



 **PORT OF PORTLAND**
PORTLAND INTERNATIONAL AIRPORT

GROUND RUN-UP ENCLOSURE (GRE)

PROCEDURE MANUAL

FOR AIRCRAFT MAINTENANCE ENGINE RUN-UPS

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GROUND RUN-UP ENCLOSURE (GRE) PROCEDURE MANUAL FOR AIRCRAFT MAINTENANCE ENGINE RUN-UPS

1. INTRODUCTION TO PORT OF PORTLAND ENGINE RUN-UP NOISE MANAGEMENT PLAN

In 2001 the Port of Portland (Port) constructed a Ground Run-up Enclosure (GRE) to reduce community noise impacts resulting from aircraft maintenance engine run-ups. Engine run-ups are routine aircraft engine maintenance tests performed as a check to ensure safe and reliable operation of the aircraft engine, as required by Federal Aviation Regulations and aircraft engine manufacturers. This Manual describes the operational procedures associated with use of the GRE at Portland International Airport (PDX). The GRE is described in more detail in **Appendix B** and **Appendix E**. The goal of GRE procedures is to ensure engine run-up activities are in compliance with Oregon Department of Environmental Quality (DEQ) noise regulations by reducing noise impacts to residential neighborhoods located in proximity to PDX. Operators are required to comply with the procedures contained in this Manual and encouraged to contact the Port's Noise Management Department (Noise Department) with questions or concerns.

2. PROCEDURES FOR USE OF THE GRE

2.1 Use of GRE Facility

All jet aircraft up to and including the McDonnell-Douglas MD-11 and turboprop aircraft over 12,500 pounds maximum take-off weight must perform maintenance run-ups (above idle power) within the GRE. Excluded from this requirement are: (a) reciprocating engine aircraft types; (b) rotorcraft; (c) aircraft larger than the MD-11 (wingspan greater than 171 feet); and (d) military jets using the Oregon Air National Guard's run-up facility. Engine runs at idle power are not required to be conducted in the GRE. Idle-power run-ups may be performed at the aircraft's parking location. Operators are encouraged to contact the Noise Department at (503) 415-6068 or Airfield Operations at (503) 460-4134 with questions or concerns about these requirements.

2.2 Defined Terms

Maintenance run-ups conducted within the GRE are referred to as "suppressed run-ups." Maintenance run-ups conducted outside of the GRE are referred to as "unsuppressed run-ups."

2.3 Operating Hours

The GRE is available for use 24 hours a day, 365 days per year. Use of the GRE is based on a first-come, first-serve basis. It is the responsibility of the aircraft operator to confirm the availability of the GRE before repositioning the aircraft to the GRE. Occupancy of the GRE by another aircraft is not an acceptable reason to conduct an unsuppressed run-up unless unscheduled maintenance requires a run-up, without which a scheduled flight will be delayed or cancelled. Because use of the GRE is on a first-come, first-serve basis, aircraft operators should exercise good planning to ensure that the GRE is available in sufficient time to complete all required run-ups prior to returning the aircraft to service.

2.4 Aircraft Ingress into the GRE

At the aircraft operator's discretion, turboprop or business jet aircrafts with wingspans 95 feet or less may power into the GRE using no more than breakaway thrust: Aircraft with wingspans in

excess of 95 feet must be backed into the GRE using a tug. Aircraft with a wingspan of 171 feet or greater are too large to use the GRE. Contact the Noise Department with questions or for exception requests to these regulations.

2.5 Aircraft Orientation

All jet aircraft shall be positioned facing straight out of the GRE (aircraft on or parallel to the GRE centerline) prior to beginning an engine run-up. Propeller aircraft may be oriented nose-in to the GRE as appropriate, in order to achieve better acoustical or aerodynamic performance. Under no circumstances should any aircraft be oriented with the blast pointed toward the sidewalls of the GRE, as they are not designed to withstand these forces (minimum thrust for turning purposes is acceptable). No aircraft engine shall be closer than 60 feet to the rear blast deflector and no aircraft tail shall be closer than 35 feet from the leading edge of the rear blast deflector. Two lines parallel to the blast deflector have been painted on the pavement to identify these distances. Turn-around aircraft may enter from either the right or left side of the GRE. Aircraft should follow the turn-around markings on the pavement. The turn must be fully completed so that the aircraft is parallel with the GRE centerline before conducting high power run ups. Aircraft with wingspans in excess of 95 feet that must be towed into the GRE will be pushed (towed backwards) into the GRE and centered on the painted parking line. When exiting the GRE facility, the tow-tractor or aircraft operator must contact Federal Aviation Administration (FAA) Ground Control prior to entering Taxiway J. The aircraft shall be positioned so that no portion of the aircraft extends aft past the No Aircraft Tails Beyond line (located 35 feet ahead of the jet blast deflector leading edge). The discharge nozzle of any engine which will be operated during the test must be forward of the No Engines Beyond line (located 60 feet ahead of the blast deflector leading edge). Aircraft should be positioned as far as is practical into the GRE in order to achieve maximum acoustical attenuation.

2.6 Stoppage Due to GRE Damage

Damage to the GRE must be reported via the PDX Maintenance Request Line at (503) 460-4683 immediately. Additionally, the *Ground Run-up Enclosure Damage Report Form* (See **Appendix C**) must be completed, describing any damage to the GRE. The form should be faxed to the Noise Department at (503) 548-5895. If the damage is of a nature that would preclude continued use of the GRE, the GRE will be taken out of service until necessary repairs are made and the appropriate Port inspects the GRE. PDX Airside Operations will issue an ARINC message to all users advising the status of the GRE.

2.7 Wing Walkers

Users are encouraged to use wing-walkers when positioning aircraft within the GRE to prevent damage and to assure the aircraft is correctly positioned within the GRE. The use of wing-walkers remains at the discretion of the individual operator.

2.8 Inspection Before and After Use

It is the responsibility of the user to inspect the GRE for unsafe conditions including foreign object debris (FOD) and if FOD is found, to remove it prior to beginning the engine run-up operations. The user shall ensure the interior is free of FOD (and any other potentially unsafe conditions) before leaving the GRE. Users should report any problems or safety concerns to the Noise Department immediately. If after hours or unable to reach Noise Department, PDX Airfield Operations (Airfield-1) should be notified.

2.9 Aircraft Egress from the GRE

Following engine testing within the GRE, aircraft may be towed out or may power out (using minimum power) at the operator's discretion. Contact FAA Ground Control prior to entering Taxiway J or any movement area.

2.10 Taxiway Access

All aircraft will access the GRE via Taxiway J. The FAA Air Traffic Control Tower (ATCT) must grant clearance before any aircraft or vehicles are operated on active taxiways. Proper communications between the aircraft, tow, and the ATCT must be maintained at all times during the taxi/tow operations within the movement area.

2.11 Wind and Weather Conditions

Appendix A includes predicted aerodynamic usability wind roses for various aircraft types. These are general guidelines defining the wind direction and speed parameters when the GRE can be used. These parameters will vary with the type of aircraft, engine position and the power settings used for the engine testing. An illuminated reader board displaying wind speed, direction and air temperature is attached to the north wall of the GRE for easy visibility from the aircraft cockpit. A similar device is installed inside the GRE Ground Control Room. Additionally, a lighted wind cone is installed opposite the GRE opening on the east side of Taxiway J. The operator should closely monitor engine operating readings and abort the test if readings exceed engine manufacturer's limits, if variances in readings indicate unsteady engine operation, or if other indications suggest continued operation might endanger people or property. If the operator still needs to continue the run-up operation, it is recommended that the operator wait until conditions improve so that the run-up can be safely completed. If this is not possible, procedures must be followed as specified in Section 6.

2.12 Exceptions to Using the GRE

There may be times when wind or other conditions prevent a reliable test of engine performance or use of the GRE is not possible, such as GRE closure for maintenance or other conditions outside the control of the user. Under such conditions, an unsuppressed run-up may be conducted outside the GRE, but only with prior approval by the Port. Approval may be obtained from the Port by calling the telephone number set forth in Section 6.2. Unsuppressed run-ups must be conducted in accordance with requirements set forth in Section 6 and at the designated locations described in Section 6.

2.13 Restrictions on Run-Ups

2.13.1 Unscheduled Maintenance

Unsuppressed run-ups for unscheduled maintenance between the hours of 2200-0500 are prohibited except when the GRE is occupied and unscheduled maintenance on another aircraft requires a run-up during these hours. An unsuppressed run-up may be requested from and approved by the Airport Operations Supervisor, provided that: (a) the GRE is occupied by another aircraft at the time the run-up is needed; (b) the maintenance was unscheduled.; (c) the aircraft must be placed into service for a scheduled flight within two hours or the airline will incur a flight delay or cancellation; (d) the requestor contacts the Air Operations Supervisor to authorize an unsuppressed run-up; and (e) the requestor faxes or emails the *Unsuppressed Engine Run-up Report Form* in **Appendix D** to the Noise Department within 24 hours. Unsuppressed run-ups between 0500 and

0700 are allowed only when suppressed run-ups are not possible, after approval by the Port, and only when required to meet a scheduled early morning departure time, but no earlier than two hours prior to departure. For example, an aircraft scheduled to depart at 0700 may conduct an unsuppressed run-up as early as 0500, but an aircraft scheduled to depart at 0800 may conduct an unsuppressed run-up no earlier than 0600. Proper documentation justifying an unsuppressed run-up, including relevant weather conditions (wind speed, direction, etc.) available from the on-site weather station must be reported to the Noise Department for each unsuppressed run-up. There are no restrictions regarding the time of day of suppressed run-ups associated with unscheduled maintenance.

2.13.2 Scheduled Maintenance

Unsuppressed run-ups for scheduled maintenance are prohibited between the hours of 2200-0700. There are no restrictions as to time of day for suppressed run-ups associated with scheduled maintenance.

2.13.3 Additional run-ups

If an aircraft leaves the GRE for any reason, that run-up operation is considered to be complete and the GRE hotline should be notified of the completion (see Section 2.14 for hotline information). The user must notify the GRE hotline for each additional operation, even if it is for the same aircraft being run up later during the same day.

2.13.4 Duration of Use

The GRE is to be used for engine run-up operations only. Any other required maintenance must be performed outside the GRE. Simple engine or propeller adjustments that may be required in order to complete the run-up may be conducted inside the GRE. Such activity should take no longer than 20 minutes to complete. Users should be mindful of others who may be waiting to use the GRE.

2.13.5 Equipment/Vehicle Parking

Any equipment or vehicles that accompany an aircraft to the GRE should be parked close to the GRE Ground Control Room in such a manner as not to obstruct the taxiway or service road.

2.14 Confirming GRE Availability

As the GRE is used on a first come, first serve basis, users are responsible for confirming whether the GRE is vacant and available for use prior to taxi in order to prevent conflicts at the GRE or taxiway congestion. To assist in doing so, arrangements have been made to set up a GRE Hotline with an answering service to maintain a GRE status log. Call (503) 460-4520 and provide the following information:

- (a) Company name
- (b) Aircraft type
- (c) Time to start taxi to GRE
- (d) Estimated duration of run-up
- (e) Name of contact person

(f) User's contact number

The answering service will inform the caller if the GRE is occupied or vacant. If it is vacant, contact FAA Ground Control for taxi instructions. If it is occupied, the answering service will inform the caller when it is expected to be available and will return a call to the caller in the order received. After completing the run-up operation, the user must again call the answering service to report clear of the GRE. The service will then log the GRE as available and call the next user in line as appropriate. This eliminates the need for users to continuously call the answering service to check on GRE availability. To view the interior of the GRE and current wind speed, directions, and temperature information, go via the internet to: <http://www2.portofportland.com/PDX/gre>. This link provides a real-time snapshot inside the GRE. To update the display, click on the Refresh button on your browser's tool bar. The current conditions are displayed with an updated date-time stamp with each click of the Refresh button.

2.15 GRE Lighting

Security low-level lighting is provided inside the GRE. The lights are operated by photocell and remain on during hours of darkness. Operational lighting is provided within the GRE for use during run-up operations at the user's discretion. The operational lighting is turned on by calling (503) 460-4893. After hearing three beeps, first depress the numeral 1 key. You will then hear the status of the lights: 1 beep indicates they are off, 2 beeps indicate they are on. Then depress the # key. The # key toggles the lights on or off, depending on their status at the time the call was made. Depressing the numeral 1 key before hitting the # key is always the required sequence. The lights may also be manually operated from within the GRE Ground Control Room. The operational lights are on a photocell to prevent their use during the daytime.

2.16 Questions

Questions regarding any operational, inspection, or maintenance issues involving the GRE, should be addressed to:

Portland International Airport
Noise Management Department
P.O. Box 3529
Portland, OR 97208
Phone: (503) 460-4100
Fax: (503) 548-5895

To report any safety issue or concern, or the need to perform an unsuppressed run-up, call Airfield-1 at (503) 460-4134. A listing of relevant telephone numbers is included in **Appendix G**.

3. REPORTING – MONITORING USE

The Port prepares monthly reports regarding GRE use statistics. The Port will record pertinent information provided by the GRE users regarding maintenance engine run-up operations for the publication in periodic reports to the Citizens Noise Advisory Committee, and other interested parties.

4. USER MEETINGS

User group meetings will be held on a need-to basis to review engine run-up activity, discuss issues related to GRE use, and refine operational procedures as necessary or recommended.

5. RESPONSIBILITIES

5.1 Port

The Port's Airside Operations is responsible for the following:

- (a) logging unsuppressed run-up operations performed by aircraft operators;
- (b) issuing ARINC messages when the GRE is reported out of service or returned to service;
- (c) restricting aircraft engine run-up operations to avoid risk of harm to people or Port property, or to accommodate emergency conditions or airfield operational constraints; and
- (d) visually inspecting the GRE as part of routine airfield perimeter check and reporting issues to the Noise Management Department.

The Noise Department is responsible for the following:

- (i) maintaining data logs of engine run-ups and GRE usage, based on written reports provided by GRE users;
- (ii) collecting noise monitor data;
- (iii) initiating all requests for maintenance of the GRE, whether performed by the Port's maintenance staff or outside contractors;
- (iv) notifying Airfield-1 when the GRE is closed for maintenance or repair or otherwise unavailable;
- (v) performing routine inspections of the GRE to identify and correct any problems; and
- (vi) conducting GRE user group meetings on an as-needed basis

5.2 GRE Users

GRE users are responsible for the following items:

- (a) notifying the GRE Hotline in advance of and at the conclusion of run-up operations;
- (b) if it is determined that wind conditions do not allow successful completion of a suppressed run-up, notifying Airfield-1 at (503) 460-4134 that it will be necessary to conduct an unsuppressed run-up at the designated alternate location outside the GRE (see **Appendix F**). The preferred alternate run-up locations are Taxiway C and Taxiway B. The restrictions in Section 2.3 will apply. The User must then submit, by fax, a completed *Unsuppressed Engine Run-up Report Form* (**Appendix D**) to the Noise Department. Whether or not it is necessary to conduct an unsuppressed run-up will be based on the judgment of the aircraft operator. In cases where an unsuppressed run-up is necessary, the aircraft operator must then obtain approval to perform the unsuppressed run-up from the Port by calling Airfield Operations or the Noise Department. Abuse of this discretion, however, will be considered a violation of the *Portland International Airport*

Rules (PDX Rules), subject to all remedies available to the Port for such violations. See Section 6 for more information regarding unsuppressed run-ups;

(c) inspecting the GRE for foreign object debris (FOD) and remove it prior to conducting a run-up and insuring that the GRE is FOD-free upon completion of the run-up;

(d) performing engine run-ups in accordance with airframe and engine manufacturer's guidelines;

(e) closely monitoring engine operation and discontinue any test if any condition exists preventing successful engine operation, to prevent damage to the aircraft or GRE;

(d) reporting any damage to the GRE to the Noise Department (See **Appendix C**); and

(e) insuring that all employees using the GRE have been sufficiently trained to use the GRE safely and compliance with all requirements set forth herein.

5.3 Federal Aviation Administration

The FAA is responsible for directing taxing aircraft and ground equipment to and from the GRE while aircraft and ground equipment are within airfield movement areas.

6. UNSUPPRESSED RUN-UP PROCEDURES

6.1 Conditions for GRE Use and Alternative Locations for Run-ups

As described in Section 2, all aircraft (except aircraft under 12,500 pounds maximum take-off weight and aircraft with a wingspan over 171 feet) must conduct engine run-ups above idle power in the GRE, consistent with the engine manufacturer's and aircraft operator's specifications. In the event that use of the GRE is not possible (as described in Section 2.12), Taxiway C, Taxiway B (preferred locations), Taxiway J, Taxiway E, and Runway 3-21 have been designated as alternate locations for unsuppressed run-ups. See **Appendix F** for locations. These locations will be used only when the GRE is out of service or unavailable, or when weather conditions preclude its use. Restrictions listed in Section 2.13 concerning unsuppressed run-ups apply.

6.2 Notifications and Reports

Prior to conducting an unsuppressed run-up, notification must be made to the Port's on-duty Airfield Supervisor 24 hours a day at (503) 460-4134. The operator must then contact ATCT for clearance to the designated alternate run-up location. An *Unsuppressed Engine Run-up Report Form* must be completed and submitted to the Noise Management Office in accordance with Section 5.2.

6.3 Aircraft with Wingspans Over 171 Feet

Use of the GRE is limited to aircraft with wingspans of 171 feet or less. Aircraft with wingspans exceeding the maximum size, such as the B747 and B777, must follow the procedures specified in this section. The notifications and reports specified in Section 6.2 apply. Restrictions listed in Section 2.13 concerning unsuppressed run-ups apply.

7. EMERGENCY PROCEDURES

7.1 Airport Rescue and Fire-Fighting (ARFF)

In the event of fire, personal injury, or other emergencies, requests for ARFF assistance should be handled through direct communication with the ATCT on the appropriate ground control

frequency. If radio communication is not possible, emergency assistance can be obtained by calling the Airport Communications Center at (503) 460-4000. Dialing 911 will also work, but will result in a slower response as these calls are routed to Portland Emergency Response Services.

7.2 Fire Extinguishing Agents and Call Boxes

Two large wheeled fire extinguishers are located on-site (1 on the north wall and 1 on the south wall) to handle minor fires when conducting engine ground run-up operations. In addition, hand-held fire extinguishers are located at the exits in the GRE walls on the outside of the structure. Users must immediately notify the ATCT or the Airport Communications Center of any type of fire, even if it has been extinguished with no apparent damage to equipment or injury to persons. Emergency fire alarm call boxes are located within the GRE Ground Control Room and at each egress door toward the rear of the GRE.

7.3 Communication with Fire Station

Aircraft operators are required to continuously monitor the appropriate FAA ground control frequency. The primary method of requesting emergency fire or medical response is for the aircraft operator to contact the ATCT via the appropriate ground control frequency. Emergency assistance will be dispatched via the Crash Phone by the PDX Communications Center.

7.4 First-aid Kit

A first-aid kit and eyewash are located in the GRE Ground Control Room for immediate care to minor injuries. Notify the PDX Communications Center at (503) 460-4000 in the event of injuries and/or to obtain emergency medical assistance.

8. GRE INSPECTION AND MAINTENANCE REQUIREMENTS

8.1 Responsible Parties

The Noise Department will coordinate all scheduled and nonscheduled maintenance for the GRE. An ARINC message will be issued whenever the GRE is out of service due to maintenance.

8.2 Snow Removal

The PDX Maintenance Department is responsible for the removal of all snow and ice accumulations on the aircraft apron, taxiways and service road pavement areas (including the pad inside the GRE) as much as practical as specified in the PDX Snow and Ice Response Manual. The Port, however, makes no assurances that the pavement inside the GRE will exhibit the coefficient of friction necessary to ensure the aircraft will not move during engine run-ups.

9. USER RISK AND LIABILITY DISCLAIMER

The Port makes no warranties with respect to the use of the GRE. Each user of the GRE uses it at the operator's own risk and is responsible for monitoring all conditions, as described herein, to avoid risk of damage or injury to property or person. Improper use of the GRE, or use during inappropriate weather conditions, has been known to cause unreliable engine operation, up to and including compressor stalls. By their use of the GRE, each user assumes his/her own risk of loss, damage, or injury. Nothing in this Manual should be construed to supersede the recommendations of the aircraft manufacturers or of the aircraft operator's manual regarding the safe operation of the aircraft.

APPENDIX A

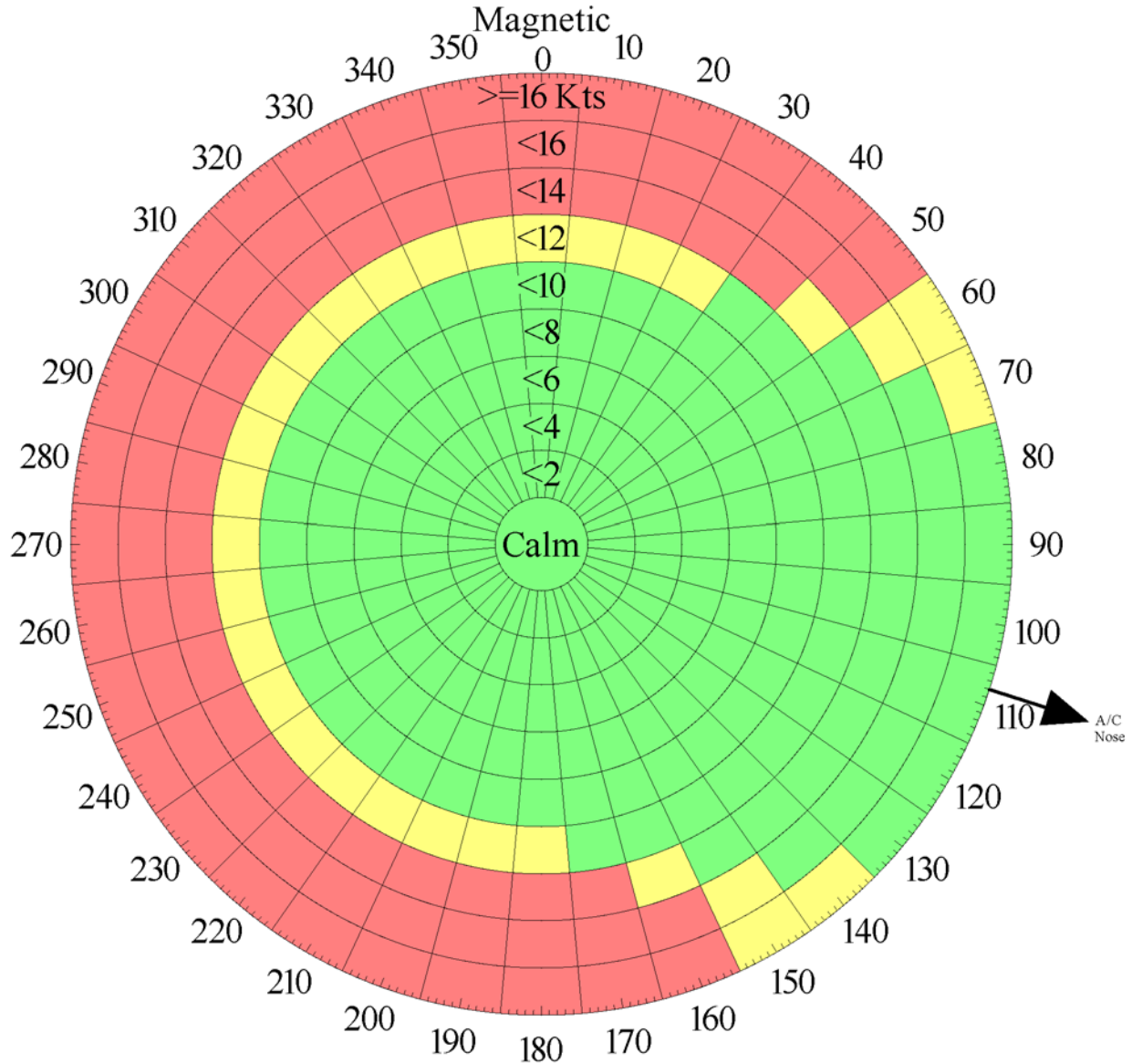
AERODYNAMIC USABILITY WIND ROSES

Aircraft Type	Page
A320	2
B727	3
B737	4
B757	5
B767	6
Business Jets	7
CRJ	8
DC-8	9
DC-9	10
DC-10	11
F-28	12
L1011	13
MD-11	14
MD-80	15
Turboprop	16

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: A320

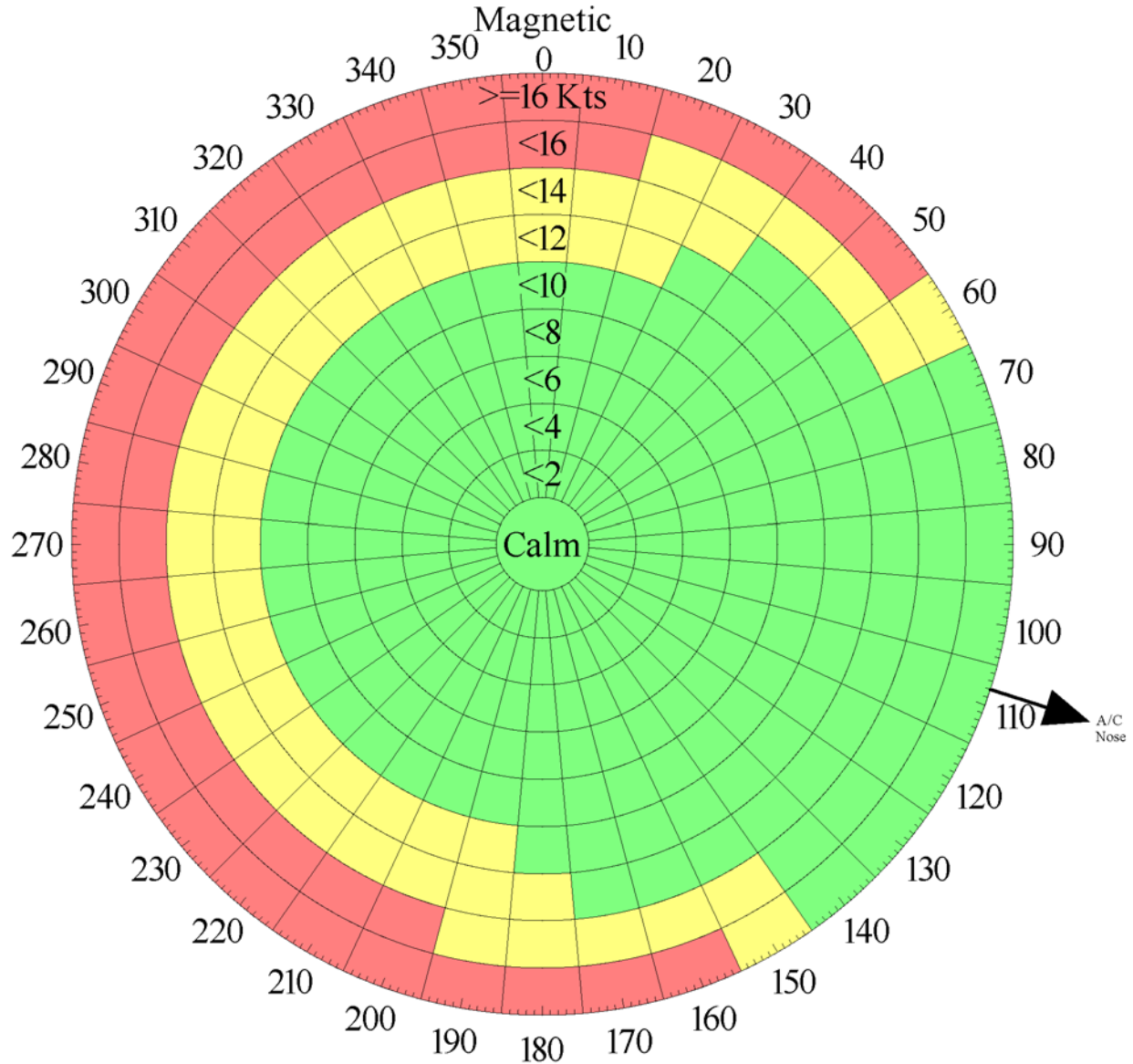


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: B727

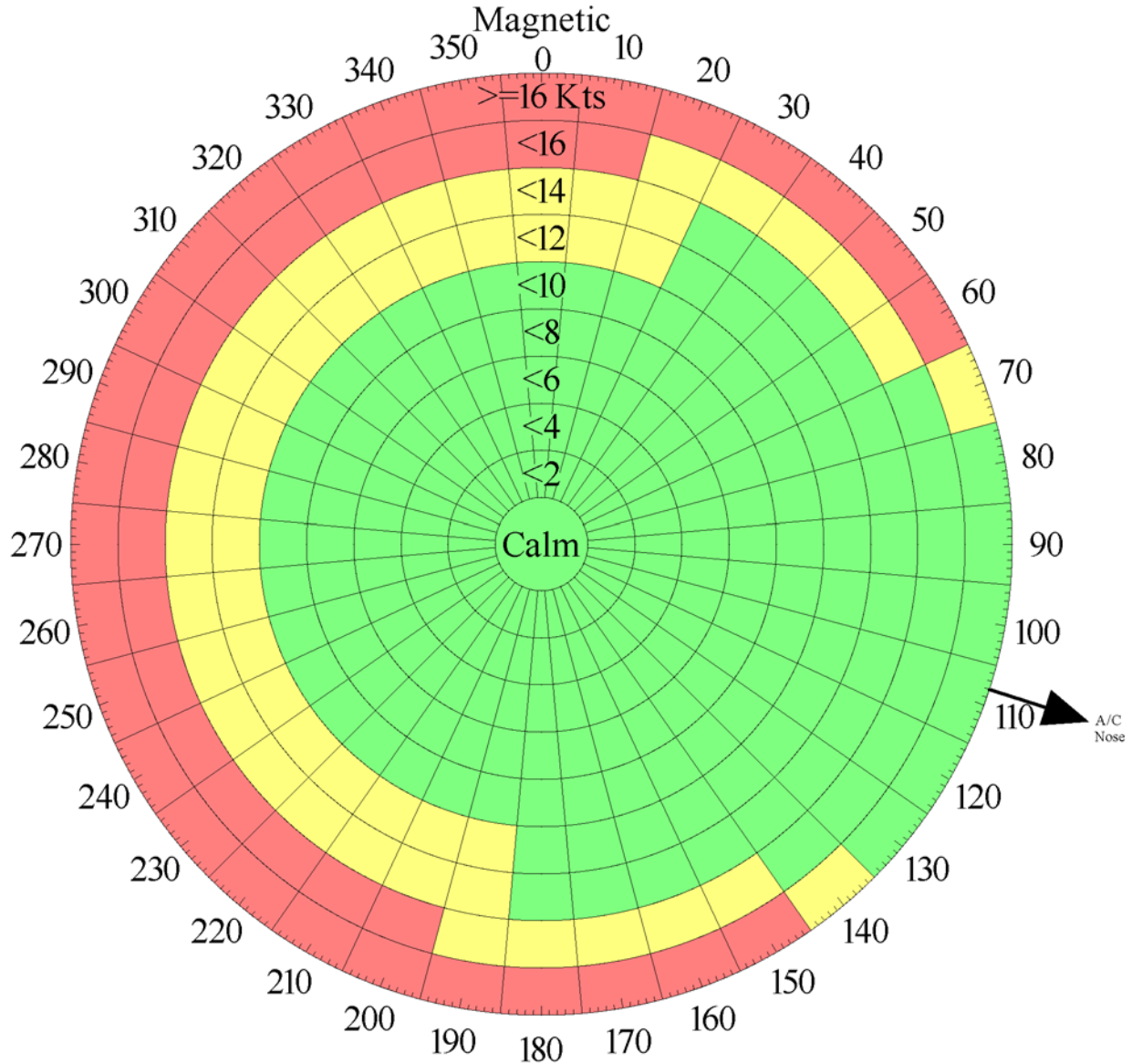


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: B737

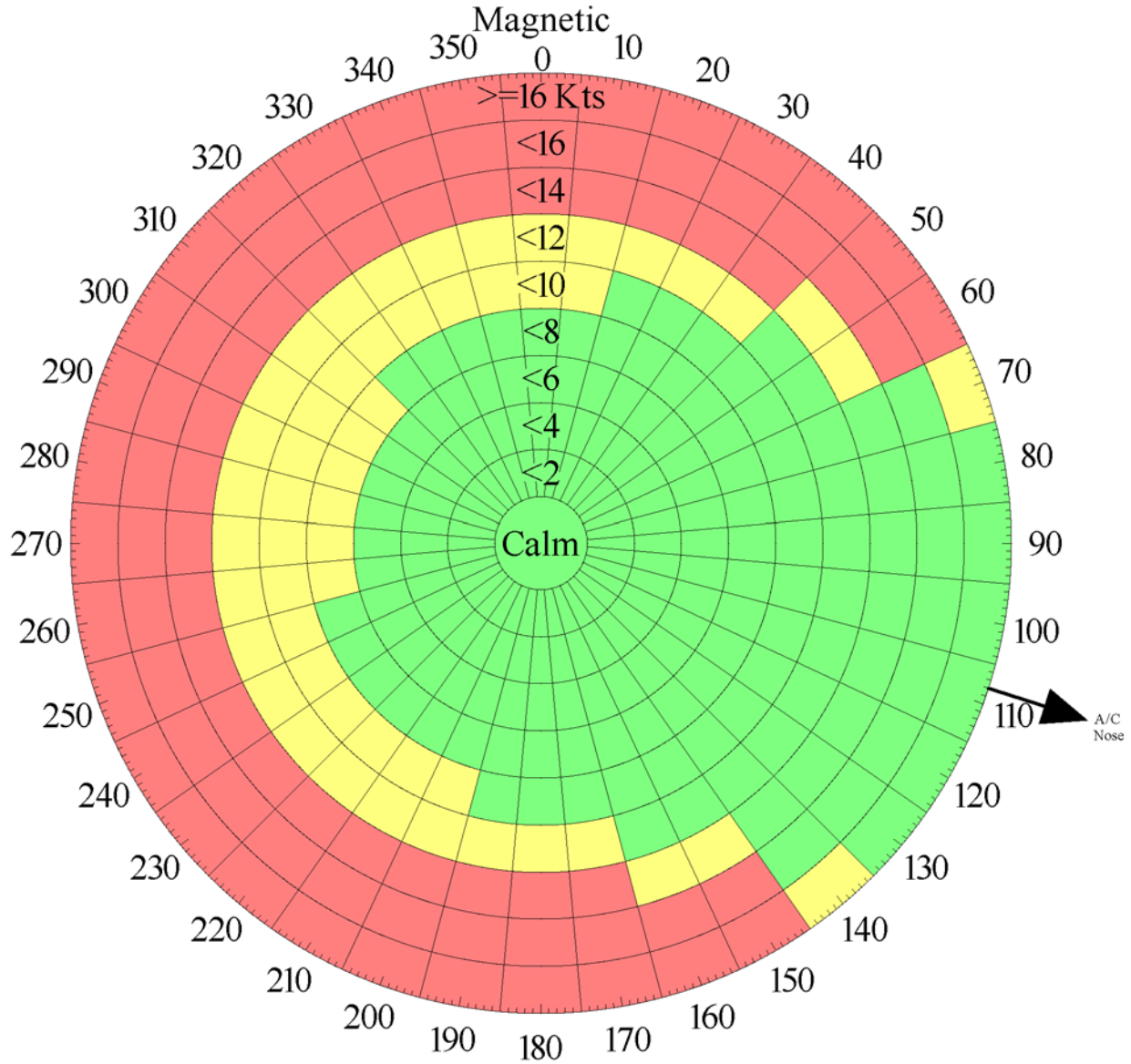


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: B757

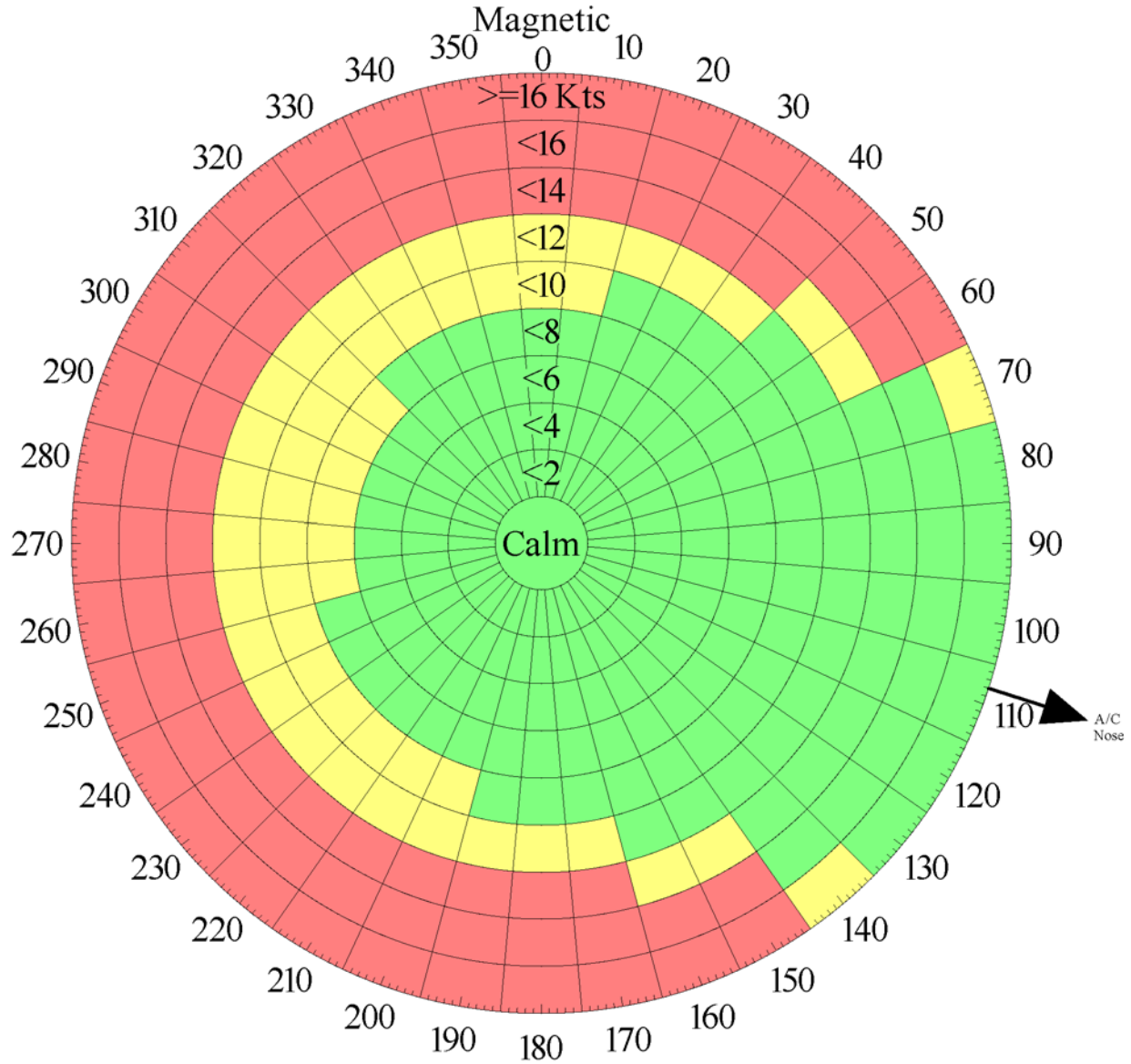


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: B767

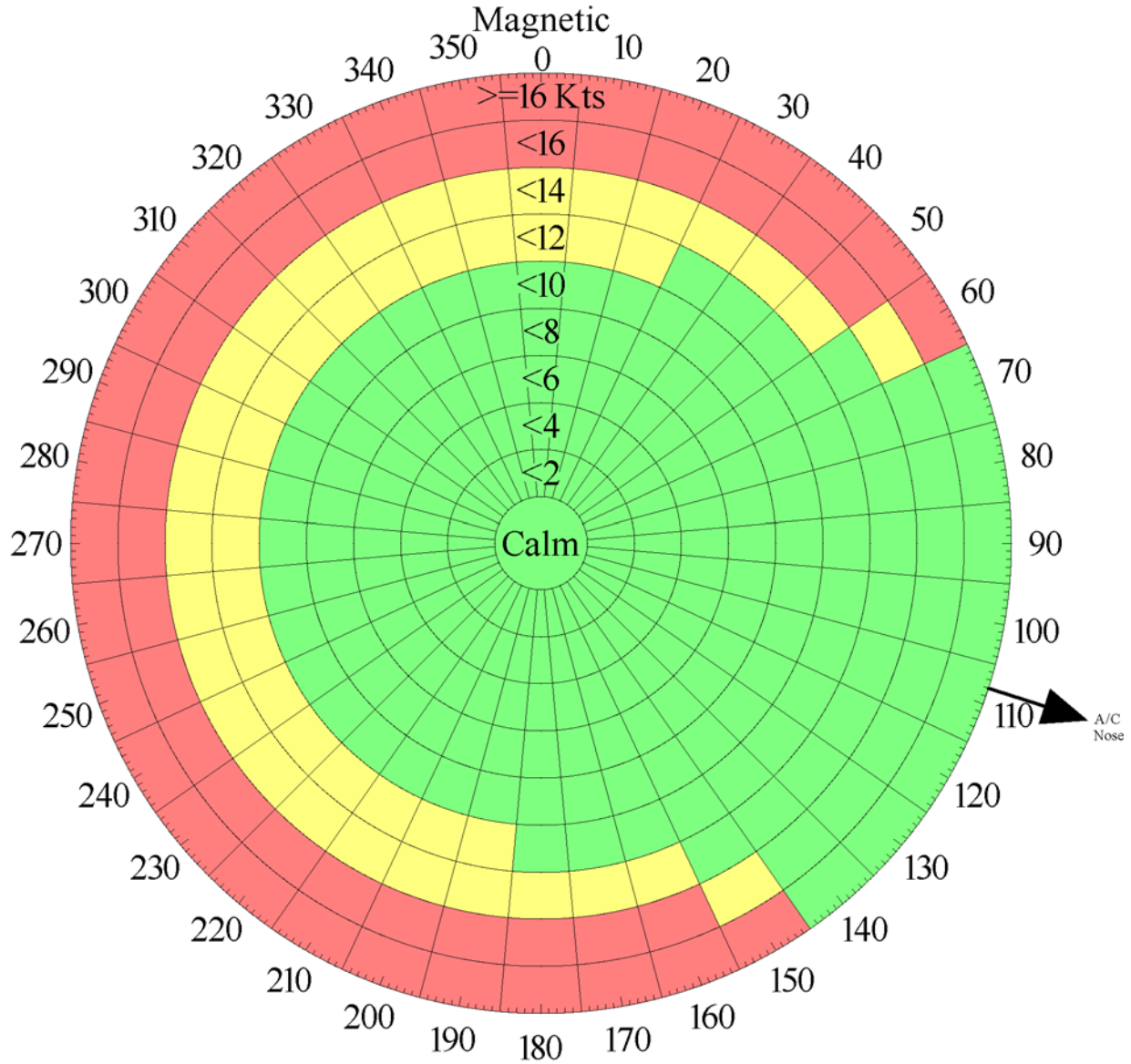


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: Business Jets

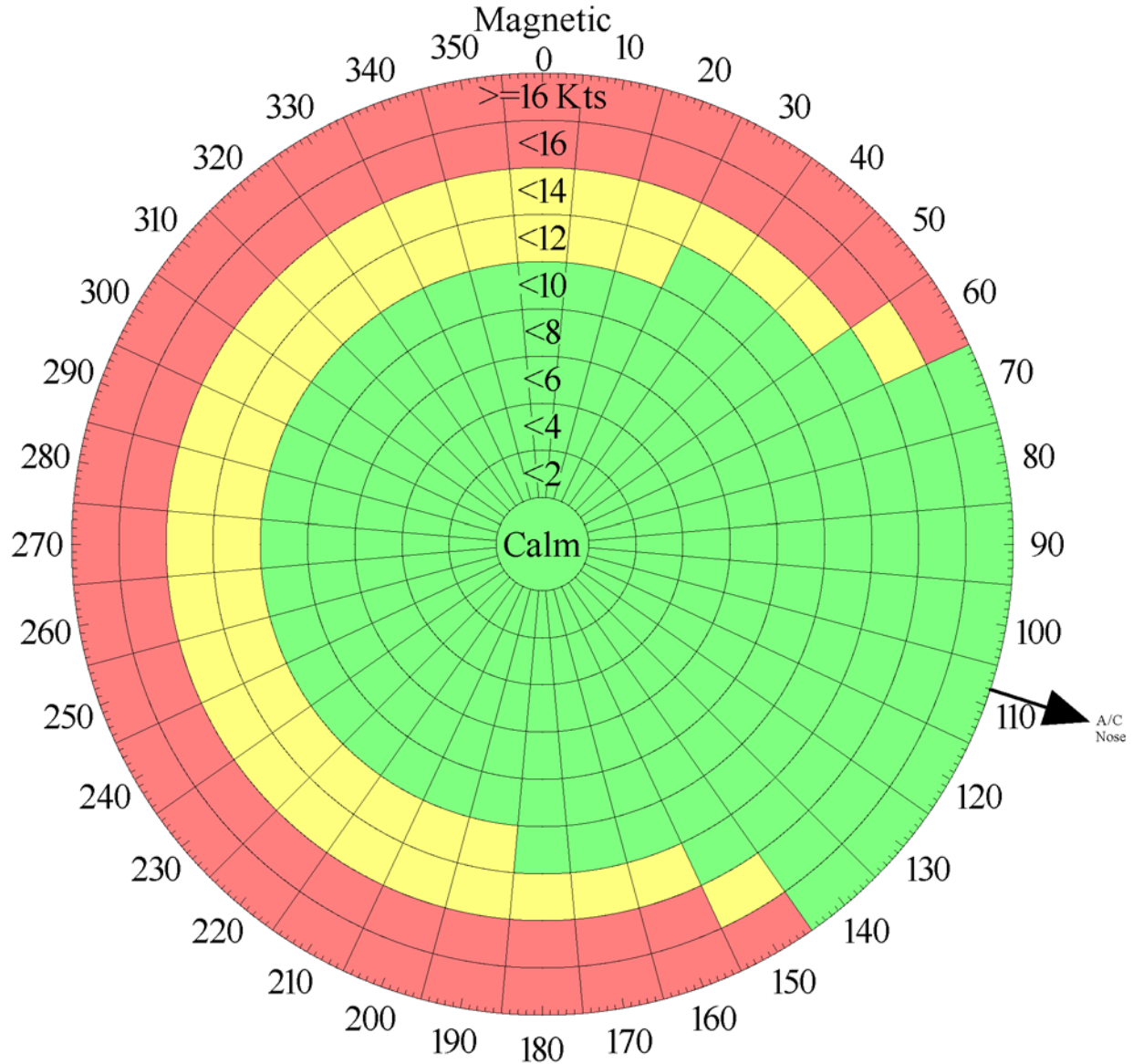


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: CRJ

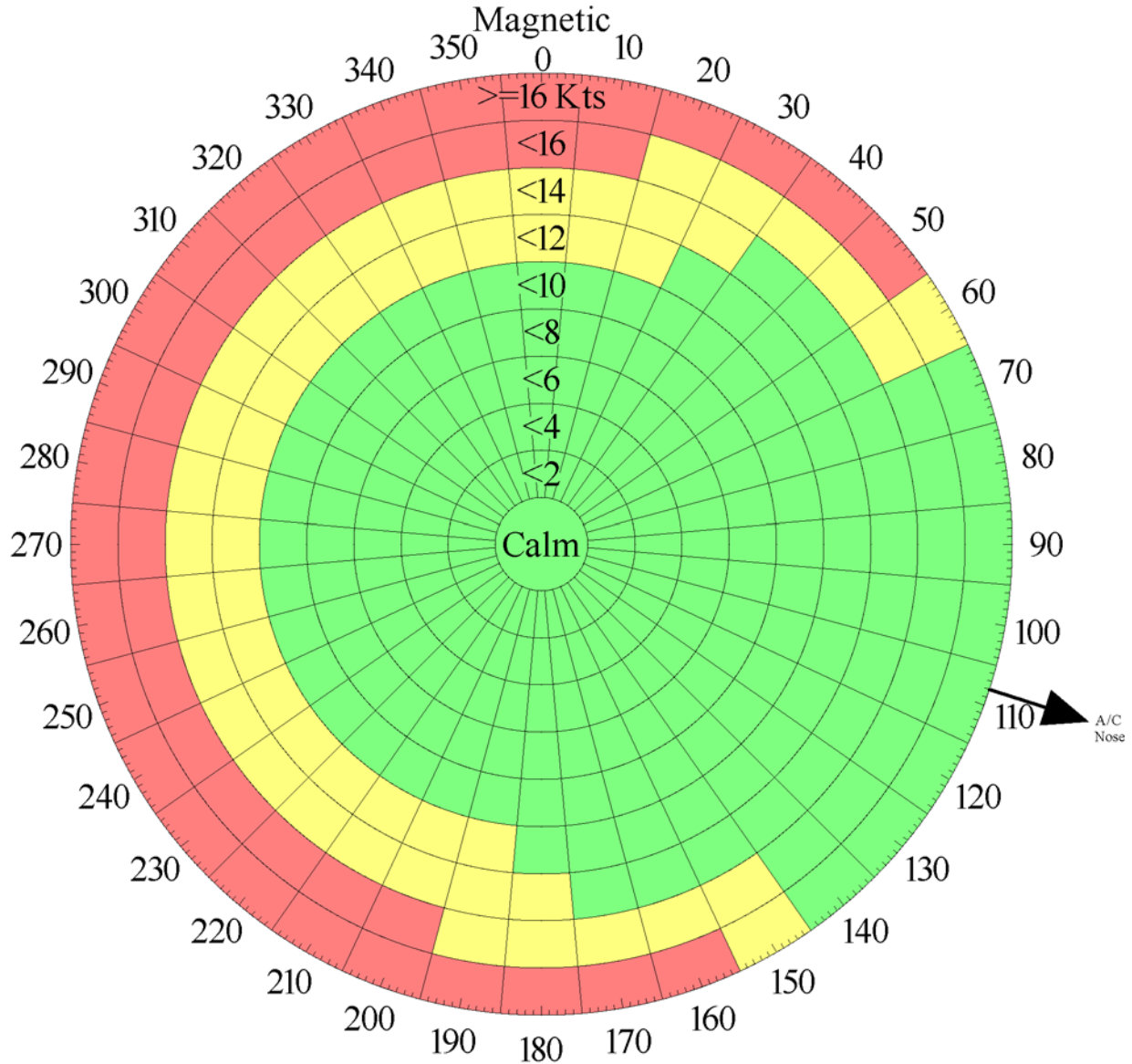


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: DC-8

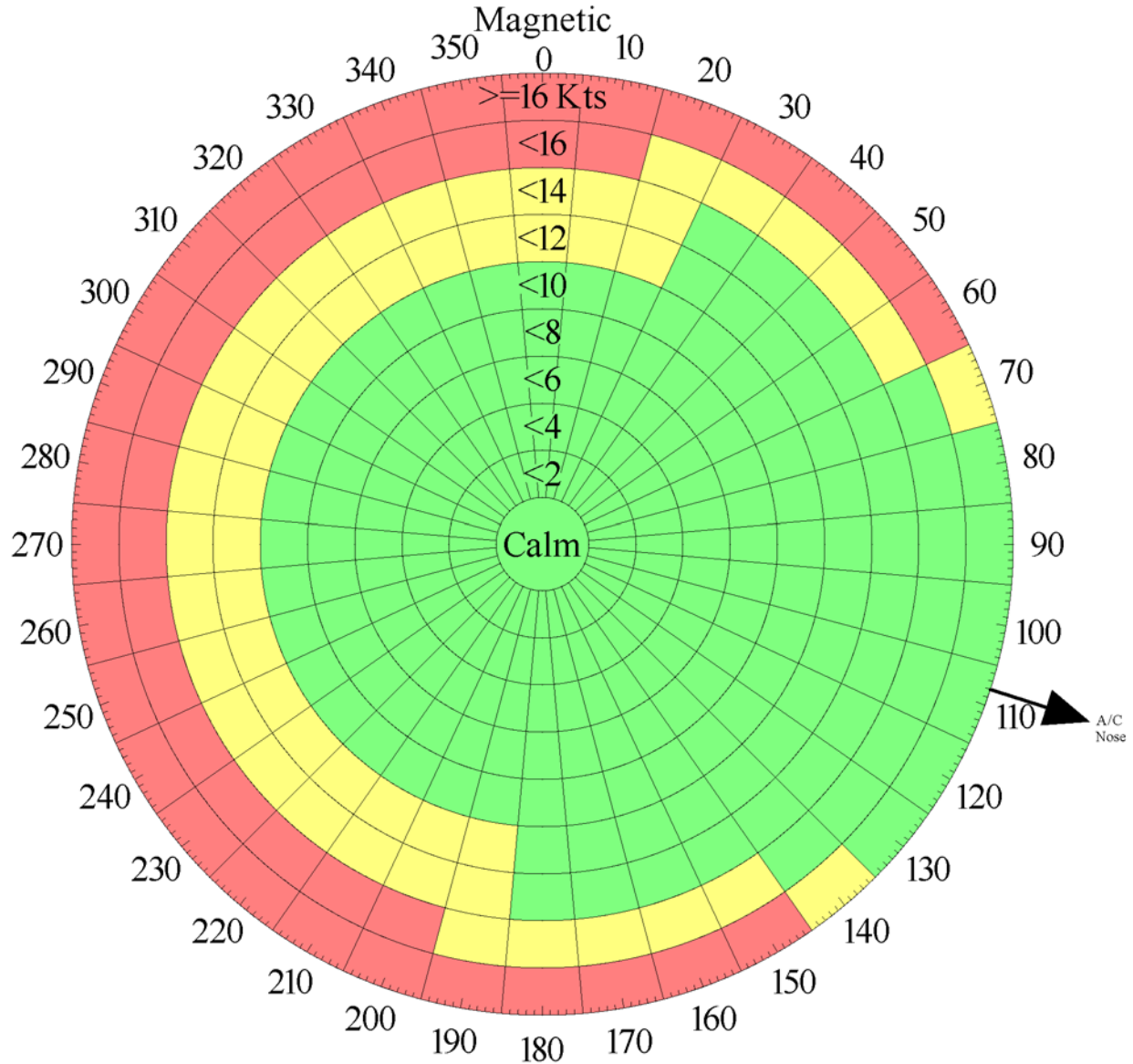


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: DC-9

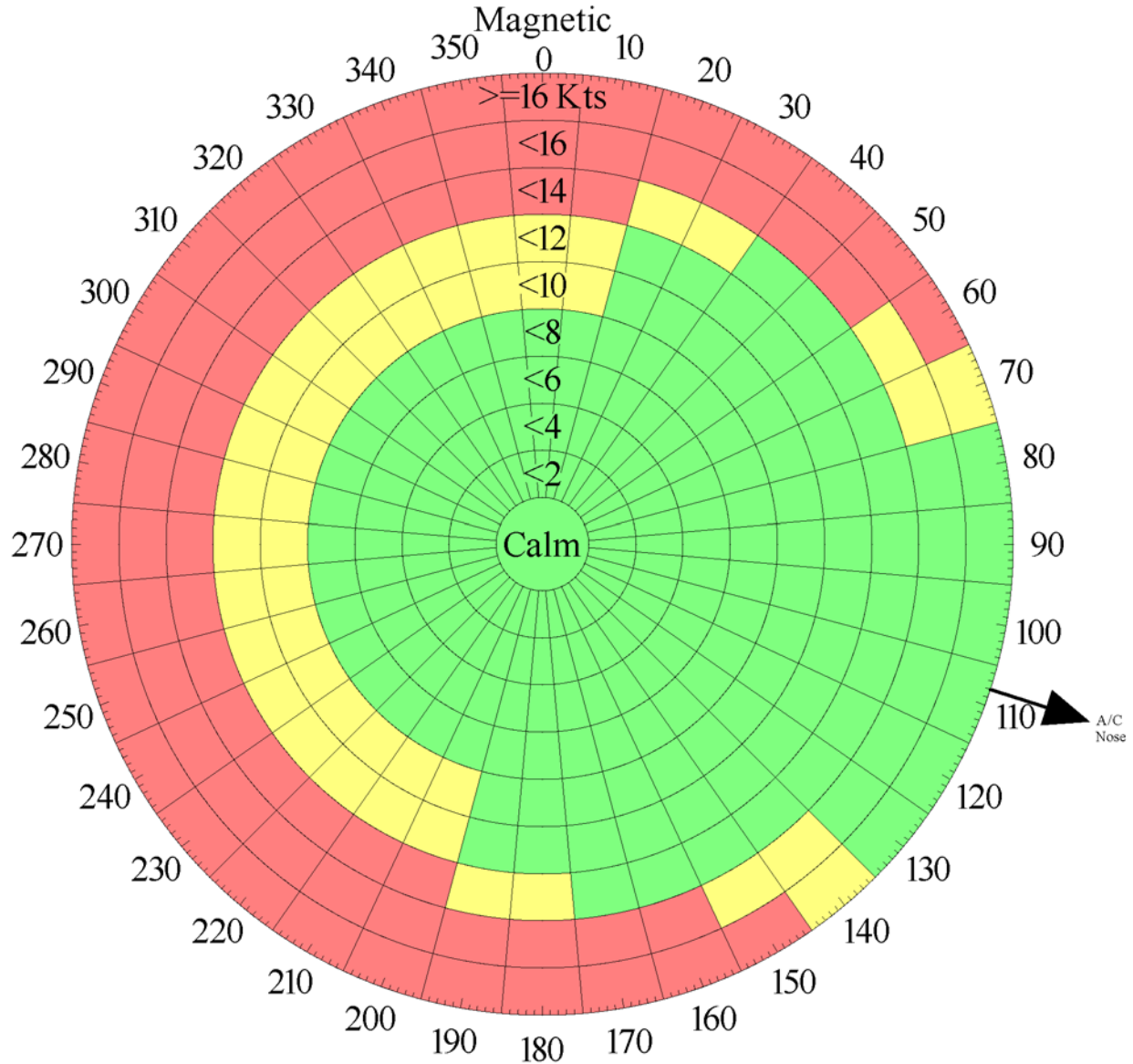


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: DC-10

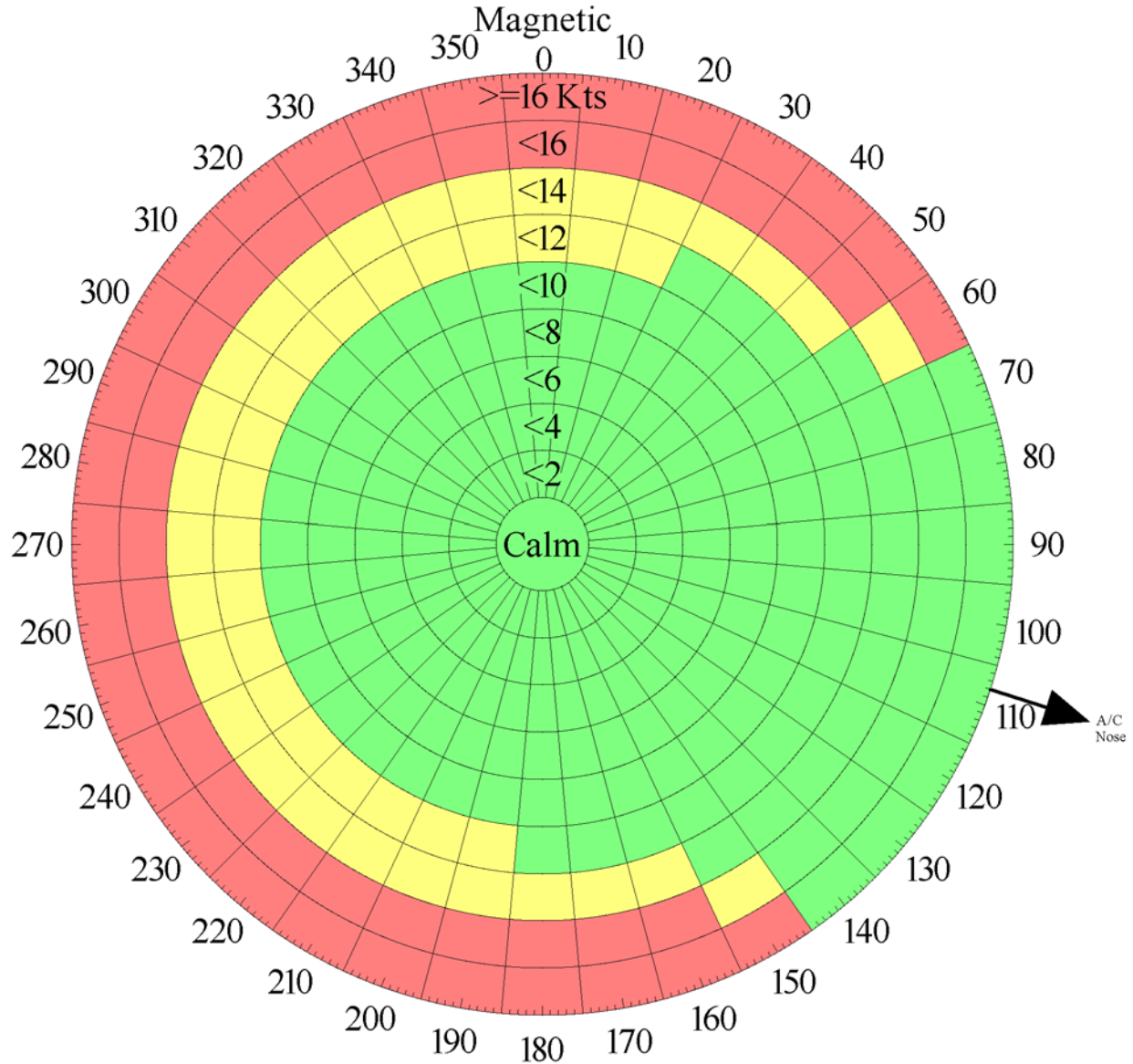


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: F-28

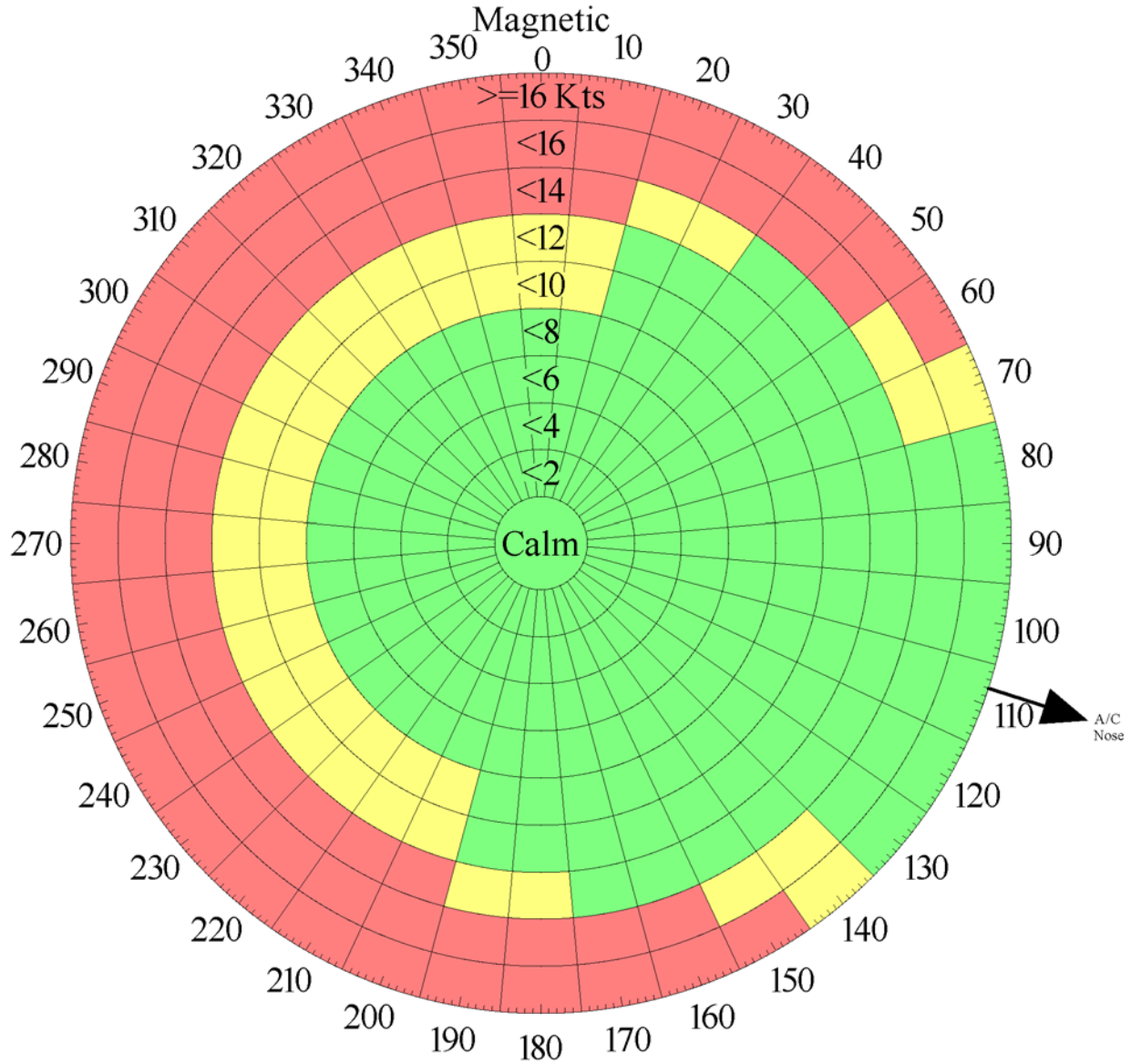


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: L1011

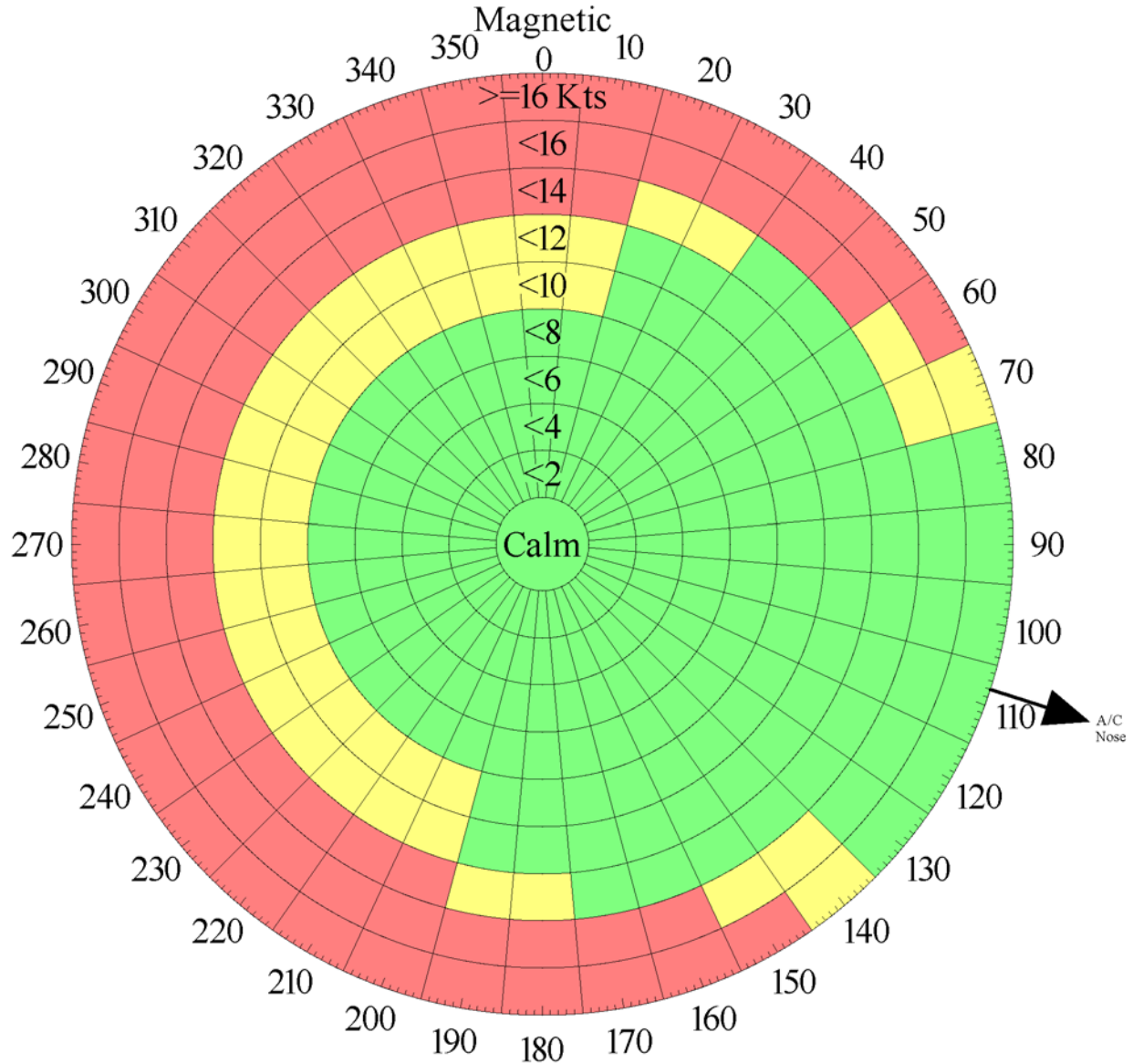


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: MD-11

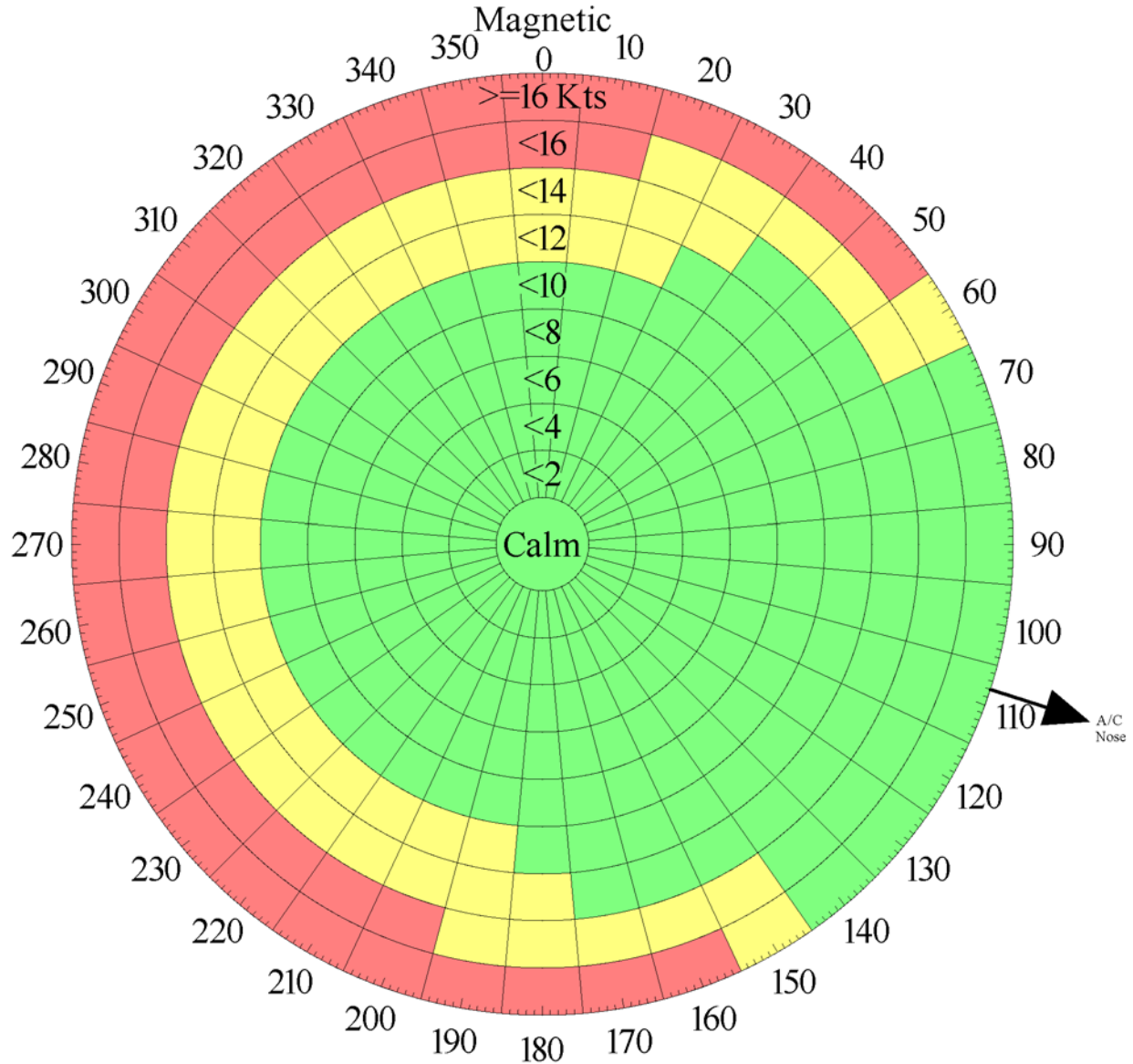


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

Aircraft: MD-80

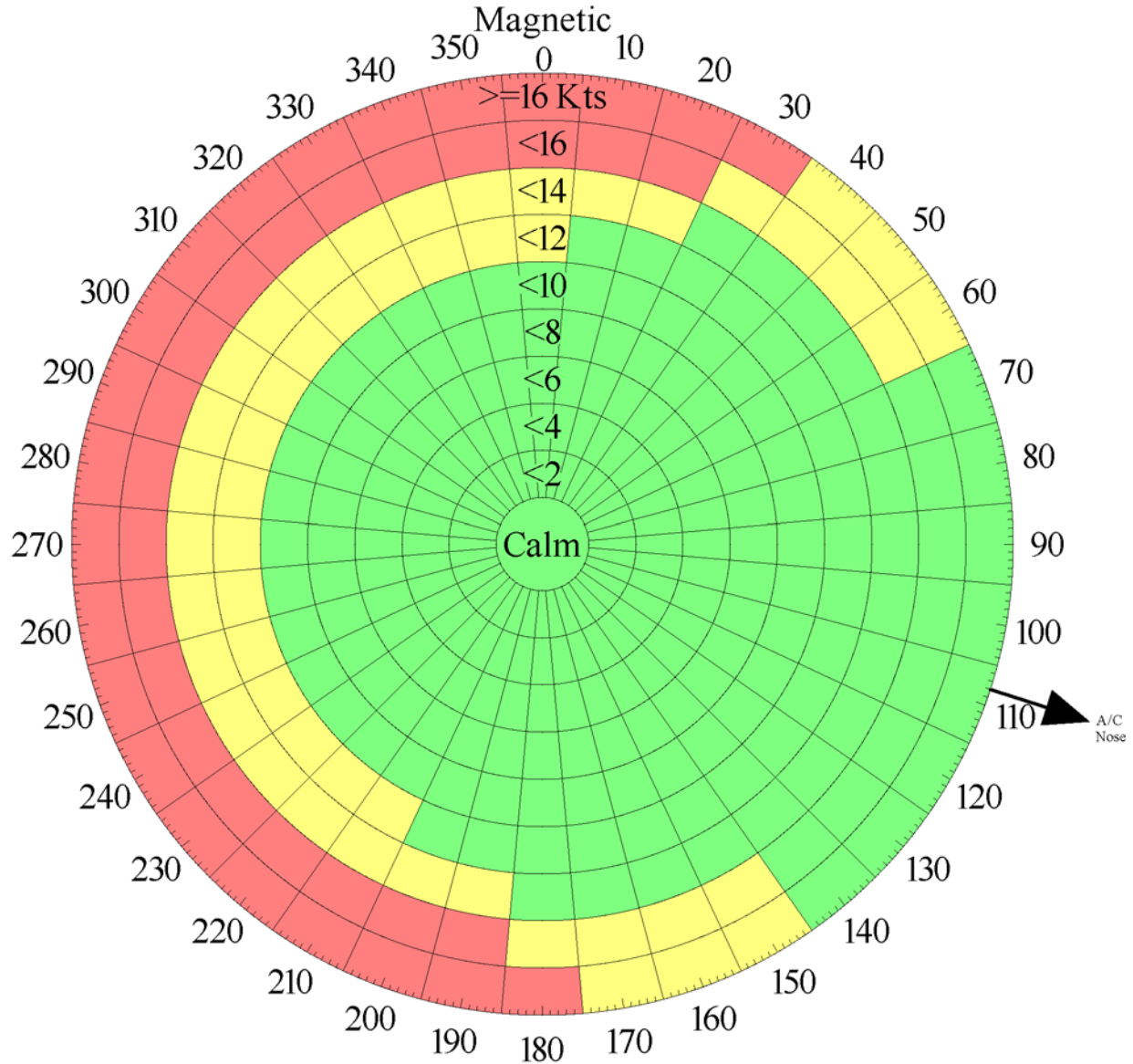


- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

Portland, Oregon GRE

Aerodynamic Usability Windrose

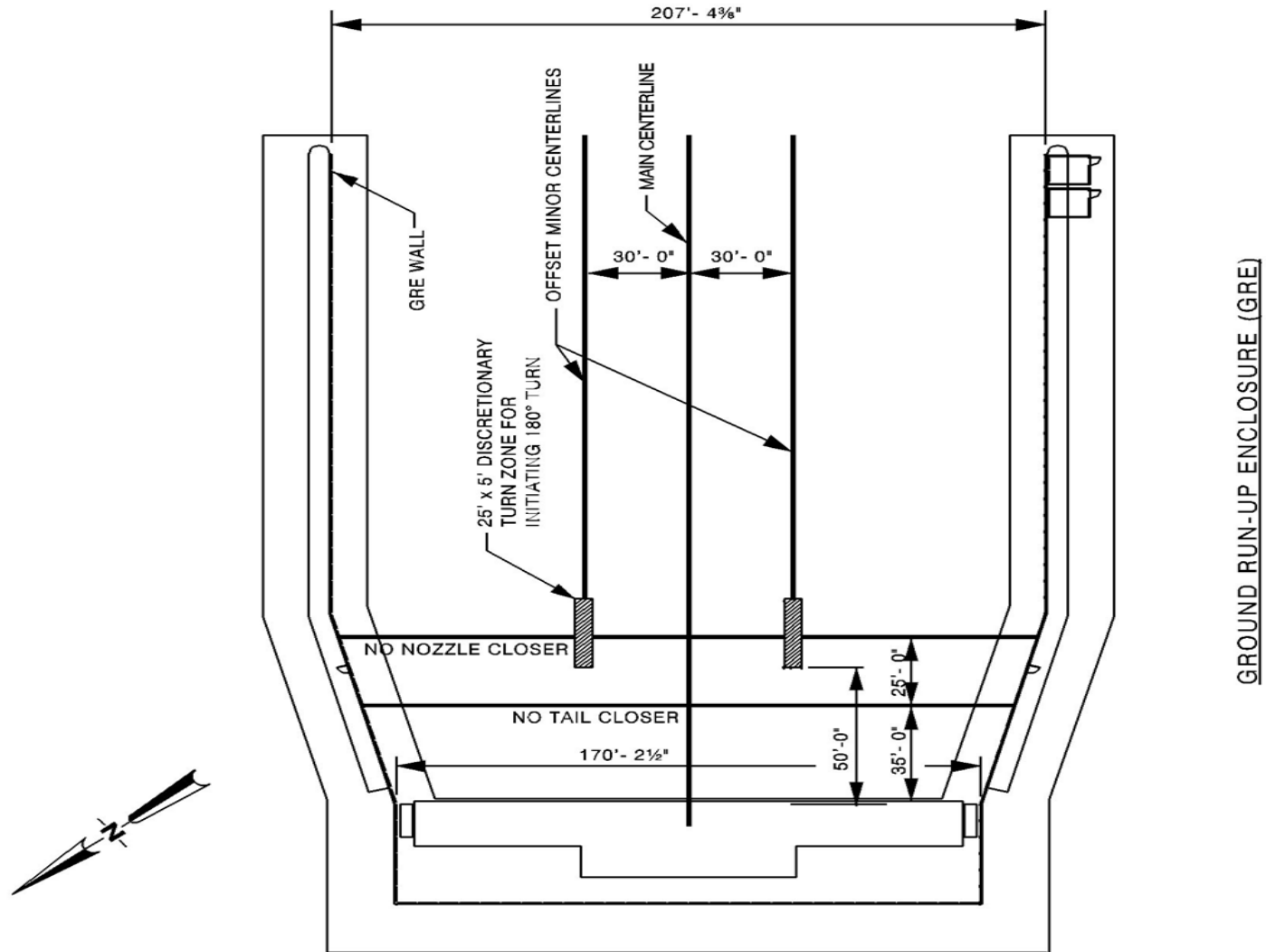
Aircraft: Turboprop



- High-Power Runs Possible
- High-Power Runs May be Possible (Dependent on Wind Stability & Engine Power Setting)
- High-Power Runs Unlikely

APPENDIX B

GRE LAYOUT



APPENDIX C

GROUND RUN-UP ENCLOSURE DAMAGE REPORT FORM

Damage to the GRE must be reported via the PDX Maintenance Request Line at (503) 460-4683 immediately upon discovery. Additionally, the form below must be completed, describing any damage to the GRE. The form should be faxed to the Noise Management Department at (503) 548-5895.

1. AIRLINE: _____

2. DATE: _____

TESTING TIME: 3. _____ Start 4. _____ Finish

5. AIRCRAFT: circle one

Jets	B737	B757	B767
	A318 / 319 / 320	A300 / 310	MD-80
	Citation	DC8	DC10 / MD10

Turboprops	Dash 8-100/200	Dash 8-Q400	EMB-120
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Other _____

6. PURPOSE FOR TESTING

7. DESCRIBE DAMAGE

8. PROBABLE CAUSE FOR DAMAGE

9. NAME (point of contact): _____

10. PHONE: _____ FAX: _____

APPENDIX D

UNSUPPRESSED ENGINE RUN-UP REPORT FORM

Issues or conditions preventing successful engine run-up operations within the GRE should be reported to the Noise Management Department immediately by calling: (503) 460-4100. Additionally, the form below should be submitted describing the conditions or difficulties encountered which prevented engine run-up operations within the GRE. Once complete, the form should be faxed to the Noise Management Department at (503) 548-5895.

1. AIRLINE: _____

2. DATE: _____

TESTING TIME: 3. _____ Start 4. _____ Finish

WIND ATIS: 5. _____(deg) direction 6. _____(knots)

WIND DISPLAY: 7. _____(deg) direction 8. _____(knots)

AIRCRAFT: 9. Type: _____ 10. Tail Number _____

11. POWER SETTING (When difficulty occurred)

ENGINE #1 _____ #2 _____ #3 _____ #4 _____

12. DESCRIBE ISSUE(S) ENCOUNTERED:

13. WAS TEST SUCCESSFULLY COMPLETED: Yes _____ No _____

14. ALTERNATE RUN-UP LOCATION USED:

15. AIRCRAFT ORIENTATION:

16. PROBABLE CAUSE OF DIFFICULTY:

17. OPERATOR'S NAME: _____

18. OPERATOR'S PHONE NUMBER: _____ FAX: _____

APPENDIX E

DESCRIPTION OF THE GRE

1. LOCATION

The GRE is located southwest of the intersection of Taxiways C and J, north of the Horizon Airlines maintenance facility.

2. ACCESS

Aircraft Access: Aircraft will access the GRE from the adjacent Taxiway J, to the east of the GRE.

Vehicle Access: Vehicles may access the GRE via the new service road east of the GRE.

3. DESCRIPTION AND DIMENSIONS

3.1 Orientation

The GRE is a three-sided, open-roofed structure. Aircraft will be positioned within the GRE with nose pointing outward toward the open end at a heading of 127° True (108° Magnetic).

3.2 Size

Exterior dimensions are 236' wide by 291' deep. The clear interior opening is 206' 8" wide inside wall to inside wall

4. PAVEMENT MARKINGS

4.1 Centerline

A yellow line 12" wide will be located in the center of the facility. The line will include both a 150' radius turn leading to the north onto Taxiway J, and a straight extension to the Taxiway J center line.

4.2 Turn-Around Aircraft Centerline

Aircraft with wingspans less than 95 feet can power-in and power-out of the GRE. Two yellow lines 6" wide and offset 30' from either side of the main centerline are provided to mark the nose wheel position for turn-around aircraft (power-in/power-out). Aircraft should initiate a minimum-radius turn with the nose wheel within the 25' x 5' discretionary turn box. The minimum-radius turn should be maintained until the aircraft has completed a 180° turn and is parallel to the GRE centerline. Aircraft following this procedure will have a minimum wingtip clearance of 25' to the side wall and 35' to the jet blast deflector. B737-400 aircraft have a minimum 17' clearance between the tail and the side wall.

4.3 Tail Position

A stripe across the facility floor located 35' ahead of the jet blast deflector is provided. This stripe extends 3' up the side walls of the facility and is labeled "No Aircraft Tails Beyond."

4.4 Engine Position

A stripe across the facility floor, located 60' ahead of the jet blast deflector is provided. This stripe extends 3' up the side walls of the facility and is labeled "No Nozzles Beyond."

5. UTILITY BUILDINGS

5.1 Control Room (For use by aircraft maintenance personnel)

5.1.1 Location

On the south side of the GRE, near the open end of the GRE.

5.1.2 Size

10'-0" wide by 11'-3" deep.

5.1.3 Access

3' by 7' personnel door on the south wall, unlocked at all times.

5.1.4 Windows

One window 3'-6" x 6'-0", is provided to view aircraft operating within the GRE.

5.2 Electrical

5.2.1 Lighting

Two overhead, fluorescent fixtures within the control room, and one HID (High Intensity Discharge) wall pack outside over the door. Wind Speed, Direction, and Air Temperature LED readout board. On-Off Switch for Operational Lighting.

5.2.2 Fire Alarm

Pull station and horn/strobe light.

5.2.3 Convenience Outlets

Five GFGI outlets inside and one waterproof GFGI outlet outside.

5.2.4 HVAC

A ductless, wall-mounted heat pump is provided for heating and cooling the control room.

5.2.5 Miscellaneous

First Aid Kit. Stand-alone eye wash. Telephone.

5.3 Equipment Room

5.3.1 Location

On the south side of the GRE west of the control room.

5.3.2 Size

10'-0" wide by 11'-3" deep.

5.3.3 Access

A 3' by 7' personnel door on the south wall, locked at all times (accessible only by Port personnel).

5.4 Electrical

5.4.1 Lighting

Four overhead, fluorescent fixtures within the equipment room, and one HID wall pack outside adjacent to the access door.

5.4.2 Convenience Outlets

Seven GFGI outlets are located inside the equipment room, one waterproof GFGI outlet is located outside the equipment room on the west wall.

5.4.3 Panels

Power panels are located in the control room.

5.4.4 Transformer

A dry-type transformer is located in the equipment room.

5.4.5 Telephone backboard

The telephone backboard is located in the equipment room.

5.4.6 Wind Speed/Direction Monitoring and Data Storage

Wind Speed/Direction Monitoring and Data Storage is mounted on a computer rack in the equipment room.

5.4.7 Fire Alarm Control Panel

The fire alarm control panel is located within the equipment room.

6. ELECTRICAL SYSTEM

6.1 Service

200 amp 277/480v power is provided underground from the existing panel "DP" located southwest of the GRE.

6.2 GRE Lighting

Security low-level lighting is provided within the GRE. The lights are on a photocell and remain on during hours of darkness. A manual maintenance test override switch is located in the control room.

6.3 Operational Lighting

Lighting is provided within the GRE with high-pressure sodium cutoff fixtures. The operational lighting is turned on by dialing telephone number (503) 460-4893. After hearing three beeps, first depress the numeral 1 key. You will then hear the status of the lights – 1 beep indicates they are off, 2 beeps indicate they are on. Then depress the # key. The # key toggles the lights on or off, depending on their status at the time the call was made. Depressing the numeral 1 key before hitting the # key is always the required sequence. The lights may also be manually operated from within the control room. The operational lights are on a photocell to prevent their use during the daytime. Maintenance test override switches are provided within the equipment room for testing both the photocell and the telephone activation system.

6.4 Obstruction Lights

Eleven red obstruction lights are provided along the top of the GRE structure. They are controlled by a photocell and will remain on after dark. A maintenance test override switch is provided in the control room.

6.5 Exit Lights

Exit lights are provided over each egress door in the GRE. They are connected to the photocell and will remain on after dark. A maintenance test override switch is provided in the control room.

6.6 Grounding

A continuous ground is provided for steel GRE structures including the jet blast deflector.

6.7 Wind Speed/Direction Monitoring Sensors

Wind Speed/Direction Monitoring Sensors are located on a mast atop the south wall of the GRE. A display system is mounted on the north wall of the GRE.

6.8 Noise Monitoring System

A Lochard EMU-1150 noise and weather monitoring station is installed in the Equipment Room to record noise and weather data during engine run-up operations. The microphone for the monitoring station is located on the north wall.

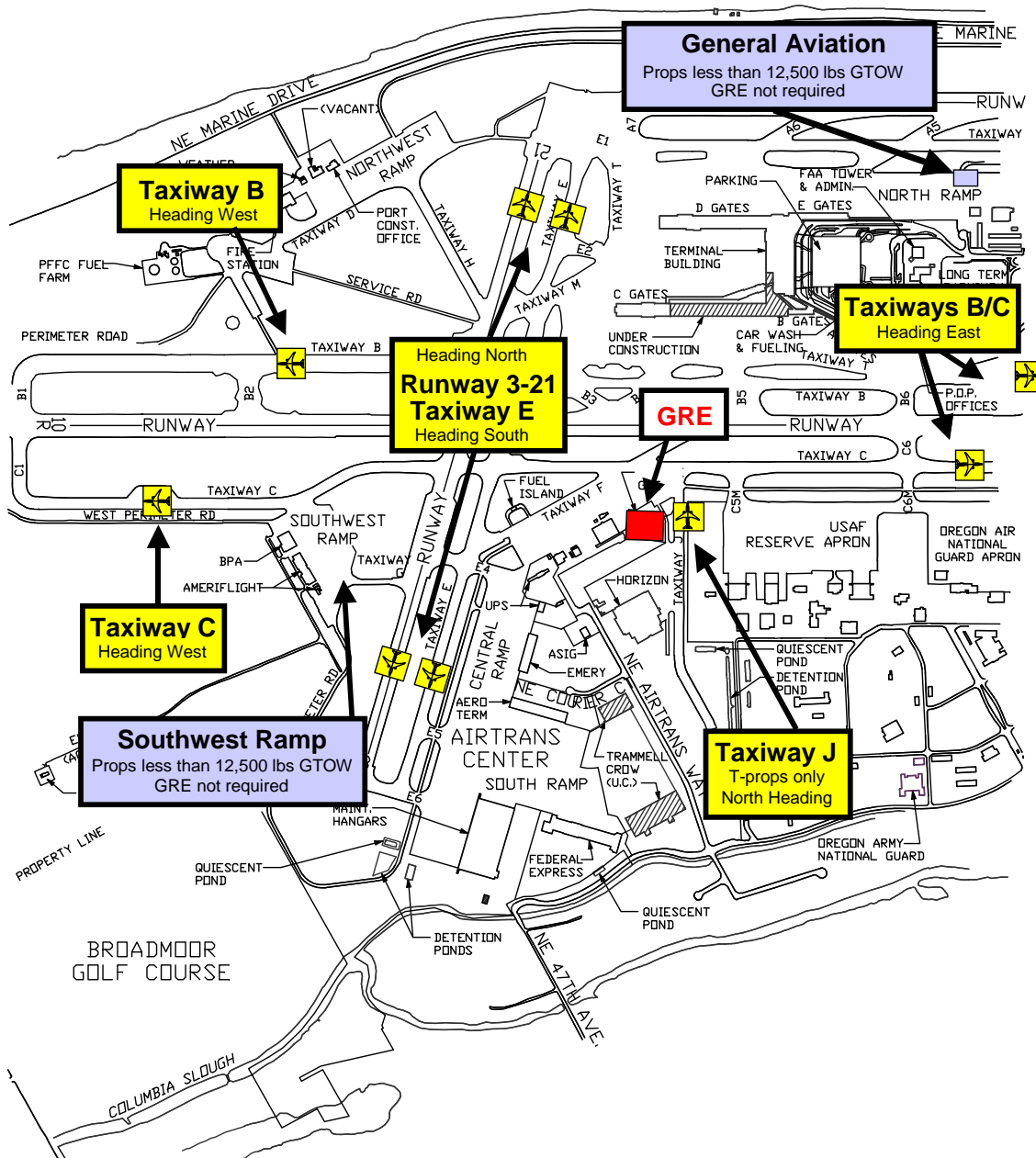
6.9 CCTV Camera System

CCTV Camera System is installed on the south wall to transmit to the Noise Management Office digital photographs of aircraft performing run-ups inside the GRE.

APPENDIX F

ALTERNATE ENGINE RUN-UP AREAS

Alternate Engine Run-up Areas (Only when GRE not usable) Portland International Airport



APPENDIX G

TELEPHONE DIRECTORY

Airfield Operations Supervisor (Airfield-1)	(503) 460-4134
Airport Communications Center	(503) 460-4000 (emergency) (503) 460-4747 (non-emergency)
GRE Operational Lighting	(503) 460-4893. After 3 beeps, press 1 for lighting status (on or off). A single beep indicates lights are off. Two beeps indicate lights are on. Press the # key to toggle the lights on or off, depending on the status. For example, if the light status is off, as indicated by 1 beep, pressing the # key toggles the lights on. If it is on, as indicated by 2 beeps, the # key toggles the lights off.
GRE	(503) 460-4894 (Control Room) (503) 460-4891 (Equipment Room)
GRE Hotline (for GRE availability)	(503) 460-4520
Maintenance Request Line	(503) 460-4683
Noise Management Office	(503) 548-5895 (fax)