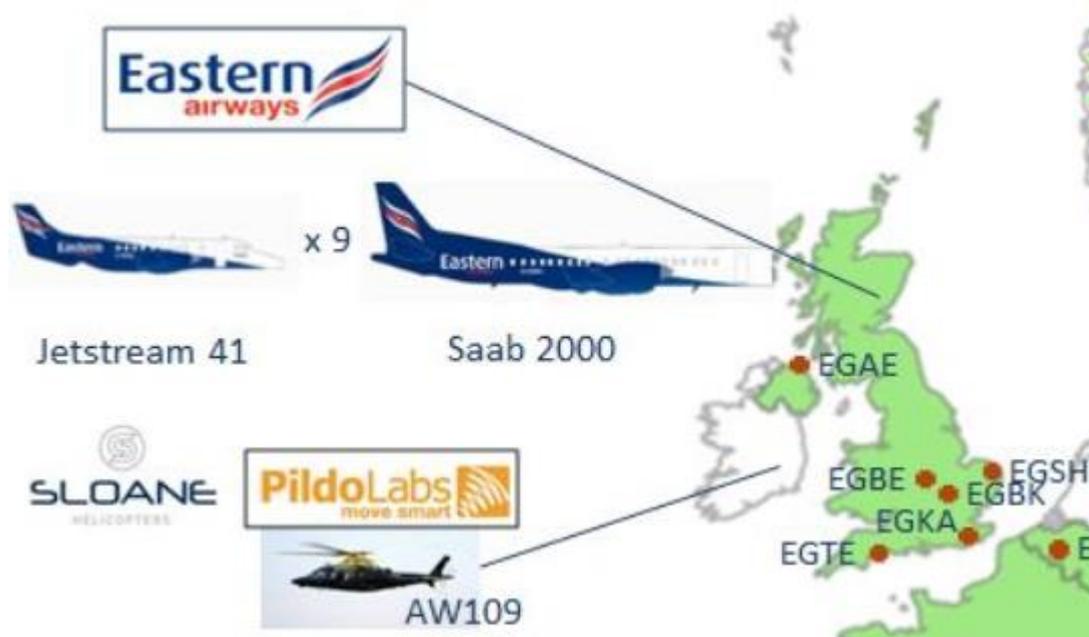
Candidate alternative safety arguments

The IAP at (aerodrome name) will be operated with an acceptable degree of safety		
Argument that the standards-based approach which requires Approach Control iaw ANO Art 172 and a runway equipped to CAP 168 'instrument runway' standards, when used in combination with other risk-reduction measures provides an acceptable degree of safety	Argument that the provision of approach control iaw ANO Art 172 and/or a runway equipped to full CAP 168 'instrument runway' standards would not be reasonably practicable in this case and that alternative solutions will be used in conjunction with other risk-reduction measures to provide an acceptable degree of safety.	
Baseline	Argument that the provision of Approach Control iaw ANO Art 172 and/or a CAP 168 standard 'instrument runway' would not be reasonably practicable in this case.	Argument that alternative solutions will be used in combination with other risk-based measures to provide an acceptable degree of safety.
	Alternative Safety Arguments	

Figure 2: Candidate alternative safety argument structure

UK success from 2014 call

Rigby Group
8 LPV IAPs
at 4 airports



Pildo
4 PinS (or straight-in) LPV

Brighton City Airport EGKA 2 LPV IAPs

LNAV, LNAV/VNAV and LPV Status

	Runway Ends LNAV	Runway Ends LNAV/VNAV	Runway Ends LPV
In Service	38	22	6
In Design	60	12	58

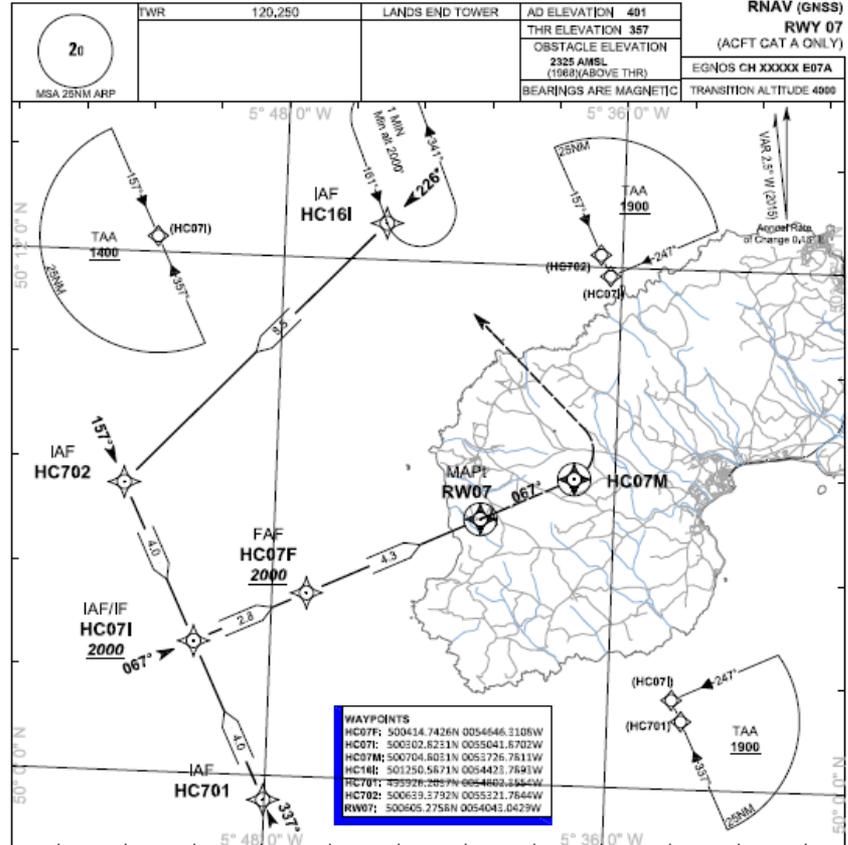
- Radar service provision outside of Controlled Airspace
 - No national coverage
 - Military not available at the weekend
 - Cost implications from civil radar units
- Separation of aircraft in Class G airspace
 - IMC conditions
 - Known environment
 - Traffic density
- Instrument traffic entering the visual circuit
 - Solo students
 - Non-radio/microlights
 - Missed approach path
- Instructions from non-ATC persons
 - Authority



Lands End new chart

INSTRUMENT APPROACH CHART - ICAO

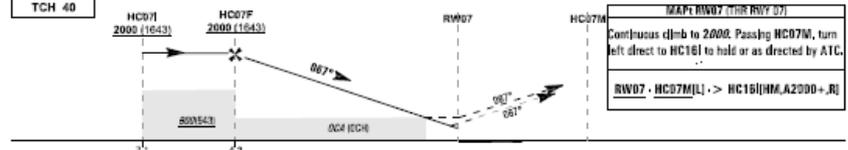
LANDS END / ST Just
RNAV (GNSS)
RWY 07
(ACFT CAT A ONLY)



WAYPOINTS
HC07F: 500434.7436N 0054646.3108W
HC07I: 500202.6231N 0055041.6702W
HC07M: 500704.8031N 0053726.7611W
HC16I: 501250.5671N 0054423.7691W
HC70I: 499926.2057N 0054802.6664W
HC702: 500659.5792N 0055321.7644W
RW07I: 500905.2758N 0054045.0429W

RECOMMENDED PROFILE APV - Vertical Path Angle 3.5° (LNAV 6.12%) 372FT/NM

NM to RW07	4	3	2	1
ALT(HGT)	1880 (1523)	1510 (1153)	1440 (783)	770 (413)



		7.1	4.3
Aircraft Category		A	
OCA (OCH)	LPV	717 (360)	
	LNAV	770 (413)	
VM(C) OCA (OCH AAL)	Total Area	1040 (683)	

Aircraft Category	A	Rate of descent	G/S KT	160	140	120	100	80
			FT/MIN	990	870	740	620	500
OCA (OCH)	LPV	717 (360)						
	LNAV	770 (413)						
VM(C) OCA (OCH AAL)	Total Area	1040 (683)						

CHANGE (X/YY): New Chart
AIP INFO DATE X Mmm YY

Some of the aerodromes currently in discussions with CAA -

Blackbushe

Carlisle

Denham

Gamston

Redhill

Sherburn in Elmet

Wycombe

Thank you

Any questions?



Civil Aviation
Authority

