Introduction to the implementation of GRF in China's civil aviation transport airports

中国民用航空局

Civil Aviation Administration of China

CONTENTS

CONTENTS

01. Foreword

In order to fulfill the obligations as a state party of ICAO, China supports ICAO's arrangement and proposal actively. The Department of Airport of CAAC has carried out a series of work to ensure that all transport airports across the country report runway surface conditions with the "Global Reporting Format" set by ICAO. At present, the assignment has gone through two stages: winter and summer, and the overall operation is in good condition

CONTENTS

02 / Progress

- **Preliminary research stage**
- Internal test and evaluation stage
- Implementation stage

02. Progress

Preliminary research stage

Main problems：

Previously, China’ s transport airports generally used runway friction test equipment to evaluate runway friction characteristics, and from now on we need to assess the type, coverage and depth of contaminants to determine the runway condition code (RWYCC).

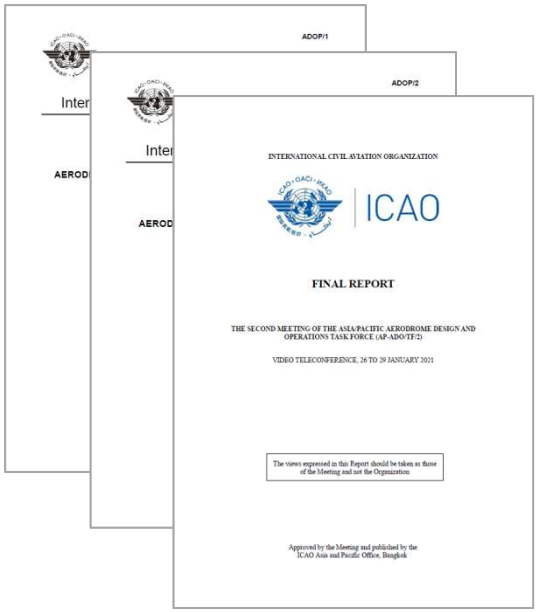
02. Progress

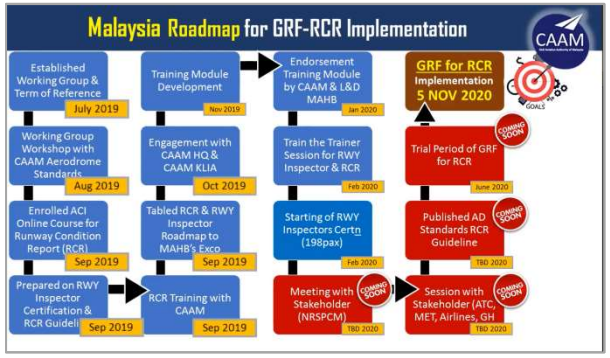
Preliminary research stage

Major work carried out:

- **Study and research**

Before June 2020, we attended relevant meetings of ICAO and Asia Pacific Office.





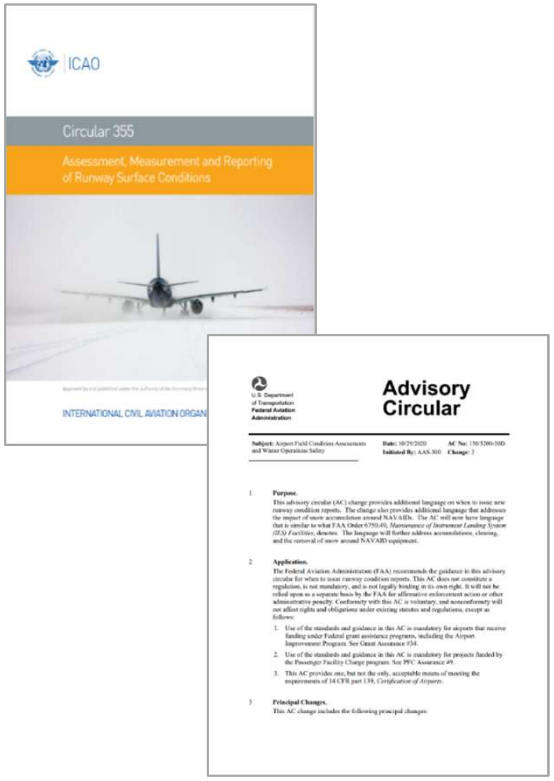
02. Progress

Preliminary research stage

Major work carried out:

- **Study and research**

In July 2020, we translated "Assessment, Measurement and Report on Runway Surface Condition" of ICAO, "Assessment of Airport Pavement Surface Condition and Winter Operation Safety" of FAA and other documents.



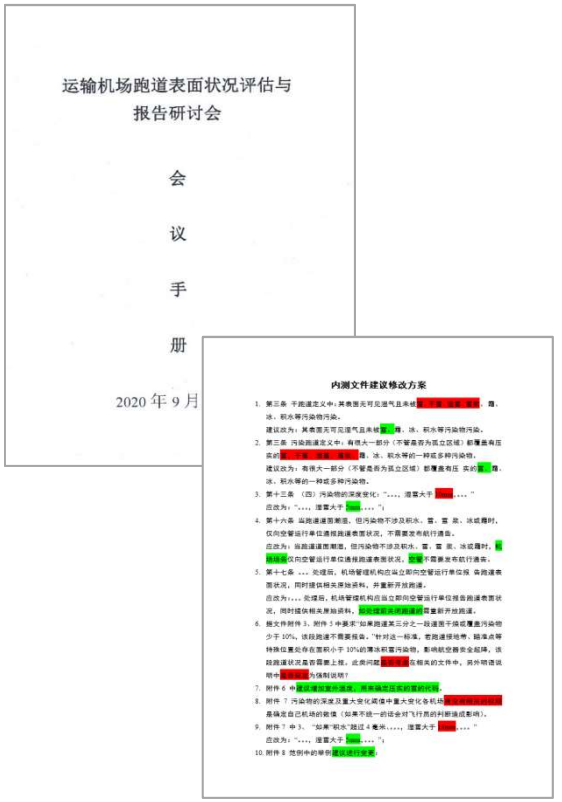
02. Progress

Preliminary research stage

Major work carried out:

- **Study and research**

In July 2020, a series of documents including Annex 14 Aerodromes, Procedure for Air Navigation Service Aerodromes, Assessment, Measurement and Report of Runway Surface Condition, and Assessment of Airport Pavement Surface Condition and Winter Operation Safety were studied by us.



02. Progress

Preliminary research stage

Major work carried out：

- **Business exchange**

According to ICAO Doc9981 "Procedure for Air Navigation Service Aerodromes", it is clear that minimum depth value of dry snow, wet snow and snow slush should be reported at 3millimeters, but in the example, the thickness of 2millimeters was reported. According to the evaluation criteria, the RWYCC of 3millimeters snow slush should be 5, but in the report example it’ s marked as 2.So, the Department of Airports emailed ICAO for consultation

02. Progress

Preliminary research stage

Major work carried out:

- **Preparation of rules**

In July 2020, the compilation of the Rules for Assessing and Reporting of Runway Surface Conditions at Transport Airports was launched.

In August 2020, the first draft of the Rules was finished based on the study of relevant documents of international organizations and countries

民航局文件

民航规〔2021〕32号

关于印发运输机场跑道表面状况评估和通报规则的通知

民航各地区管理局，各航空公司、机场（集团）公司，空管局：

为规范运输机场跑道表面状况评估和通报工作，民航局制定了《运输机场跑道表面状况评估和报告规则》（以下简称《规则》），现印发给你们，请各单位遵照执行，并结合换季工作，加强《规则》宣贯培训，完善协调机制和协议，确保相关工作顺利实施。

中国民用航空局

2021年9月3日

— 1 —

02. Progress

Preliminary research stage

Major work carried out:

- **Preparation of rules**

In September 2020, the Department of Airports held a special meeting and organized experts to conduct a comprehensive discussion.

In December 2020, the Rules were completed on the basis of a broad range of opinions.

02. Progress

Preliminary research stage

Results achieved：

(1) We learned and understood the requirements of Runway surface condition Assessing and Reporting;

(2) We compiled the Rules, which laid the foundation for the subsequent formal implementation of GRF..

CONTENTS

02 / Progress

- Preliminary research stage
- **Internal test and evaluation stage**
- Implementation stage

02. Progress

Internal Test and evaluation stage

Major problems：

- The runway surface condition Assessing and Reporting involved a wide range of units and departments, posing a challenge to mutual coordination and cooperation.
- How to verify the rationality and feasibility of the Rules before implementation was still a problem.

02. Progress

Internal Test and evaluation stage

Main work carried out:

- **Synergy mechanism**

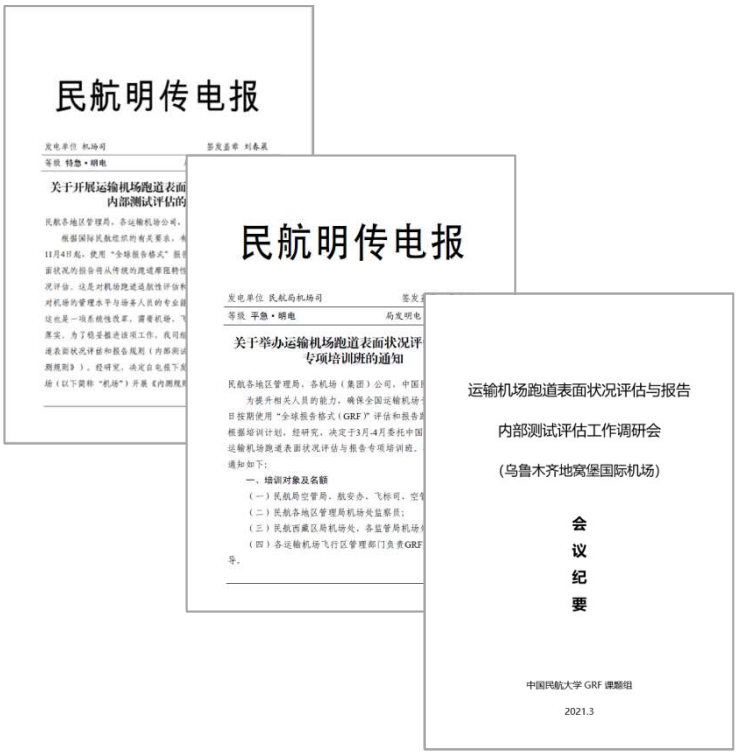
In January 2021, CAAC established a GRF promotion mechanism led by Office of Aviation Safety and supported by Department of Flight Standard, Department of Airport, Air Traffic Management Industry Administration Office and Air Traffic Management Bureau.

02. Progress

Internal Test and evaluation stage

Main work carried out：

- **Internal test and evaluation**
- Internal test and evaluation.
- Training about GRF.
- Survey and consultation.
- Summary.



02. Progress

Internal Test and evaluation stage

Main work carried out：

- **Business exchanges**

In February 2021, experts were organized to attend the fifth meeting of Working Group of Aerodrome Design and Operations Panel (ADOP/WG/5), and we made a speech entitled "Current situation and relevant Recommendations of Runway Surface Assessing and Reporting in Chinese Airports ".

02. Progress

Internal Test and evaluation stage

Main work carried out：

- **Business exchanges**

In March 2021, CAAC and FAA jointly hosted a seminar on airport Runway condition Assessing and Reporting.

Both sides had a incisive exchanges on the scope and requirements of runway surface clearance and the need to maintain clear visual aidsfor navigation on runways.

02. Progress

Internal Test and evaluation stage

Main work carried out:

- **Revising the rules**

The internal beta version of the Rules was revised and improved ulteriorly.

The Rules were issued in September 2021, and GRF was implemented nationwide on November 4, 2021 as scheduled.

The content of the runway surface condition of the CAAC Aerodromes Technical Standards has been modified to be consistent with ICAO "Annex 14 Aerodromes".

02. Progress

Internal Test and evaluation stage

Achievements achieved：

(1) Enhanced the sense of urgency of transport airports operators.

(2) Workers had been trained.

(3)Experiences and deficiencies were summarized, problems and suggestions were collected, the Rules were refined, and the foundation was laid for formal implementation of the Rules.

(4) Relevant operation standards were specified.

CONTENTS

02 / Progress

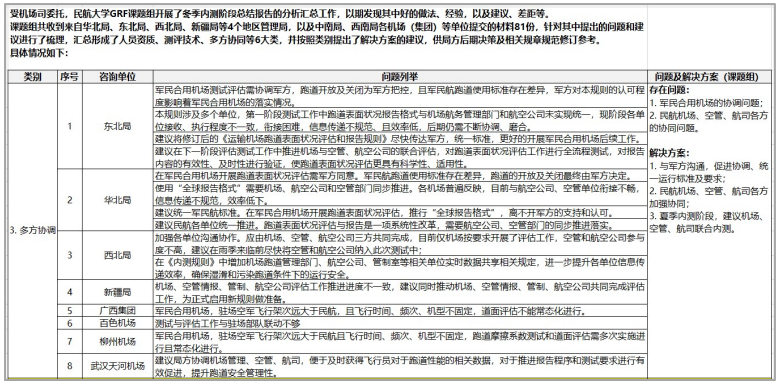
- Preliminary research stage
- Internal test and evaluation stage
- **Implementation stage**

02. Progress

Implementation stage

Major problems：

- Whether the regulations of the relevant departments of CAAC can be synchronized and coordinated.
- The Rules need to be tested more in practice.



受机场司委托，民航大学GRF课题组开展了冬季内测阶段总结报告的分析汇总工作，以期发现其中好的做法、经验，以及建议、差距等。
课题组共收到来自华北局、东北局、西北局、新疆局等4个地区管理局，以及中南局、西南局各机场（集团）等单位提交的材料81份，针对其中提出的问题和建议进行了梳理，汇总形成了人员资质、测评技术、多方协同等6大类，并按照类别提出了解决方案的建议，供局方后期决策及相关规章规范修订参考。
具体情况如下：

类别	序号	咨询单位	问题列举	问题及解决方案（课题组）
3. 多方协调	1	东北局	军民合用机场测试评估需协调军方，跑道开放及关闭为军方把控，且军民航跑道使用标准存在差异，军方对本规则的认可程度影响着军民合用机场的落实情况。 本规则涉及多个单位，第一阶段测试工作中跑道表面状况报告格式与机场航务管理部门和航空公司未实现统一，现阶段各单位接收、执行程度不一致，衔接困难，信息传递不规范、且效率低，后期仍需不断协调、磨合。 建议将修订后的《运输机场跑道表面状况评估和报告规则》尽快传达军方，统一标准，更好的开展军民合用机场后续工作。 建议在下一阶段评估测试工作中推进机场与空管、航空公司的联合评估，对跑道表面状况评估工作进行全流程测试，对报告内容的有效性、及时性进行验证，使跑道表面状况评估更具有科学性、适用性。	**存在问题：** 1. 军民合用机场的协调问题； 2. 民航机场、空管、航司各方的协同问题。 **解决方案：** 1. 与军方沟通，促进协调、统一运行标准及要求； 2. 民航机场、空管、航司各方加强协同； 3. 夏季内测阶段，建议机场、空管、航司联合内测。
	2	华北局	在军民合用机场开展跑道表面状况评估需军方同意，军民航跑道使用标准存在差异，跑道的开放及关闭最终由军方决定。 使用“全球报告格式”需要机场、航空公司和空管部门同步推进，各机场普遍反映，目前与航空公司、空管单位衔接不畅，信息传递不规范，效率低下。 建议统一军民航标准。在军民合用机场开展跑道表面状况评估，推行“全球报告格式”，离不开军方的支持和认可。 建议民航各单位统一推进。跑道表面状况评估与报告是一项系统性改革，需要航空公司、空管部门的同步推进落实。	
	3	西北局	加强各单位沟通协作。应由机场、空管、航空公司三方共同完成，目前仅机场按要求开展了评估工作，空管和航空公司参与度不高，建议在雨季来临前尽快将空管和航空公司纳入此次测试中； 在《内测规则》中增加机场跑道管理部门、航空公司、管制室等相关单位实时数据共享相关规定，进一步提升各单位信息传递效率，确保溜滑和污染跑道条件下的运行安全。	
	4	新疆局	机场、空管情报、管制、航空公司评估工作推进进度不一致，建议同时推动机场、空管情报、管制、航空公司共同完成评估工作，为正式启用新规则做准备。	
	5	广西集团	军民合用机场，驻场空军飞行架次远大于民航，且飞行时间、频次、机型不固定，道面评估不能常态化进行。	
	6	百色机场	测试与评估工作与驻场部队联动不够	
	7	柳州机场	军民合用机场，驻场空军飞行架次远大于民航且飞行时间、频次、机型不固定，跑道摩擦系数测试和道面评估需多次实施进行且常态化进行。	
	8	武汉天河机场	建议局方协调机场管理、空管、航司，便于及时获得飞行员对于跑道性能的相关数据，对于推进报告程序和测试要求进行有效促进，提升跑道安全管理性。	

02. Progress

Implementation stage

Major work:

- **Synergy mechanism**

Under the organization of the office of Aviation Safety, the Department of Airport, the Department of Flight Standard, the Air Traffic Management Industry Administration Office and the Air Traffic Management Bureau worked and cooperated with each other. When the Department of Airport was compiling regulations or procedures, relevant units were invited to work together and shared ideas, so did the other departments. Benefit from the cooperation and coordination of all units, the work was promoted.

02. Progress

Implementation stage

Major work:

- **Paraphrasing the Rules**
- Formulated and issued the definition of the provisions of the "Rules for Assessing and Reporting of Runway Surface Conditions of Transport Airports ".
- Held a publicity meeting to interchange ideas.

《运输机场跑道表面状况评估与通报规则》

宣 贯 解 读

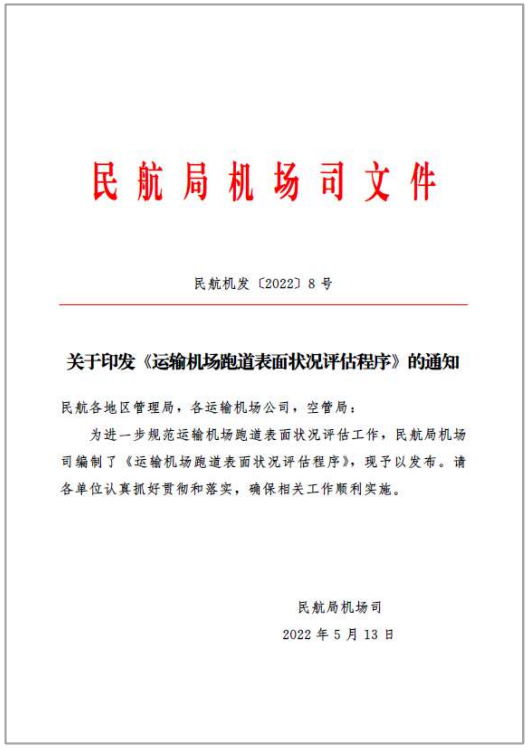
02. Progress

Implementation stage

Major work:

- **Detailed work procedures**

Compiled and issued the “ Assessing Procedures Transportation Airport Runway Surface Condition “. The content and timing of assessing and reporting for winter and non-winter operation were classified and stipulated.



民航局机场司文件

民航机发〔2022〕8号

关于印发《运输机场跑道表面状况评估程序》的通知

民航各地区管理局，各运输机场公司，空管局：

为进一步规范运输机场跑道表面状况评估工作，民航局机场司编制了《运输机场跑道表面状况评估程序》，现予以发布。请各单位认真抓好贯彻和落实，确保相关工作顺利实施。

民航局机场司

2022年5月13日

02. Progress

Implementation stage

Major work:

- **Requirement of training**

Corresponding training should be arranged to ensure the ability of personnel to meet the required standard.

02. Progress

Implementation stage

Major work:

- **Reporting work situation**

According to the requirements of ICAO Asia-Pacific Office, the Work Plan for the Assessing and Reporting of Runway Surface Conditions at Transport Airports was compiled, and the progress of GRF was continuously submitted.

02. Progress

Implementation stage

Achievements achieved：

(1) Implementing GRF nationwide on schedule, fulfilled our obligations as a state party of ICAO.

(2) Organized, formulated and issued the "Procedures for Assessing Runway Surface Conditions at Transport Airports" to clarify the specific requirements for runway surface condition assessment.

02. Progress

Implementation stage

Achievements achieved：

(3) The training program for Runway surface condition Assessing and Reporting has been launched.

(4) Organized airports and related scientific research institutions to carry out the research of the detection technology and tools for the measurement of the depth and coverage of contaminants.

CONTENTS

03. Conclusion

The following experiences：

(1) Learning from documents of ICAO, especially the operational experience of other countries,.

(2) Close coordination and integrated promotion among various departments and bureaus of CAAC is the key for the smooth implementation of GRF.

03. Conclusion

The following experiences：

(3) Always paying attention to solving the actual problems of the operating entities such as airports, air traffic control and airlines. Being sensitive to problems and take them as the starting point for the formulation of rules and procedures. At the same time, the rules and procedures should be refined to enhance the feasibility and operability.

THANKS