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REVIEWER'S REPORT

Manuscript No.: IJAR-59920

Title: Asset Criticality Ranking for Mission-Critical Airport Infrastructure: A Decision Model for Prioritizing Planned Preventive Maintenance.

Recommendation:

Accept as it is .....

Accept after minor revision.....

Accept after major revision .....

Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance	✓			

Reviewer Id: JPR-394

Reviewer's Comment for Publication.

The manuscript presents a relevant and well-structured decision model for ranking the criticality of mission-critical airport infrastructure assets and prioritizing planned preventive maintenance. The study integrates six weighted criteria, including safety and regulatory consequences, operational impact, redundancy, likelihood of failure, detectability and maintainability, and cost consequences, into a transparent criticality index. The inclusion of a safety override and three maintenance priority tiers provides a practical approach to directing maintenance resources according to the consequences of asset failure. The illustrative example involving nine airport asset classes demonstrates the model's application and sensitivity to changes in weighting. The paper is supported by a review of 30 peer-reviewed studies and offers useful implications for airport maintenance management, operational reliability, and safety. Although the model has not yet been validated using real airport data, its limitations are clearly acknowledged. Overall, the manuscript makes a meaningful contribution to infrastructure maintenance planning and is suitable for publication after minor revision.