

Airport Operating Standard

Engine Ground Running & Compass Swing



September 2021



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Introduction

Airport Operating Standards have been produced by Perth Airport to ensure safe operations at Perth Airport. The ***Engine Ground Running & Compass Swing*** standard applies to all aircraft operators and those involved in the ground running of aircraft engines on the airside at Perth Airport and are to be performed in conjunction with each individual organisations' procedures and requirements.

The ***Engine Ground Running & Compass Swing*** standard aims to provide a safe environment for all airside staff, passengers and aircraft and to ensure that the requirements documented in this standard are relevant and capable of practical implementation by all staff.

It also aims to identify and detail the measures adopted to minimise community exposure to aircraft noise associated with the operation of Perth Airport, and in particular noise associated with Engine Ground Running. It specifically excludes noise generated by an aircraft in flight, landing, taking off or taxiing. It also details operations within the compass swing site.

This Standard and the procedures described within may be amended from time to time by PAPL on recommendation of the Perth Airport Airfield Operations Management Committee following a meeting of the Airfield Operations Safety Management System. PAPL will endeavour to provide sufficient notification of changes to aircraft operators; however, it is the responsibility of the aircraft operator to keep informed of any amendments. Any information published via NOTAM takes precedence over the information contained in this document.

The Standard includes:

- Responsibilities
- Locations for Engine Ground Running
- Time and power settings
- Dispensations
- Compass swing site
- Safety precautions

The Standard is designed to be read in conjunction with the ***Perth Airport Operating Protocol*** and is one of the suite of documents that forms the ***Perth Airport Aerodrome Manual***.

The above documents are available via the Perth Airport Extranet at <https://perthairport.sharepoint.com/sites/Extranet> or via the Corporate page on the Perth Airport website www.perthairport.com.au/AOP.

Responsibilities

Perth Airport Pty Ltd (PAPL)

PAPL is responsible for producing this Standard and consulting with stakeholders as necessary to determine operating requirements and necessary restrictions.

PAPL (Airfield Operations) has the day-to-day responsibility for implementation of this standard including the issuing of dispensations to operators who have demonstrated operational requirements to conduct engine ground runs outside the parameters of the plan. PAPL will consult with Airservices Australia (ATC) in determining appropriate locations for engine ground running that have the potential to impact normal aircraft operations. PAPL is responsible for collating the details of all engine ground runs performed above ground idle power settings and responding to noise complaints associated with engine ground running forwarded by the Airservices Australia Noise Enquiry Service.

Aircraft Operators

Aircraft operators are responsible for complying with this standard and for notifying PAPL of the details of engine ground running operations where required under this standard.

Operators must seek approval to conduct any engine ground run above ground idle power. Aircraft operators must ensure that towing or taxi operations of aircraft on the movement areas of Perth Airport are done so in accordance with regulatory requirements and conditions contained within the Airside Vehicle Control Handbook and relevant Standard/s.

Operators must adhere to all published information in the En-Route Supplement of Australia (ERSA) and any relevant NOTAM information published while operating at Perth Airport; and any company or manufacturers operating procedures.

Airservices Australia – Air Traffic Control (ATC)

ATC will prioritise the safety of aircraft using taxiways and runways adjacent to aircraft carrying out an engine ground run. Where necessary they may limit the use of an engine ground running location, aircraft heading and/or power setting to maintain the safe operations of aircraft movements.

Airservices Australia – Aircraft Noise Enquiry Service Unit

The Aircraft Noise Enquiry Service Unit is responsible for notifying PAPL of all noise complaints received by Airservices relating to engine ground runs conducted at Perth Airport.

Locations for Engine Ground Runs

Four sites are available for ground running activities as follows:

TABLE 1

Site #	Location	Maximum Aircraft	Aircraft Heading and Power Restrictions
1	Compass Swing Site	Piston engine aircraft only	210° thru 030° tail East. All aircraft must ensure appropriate clearances are maintained with aircraft using Hotel 4.
2	Taxiway Whiskey (between Taxiway Charlie and Runway 24)	50,000kg MTOW max. B717/F100	Nil restrictions to headings.
3	Taxiway Charlie (between Charlie 9 and Charlie 11)	<ul style="list-style-type: none"> F100 and below (when Twy W site is not available); or Aircraft above F100 	<ul style="list-style-type: none"> 016° or 196° only for any power setting above idle. No restrictions to heading for idle power.
4	Runway 06/24 between Taxiway S and 24 Threshold	<ul style="list-style-type: none"> F100 and below (when Twy W site is not available); or Aircraft above F100 	Aircraft direction depends on winds.
5	Taxiway Alpha (between Alpha 9 and Alpha 11)	<ul style="list-style-type: none"> All aircraft 	<ul style="list-style-type: none"> Wide body with 4 engines limited to idle power 016° or 196° only for any power setting above idle. No restrictions to heading for idle power.

All engine ground runs above ground idle power should be performed in the locations specified above and shown on plan number FS-5640 - Perth Airport Engine Ground Running at Appendix 1.

Approval to conduct an engine ground run must be sought from the ADM prior to accessing the manoeuvring area for conducting an engine ground run.

Under special circumstances, non-standard locations may be approved by the ADM in consultation with ATC and the operator. Such approvals will be recorded by the ADM.

In selection of a location and aircraft heading, special regard shall be given to:

- ATC operational requirements.
- Protection against soil erosion.
- Protection of ground facilities.

- Occupational Health and Safety legislation.
- Impact on airport users and tenants.
- Noise abatement requirements.

For settings higher than ground idle power, any deviation from the aircraft headings or power settings shown in the table must be approved by the ADM in consultation with ATC.

Aircraft Operators must seek approval from the ADM if a proposed engine ground run cannot be conducted in accordance with the parameters of time, power, heading or location prescribed above and below.



Engine Ground Running on Aprons

Engine ground runs on aprons are restricted to ground idle power only unless otherwise approved by the ADM in consultation with ATC.

Where normal apron activities may be disrupted through approved engine ground runs, the ADM may require the aircraft operator to reduce power settings during a ground run or request the cessation of the ground run to manage affected traffic.

Operators conducting ground idle runs on privately leased aprons must ensure appropriate traffic management procedures are implemented.

Communications & Radio Frequencies

During any engine ground run and compass swing performed at Perth Airport under the conditions of this standard; contact with ATC must be maintained.

Radio frequencies (MHz) currently in use at Perth Airport are as follows:

127.4	Perth Tower Aerodrome Controller
121.7	Surface Movement Controller (West)
122.2	Surface Movement Controller (East)
123.8	Automatic Terminal Information Service (ATIS)

Engine Ground Running Communications

All operators are required to contact the ADM (9478 8424) prior to conducting ***any engine ground run above ground idle or idle runs on aprons***. The ADM will advise ATC of the request prior to the operator requesting ATC approval for tow or taxi to the nominated site to conduct an EGR.

Time and power settings

From **0530 to 2100** hours WST, there are no limitations on operating time or power settings. (Restrictions apply to locations as specified in Table 1 on page 4 - Locations for EGR).

From **2100 to 2300** hours WST, there is no time limitation at ground idle power; however, at above ground idle power each aircraft is limited to 15 minutes.

From **2300 to 0530** hours WST turbo-jet, turbo-prop and piston powered aircraft are restricted to ground idle power only with no time limits.

For the safety of other operations at the airport, additional restrictions on time and power settings may be imposed at any time by PAPL or ATC.

Dispensations

Dispensations will only be provided in significant and exceptional circumstances, where the operational requirements of the aircraft are such that significant and imminent passenger disruption will result in the event that the EGR is not conducted.

The Engine Ground Run - Dispensation Request form can be found at Appendix 2.

Compass swing site

Perth Airport has an established compass swing site available for use by operators located off taxiway Hotel 4.

Information pertaining to the establishment and maintenance of compass swing sites is published through CASA by way of Advisory Circular 139-15(0). In accordance with AC 139-15(0), a magnetometer survey of the site is regularly conducted.

Classification of Site (Class 1)

Compass swinging sites may be established as either Class 1 or Class 2. The difference between the two classes of compass swinging site is the limits of permitted maximum deviation, to be found anywhere within the site must be within the following limitations:

Class 1. The maximum permissible deviation is $\pm 0.1^\circ$.

Compass swinging sites of this accuracy are required for carrying out refined swings, such as, swinging an aircraft in which remote-reading compasses are used as magnetic heading reference systems in conjunction with Doppler type systems.

Class 2. The maximum permissible deviation is $\pm 0.25^\circ$.

Compass swinging sites of this accuracy are required for carrying out standard swings, i.e. swinging an aircraft in which the primary heading reference is provided by a remote-reading compass system, with a direct reading compass serving as the standby.

The data is calculated from the results of the survey to a distance of 40 metres from the centre of the site. Historically, survey beyond 40m from the centre reveal magnetic anomalies greater than $\pm 0.25^\circ$.

The most recent survey of the compass swing site was conducted in June 2021. The survey results are included at Appendix 3.

Operating Restrictions

Aircraft that are conducting compass swing calibrations or engine ground runs on the compass swing site must maintain appropriate clearances to aircraft operating on taxiway Hotel 4.

In the case of code D and E aircraft under tow via Hotel 4, operators must vacate the site on instruction from ATC or the ADM.

NOTE: It is the operator's responsibility to ensure they maintain appropriate clearances to operational areas such as adjacent taxiway strips and service roads.

Communications with ATC must be maintained at all times while occupying the compass swing site.

Operators conducting compass swings should also ensure personnel involved in compass calibrations maintain clearance to aircraft operating on taxiway Bravo and vehicles operating on the roadway adjacent to the 600 series bays to the west of the site.

For further information regarding EGR or Compass Swinging at Perth Airport, contact the ADM on (08) 9478 8424.

Safety precautions

- Anti-collision beacons must be switched on throughout the engine ground run.
- Aircraft maintenance organisations must ensure that all personnel, equipment and cargo is well clear of the aircraft during an engine ground run. This means that there should be sufficient distance between the aircraft and any people, vehicles, equipment and buildings so that they will not be unduly affected by jet blast or jet intake from the ground running operations.
- A nominated person must be appointed over the engine ground run to ensure the safety of the operation and all airside users in the vicinity. The engine ground run must be stopped immediately if a dangerous situation arises.
- To improve visibility for airside drivers, all ground service equipment must be moved well away from the aircraft during the operation.

Further Enquiries, Contacts & Emergencies

Further enquiries

If you have any questions in relation to this standard, please contact:

General Manager Operations
Perth Airport Pty Ltd
PO Box 6
Cloverdale, Western Australia, 6985
Phone: (618) 9478 8879
Fax: (618) 9478 8889

For proposed changes to this standard, please email document.controller@perthairport.com.au. Changes will be considered by the Ramp Safety Committee and the Local Runway Safety Team.

Important contacts

Airfield Safety & Operations Manager

Phone: 9478 8441

Airport Control Centre (ACC)

Phone: 9478 8572

Airfield Duty Manager (ADM)

Phone: 9478 8424

Mobile: 0419 195 790

Emergencies

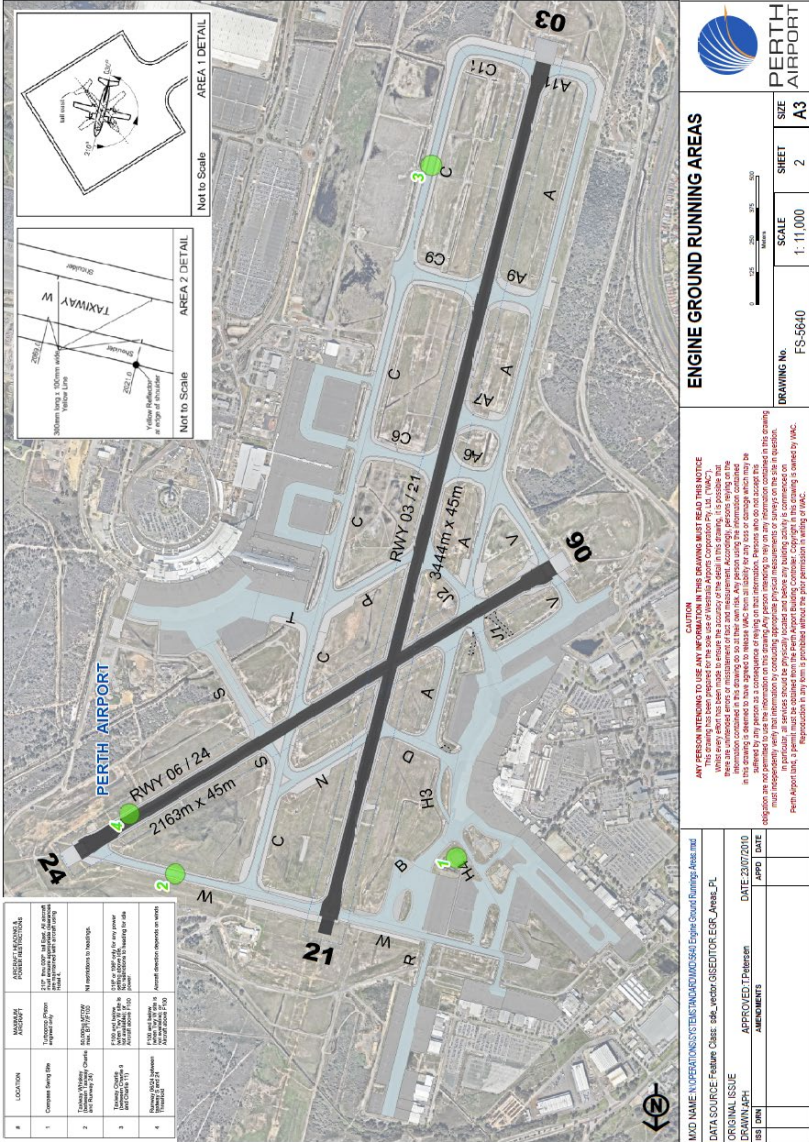
In case of emergency contact 000 (if life threatening situation) then ACC on 9478 8500.

Definitions and Acronyms

Term	Definition
Airfield Duty Manager (ADM)	Perth Airport employee responsible for airfield safety including oversight of the airfield, Airport Operations Officers (AOO) and Works Safety Officers (WSO).
Air Traffic Control (ATC)	A branch within Airservices Australia (AsA) that controls the movements of aircraft at and around a controlled aerodrome.
Civil Aviation Safety Authority (CASA)	The Commonwealth's safety regulator for civil air operations in Australia and the operation of Australian aircraft overseas.
Engine Ground Run (EGR)	The ground operation of an engine or propeller for the purpose of testing or maintenance.
Manoeuvring Area	Those parts of the airport used for the takeoff, landing and taxiing of aircraft, excluding aprons (e.g. Taxiways and runways).
Notice to Air Men (NOTAM)	Publication produced by Airservices Australia via the NOTAM Office advising changes to physical and operating standards of the aerodrome.
Tow Bar Disconnect Point (TBDP)	A marked position where an aircraft if pushed back or towed to can disconnect and commence taxi under its own power.

Appendix 1

Engine Ground Run Location Plan FS-5640



#	LOCATION	MARKER	MARKER IDENTIFICATION
1	Closest to the site	200mm Dia	200mm Dia
2	Closest to the site	200mm Dia	200mm Dia
3	Closest to the site	200mm Dia	200mm Dia
4	Closest to the site	200mm Dia	200mm Dia

ENGINE GROUND RUNNING AREAS	
DRAWING No: FS-5640	SCALE: 1:11,000
SHEET: 2	SIZE: A3
<p>ANY PERSON VIEWING THIS DRAWING MUST READ THIS NOTICE</p> <p>This drawing has been prepared for the use of Aviation Services Corporation Pty. Ltd. (AVSC). It is not to be used for any other purpose without the written consent of AVSC. AVSC does not warrant the accuracy or completeness of the information contained in this drawing. AVSC is not responsible for any loss or damage arising from the use of this drawing. AVSC is not responsible for any loss or damage arising from the use of this drawing. AVSC is not responsible for any loss or damage arising from the use of this drawing.</p> <p>Perth Airport, a permit must be obtained from the Perth Airport Building Control. Copyright in this drawing is owned by AVSC.</p>	
PROJECT NAME: OPERATIONS/ENGINE/INGR/GRND/RS/Engn Ground Running Area.mxd	DATE: 20/07/2010
DATA SOURCE: Filewise Client: sda_wcsrv05010R/EGR_Ansib_FL	APPD: DATE
ORIGINAL ISSUE	DATE: 20/07/2010
DRAWN: JPH	APPROVED: J.Pemberton
DES: JPH	AMENDMENTS:

Appendix 2



Engine Ground Run Dispensation Request Form

To be completed by operator requesting dispensation for an engine ground run not in compliance with the Time & Power section of the Engine Ground Running & Compass Swing AOS (page 6). That being:

- a) Any EGR between the hours of 2100 and 2300 above ground idle for greater than 15minutes or;
- b) Any EGR between the hours of 2300 and 0530 above ground idle or;
- c) Any EGR on an apron above ground idle.

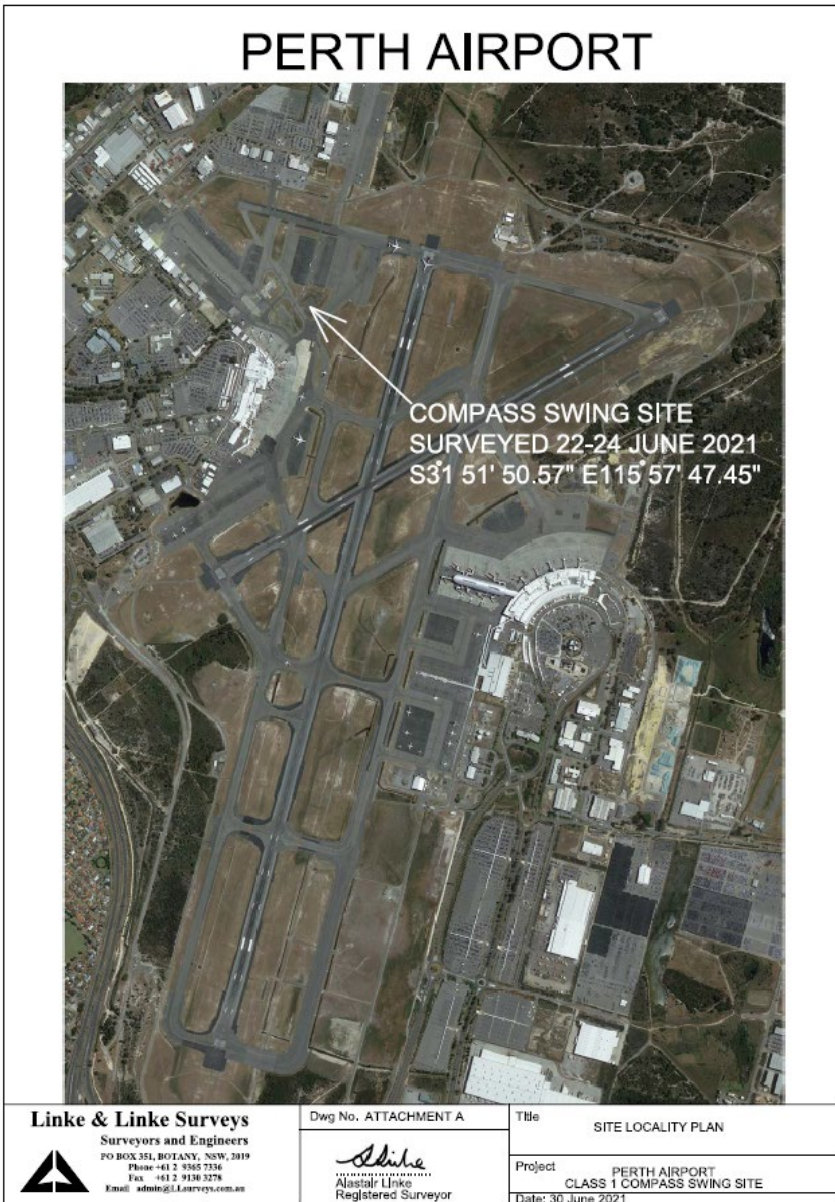
The Airfield Duty Manager will not grant dispensations unless provided with a valid justification for the request. Refer Dispensation section of the Engine Ground Running & Compass Swing AOS (page 6). Dispensations will only be provided in significant and exceptional circumstances, where the operational requirements of the aircraft are such that significant and imminent passenger disruption will result in the event that the engine ground run is not conducted.

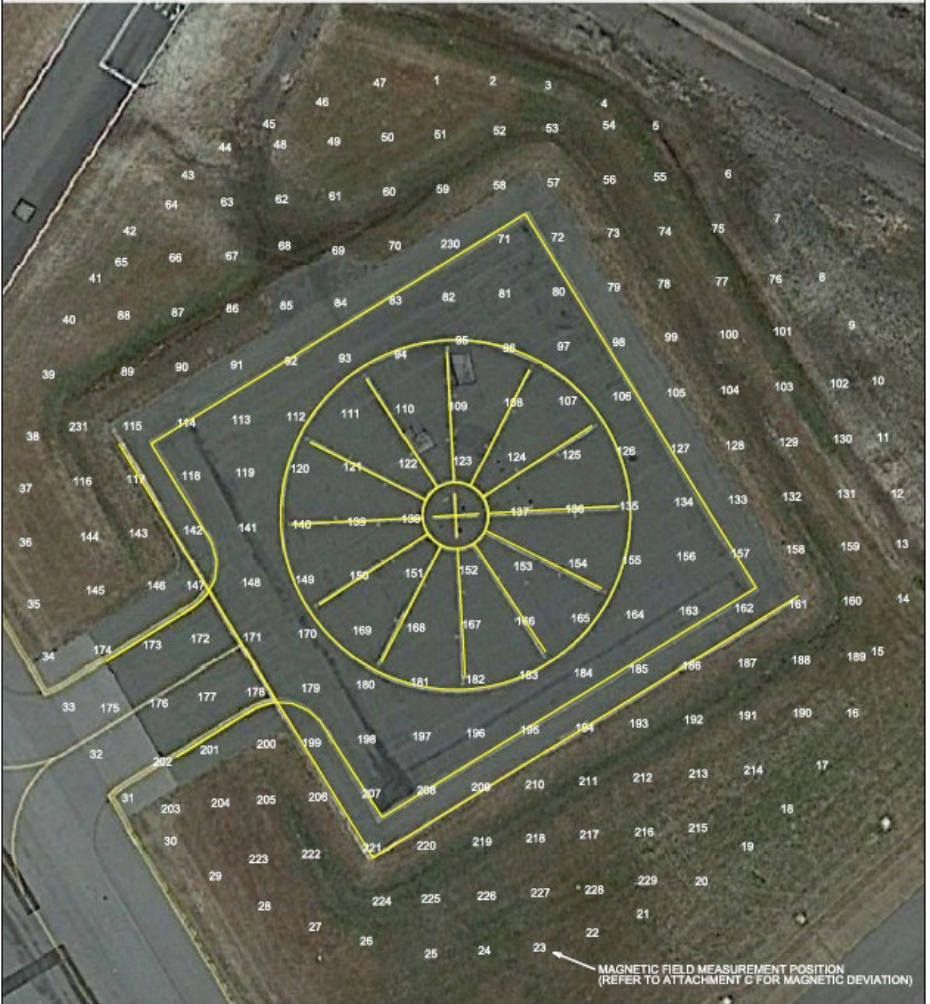
Airline/Operator			
Acft Type		Registration	
Last Operated Sector/ Flight Number		Arrival Time Per	
Next Operated Sector/ Flight Number		Departure Time Per	
Run Purpose			
Highest Power Setting			
Estimated Run Time		Est. Duration At Highest Power	
Justification for Requested Dispensation:			

To be completed by the Airfield Duty Manager	
Approved:	Reason:
Location:	Max Power:
Rejected:	Reason:
ADM:	Date:

Appendix 3

Compass Swing Survey





Linke & Linke Surveys

Surveyors and Engineers

PO BOX 351, BOTANY, NSW, 2019

Phone +61 2 9345 7336

Fax +61 2 9130 3278

Email admin@LLsurveys.com.au



Dwg No. ATTACHMENT B

Linke

Alastair Linke
Registered Surveyor

Title

SITE PLAN

Project

PERTH AIRPORT
CLASS 1 COMPASS SWING SITE

Date: 30 June 2021

COMPASS SWING SITE SURVEY

LOCATION: SITE:	Perth Airport Compass Bay Area	SURVEYOR:	AL/CB/MA						
INSTRUMENT MASTER: INSTRUMENT MOBILE:	WATTS DATUM SN 153HW1A/83 WATTS DATUM SN 175HW1A/83	DATE:	22-24 June 2021						
		TIME:	7:00 - 17:00						
		SHEET:	1 of 3						
POS1 DEVIATION: -0.05	POS2 -0.1	POS3 -0.05	POS4 -0.05	POS5 0	POS6 0.05	POS7 -0.05	POS8 0	POS9 0.1	POS10 -0.1
POS11 DEVIATION: -0.05	POS12 0	POS13 -0.05	POS14 0.05	POS15 -0.05	POS16 0	POS17 -0.05	POS18 0	POS19 -0.1	POS20 0
POS21 DEVIATION: 0	POS22 -0.05	POS23 0	POS24 0	POS25 0.05	POS26 -0.05	POS27 0.1	POS28 0.15	POS29 0	POS30 0.1
POS31 DEVIATION: 0.05	POS32 0	POS33 -0.05	POS34 0	POS35 0	POS36 0	POS37 0	POS38 0.05	POS39 -0.05	POS40 -0.05
POS41 DEVIATION: 0	POS42 -0.05	POS43 0	POS44 -0.15	POS45 -0.05	POS46 0	POS47 0.05	POS48 0	POS49 -0.1	POS50 0
POS51 DEVIATION: 0	POS52 0.1	POS53 0.05	POS54 -0.05	POS55 0.05	POS56 0	POS57 0	POS58 -0.05	POS59 0	POS60 -0.05
POS61 DEVIATION: 0	POS62 0	POS63 0	POS64 -0.15	POS65 -0.05	POS66 0.1	POS67 0.05	POS68 -0.05	POS69 0	POS70 -0.05
POS71 DEVIATION: 0	POS72 0	POS73 -0.1	POS74 0	POS75 -0.1	POS76 -0.05	POS77 -0.05	POS78 -0.05	POS79 -0.05	POS80 -0.15
POS81 DEVIATION: -0.1	POS82 0	POS83 0	POS84 -0.1	POS85 -0.05	POS86 -0.05	POS87 -0.1	POS88 -0.05	POS89 -0.05	POS90 -0.05
POS91 DEVIATION: 0.05	POS92 -0.1	POS93 0	POS94 -0.1	POS95 -0.1	POS96 -0.1	POS97 0	POS98 -0.05	POS99 -0.05	POS100 0

COMPASS SWING SITE SURVEY

LOCATION:	Perth Airport				SURVEYOR:	ALUCB/MA														
SITE:	Compass Bay Area				DATE:	22-24 June 2021														
					TIME:	7:00 - 17:00														
INSTRUMENT MASTER:	WATTS DATUM SN 153/HW/1A/93				SHEET:	2 of 3														
INSTRUMENT MOBILE:	WATTS DATUM SN 175/HW/1A/93																			
DEVIATION:	POS101	0.1	POS102	0.1	POS103	-0.05	POS104	-0.05	POS105	-0.05	POS106	-0.1	POS107	-0.05	POS108	-0.05	POS109	0	POS110	0.05
DEVIATION:	POS111	0	POS112	-0.05	POS113	0.05	POS114	-0.15	POS115	0	POS116	0	POS117	0	POS118	0	POS119	0.05	POS120	-0.1
DEVIATION:	POS121	0	POS122	0	POS123	-0.15	POS124	-0.05	POS125	-0.05	POS126	-0.05	POS127	0	POS128	0.1	POS129	-0.05	POS130	0.1
DEVIATION:	POS131	-0.1	POS132	-0.05	POS133	-0.05	POS134	0	POS135	0	POS136	0	POS137	-0.05	POS138	0.15	POS139	-0.05	POS140	0
DEVIATION:	POS141	-0.1	POS142	-0.1	POS143	-0.05	POS144	-0.1	POS145	0.05	POS146	0	POS147	-0.15	POS148	-0.05	POS149	0	POS150	0.1
DEVIATION:	POS151	0	POS152	-0.05	POS153	0	POS154	0.05	POS155	-0.05	POS156	0.05	POS157	0	POS158	0.05	POS159	0	POS160	-0.05
DEVIATION:	POS161	0	POS162	0.05	POS163	0.05	POS164	-0.05	POS165	-0.05	POS166	0	POS167	0	POS168	-0.05	POS169	-0.1	POS170	0
DEVIATION:	POS171	-0.05	POS172	-0.05	POS173	0.05	POS174	0	POS175	0	POS176	-0.05	POS177	-0.1	POS178	0	POS179	0	POS180	0
DEVIATION:	POS181	0	POS182	0.05	POS183	0	POS184	-0.05	POS185	-0.05	POS186	0	POS187	0.05	POS188	0.05	POS189	-0.05	POS190	-0.05
DEVIATION:	POS191	-0.05	POS192	0.05	POS193	0	POS194	0	POS195	-0.15	POS196	0	POS197	0	POS198	-0.05	POS199	-0.05	POS200	0.05

COMPASS SWING SITE SURVEY

LOCATION:	Perth Airport			SURVEYOR:	AL/CB/MA					
SITE:	Compass Bay Area			DATE:	22-24 June 2021					
INSTRUMENT MASTER:	WATTS DATUM SN 153/HW/1A/93			TIME:	7:00 - 17:00					
INSTRUMENT MOBILE:	WATTS DATUM SN 175/HW/1A/93			SHEET:	3 of 3					
DEVIATION:	POS201 0	POS202 -0.05	POS203 -0.05	POS204 0.05	POS205 -0.05	POS206 -0.05	POS207 0	POS208 -0.05	POS209 0	POS210 0.15
DEVIATION:	POS211 0	POS212 0	POS213 0.1	POS214 0.05	POS215 -0.1	POS216 0.05	POS217 0.05	POS218 0.05	POS219 0	POS220 0.1
DEVIATION:	POS221 0	POS222 0	POS223 -0.1	POS224 0.05	POS225 0	POS226 0	POS227 0.15	POS228 0	POS229 0	POS230 -0.1
DEVIATION:	POS231 -0.1									



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