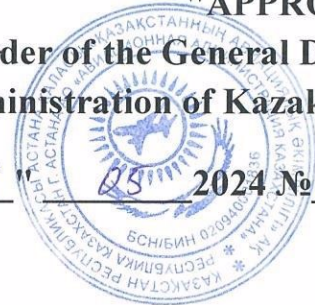




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RUNWAY SAFETY PROGRAMME
in civil aviation of the Republic of Kazakhstan

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1. General provisions

1.1 Preface

Ensuring safe runway operations is of critical importance to aerodrome operators, aircraft operators and air traffic services (ATS). The prevention of runway incursions and runway excursions should be an important part of programs and activities aimed at improving runway safety. The aerodrome operator and ATS cannot independently improve safety or effectively manage runway safety operations without coordination and cooperation with other stakeholders.

Improving runway safety is a collaborative process to develop an action plan that identifies and addresses runway safety issues by effectively identifying hazards and reducing risk. The collection, monitoring and analysis of runway safety data greatly contributes to the understanding and effective management of runway risks.

ICAO's 193 member countries are currently working towards an agreed global safety goal of zero fatalities by 2030, coupled with strengthening their regulatory capacity, while implementing a range of programs and targets relevant to current key areas of global aviation safety planning, oversight and risk mitigation.

2030 was chosen as the time frame for achieving this goal, since it is during this period that traffic volumes are projected to double. This is also the target year specified in the United Nations (UN) 2030 Agenda for Sustainable Development. To implement the strategic goal, ICAO has developed a global aviation safety plan - GASP.

GASP provides guidelines for developing a coherent aviation safety strategy and implementing industry and government safety plans.

The International Civil Aviation Organization (ICAO), through the development of GASP, the Global Aviation Safety Roadmap (GASR) and the Global Runway Safety Action Plan (GRSAP), urges States to continue their efforts to manage and control the risks associated with operations on runways at an acceptable safety level.

1.2 Purpose of the program

1.2.1 This Runway Safety Programme (hereinafter referred to as the Programme) has been developed in accordance with the Standard Instructions for Flight Safety Management for Civil Aircraft Operators, at airports, during air Traffic Services, during aircraft maintenance, aviation training centers of civil aviation, whose activities are related to the performance of aircraft flights during the provision of services. (Order of the Minister of Transport and Communications of the Republic of Kazakhstan dated March 28, 2011 No. 173) and the Program for Flight Safety in the field of Civil Aviation, (approved by Resolution of the Government of the Republic of Kazakhstan dated March

11, 2016 No. 136) for the implementation of strategic goals and relevant initiatives of the Flight Safety Plan in order to create a sustainable risk management system related to with the safety of runway operations in the Republic of Kazakhstan.

1.2.1 The objective of the Programme is to systematize the approach of the state and civil aviation organizations in managing risk factors for the safety of operations on the runway, implementing effective measures to control these risks at a level acceptable for flight safety.

1.2.2 This programme applies to civil aviation aerodromes, jointly used and based civil and state aviation aerodromes.

1.2.3 Runway safety generally covers the following range of issues and ICAO event categories:

- Runway incursion;
- Runway excursion;
- collision on the ground (when an aircraft is taxiing to the runway from the runway on the maneuvering area);
- abnormal landing;
- ground handling;
- loss of ground control (eg due to runway or taxiway contaminants);
- collision with an obstacle(s) (during takeoff and landing of an aircraft in the air);
- undershoot/overshoot (touching the ground outside the runway in the immediate vicinity during the landing stage);
- other risks associated with the operation of the aerodrome.

From the above list, events that are characterized by high risks include aircraft runway incursion and runway excursion. Reducing the risks associated with these events is a strategic goal of the Kazakhstan Aviation Safety Plan and is the subject of this programme.

1.2.4 Effective management of runway safety risks requires a comprehensive analysis and development of flight safety measures through joint coordinated activities from:

- aerodrome operators;
- aircraft operators;
- air navigation service providers;
- authorized bodies/organizations in the field of civil aviation.

1.2.5 The authorized organization in the field of civil aviation ensures the development and periodic revision of this Programme, taking into account changes and additions to ICAO standards and recommended practices, as well as best global practices.

1.2.6 All proposals to make changes or additions to this Programme are sent officially to the authorized organization.

1.3 Terms and abbreviations

Runway Safety	a condition in which the risks associated with the operation of aircraft on runways are reduced and controlled to an acceptable level.
Runway excursion	includes all events associated with actual or potential situations in which an aircraft leaves the runway or aerodrome operating area or the landing surface of any other pre-designated landing area without becoming airborne.
Runway incursion	covers any incident at an aerodrome involving the improper presence of an aircraft, vehicle or person on a protected surface area intended for the landing and take-off of aircraft.
Civil Aviation Organization	a legal entity operating in the field of civil aviation.
Air navigation service provider	a legal entity providing air traffic management and (or) other air navigation services.
Authorized organization in the field of civil aviation	a joint-stock company with 100% state participation in the authorized capital, carrying out activities aimed at ensuring the sustainable development of the civil aviation industry of the Republic of Kazakhstan, flight safety and aviation security (JSC Aviation Administration of Kazakhstan).
Aerodrome (heliport) operator	an individual or legal entity of the Republic of Kazakhstan, as well as another state in accordance with international treaties ratified by the Republic of Kazakhstan, which uses an airfield (heliport).

Aircraft operator	an individual or legal entity engaged in the operation of civil aircraft or offering its services in this field
HotSpot	an area on the airfield movement area where collisions or runway incursions have already occurred or where there is a potential risk of such occurrences and where increased attention of pilots/drivers is required.
RWY	runway
ICAO	International Civil Aviation Organization
ATS	air traffic management
TWY	taxiway
RFFS	rescue fire fighting service
SMS	safety management system
ESTOP	electrical lighting support for flights
ERTOS	operation of radio equipment and communications
ELoS	equivalent level of flight safety.
NRSG	National runway safety group
LRST	Local runway safety team

1.4 Regulations

This program was developed using the following regulatory documents:

- DOC 9981, Procedures for Air Navigation Services. Aerodromes
- Runway Safety Program – Global Runway Safety Action Plan, ICAO first ed. 2017;
- Global Action Plan for the Prevention of Runway Excursions, Eurocontrol 2021;
- Runway Safety Team Handbook, ICAO 2015;
- ICAO Doc 9870 – Manual on the Prevention of Runway Incursions;
- FAA Order 7050.1B, Runway Safety Program, dated July 11, 2013;
- FAA National Runway Safety Plan 2024-2026;
- ICAO Annex 19 - Safety Management and ICAO Doc 9859 - Safety Management Manual;

– Standard instructions on flight safety management for civil aircraft operators, at airports, during air traffic maintenance, during aircraft maintenance, aviation training centers of civil aviation, whose activities are related to aircraft flights during the provision of services (Order No. 173 of the Minister of Transport and Communications of the Republic of Kazakhstan dated March 28, 2011).

2. Roles and responsibilities

2.1 Authorized organization in the field of civil aviation

2.1.1 The authorized organization in the field of civil aviation, in accordance with the requirements of this Programme, performs the following functions:

- development, approval and periodic review, amendments to the Programme to keep it up to date;
- development, approval, periodic review, and amendments to the plan to ensure the safety of operations on runways of civil aviation of the Republic of Kazakhstan;
- approval of the composition of the members of the working group on runway safety in civil aviation of the Republic of Kazakhstan;
- development and approval of runway safety checklists for certification and inspection of aircraft operators, air navigation service providers, and airfield operators;
- conducting an analysis of the effectiveness of the Programme and plan to ensure the safety of runway operations of civil aviation of the Republic of Kazakhstan;
- maintaining a general database of risks and hazardous factors associated with the performance of runway operations at aerodromes of the Republic of Kazakhstan;
- systematizes and summarizes the results of the runway operations safety teams in order to implement best practices.

2.1.1. The implementation by civil aviation organizations of the provisions of this Programme is subject of control by the authorized organization in the field of civil aviation.

2.2. National Runway Safety Group of Civil Aviation of the Republic of Kazakhstan (National Runway Safety Group-NRSG)

2.2.1 To coordinate activities to improve the safety of runway operations and implement the provisions of this Program and to improve it, a working group on the safety of runway operations of civil aviation of the Republic of Kazakhstan (NRSG) is being created.

2.2.2 NRSG determines strategic directions for improving runway safety, makes proposals for the development of initiatives and activities of a plan to ensure runway

safety for civil aviation of the Republic of Kazakhstan, monitors the effectiveness of the implementation of initiatives and activities, assists in the creation and improvement of the efficiency of local runway safety groups (LRST) at aerodromes of the Republic of Kazakhstan.

2.2.3 The NRSG is created by order of the authorized organization in the field of civil aviation and includes in the working group specialists in the field of flight operations, air navigation and aerodrome operations, who are employees of the authorized organization in the field of civil aviation, representatives of the civil and state aviation industry, specialists in various fields as agreed.

2.2.4 The frequency of NRSG meetings is established and the schedule is published on the official website of the authorized organization in the field of civil aviation, with meetings held at least once a year.

2.2.5 The main objectives of the NRSG are:

- comprehensive study of problems and development of comprehensive protective measures related to the performance of operations on the runways of airfields of the Republic of Kazakhstan;
- making proposals for plan activities to ensure the safety of operations on runways of civil aviation of the Republic of Kazakhstan;
- performing advisory and coordinating functions to promote the creation and increase the effectiveness of LRST;
- providing expert opinion or expertise on runway safety issues;
- consideration of equivalent level of safety (ELOs) in the presence of deviations from the requirements of the Legislation of the Republic of Kazakhstan in the field of civil aviation that affect the safety of operations on the runway.

2.2.6 To perform its main tasks, the NRSG performs the following functions:

- determination of the profile of the main risks associated with the safety of operations on the runway;
- identifying hazards through data collection and analysis;
- implementation of key standards and recommended practices aimed at improving safety and meeting the risk profile by developing a plan to ensure the safety of runway operations for civil aviation of the Republic of Kazakhstan;

- monitoring the progress of the civil aviation industry in implementing the plan to ensure the safety of operations on runways of civil aviation of the Republic of Kazakhstan;
- conducting performance assessments of LRSTs and providing advice on improving their performance;
- studying and solving flight safety problems of a private and general nature for runways at airports in the Republic of Kazakhstan;
- making proposals for changes to the regulations of the Republic of Kazakhstan in the field of civil aviation in terms of requirements ensuring the safety of operations on the runway;
- comprehensive and comprehensive review of the EUPP submitted by civil aviation organizations.

2.3 Local Runway Safety Team (LRST)

Note. Instructional material on organizing LRST activities is given in Appendix B to this Program.

2.3.1 By order of the responsible manager of the aerodrome operator, local runway safety teams (LRSTs) must be created at all certified aerodromes.

2.3.2 The aerodrome operator is the responsible organization for coordinating LRST activities. The aerodrome operator has primary responsibility for the runway safety plan and ensures that the plan is an effective tool in the aerodrome safety management system accordingly.

2.3.3 As a minimum, the Runway Safety Team (RST) must perform the following tasks within its terms of reference:

- analyze safety data regarding the number, type and, if possible, severity of runway incursions;
- review the results of investigation reports to identify local hazards and problem areas at the aerodrome;
- Encourage staff working in related areas to better understand operational challenges and suggest areas for improvement;
- ensure the implementation of recommendations regarding the prevention of runway incursions;
- identify any local problem areas and propose necessary solutions;
- Conduct campaigns to raise awareness of runway safety issues with a focus on local tasks, such as the production and distribution of local hazard maps or other guidance material as deemed necessary;

- Regularly review runway and aerodrome operations to proactively identify any situation that may increase the risk of the safe use of the runway.

2.3.4 LRST consists of experienced specialists from the following industry groups:

- representatives of the aerodrome service, ESTOP, RFF services, flight safety inspection of the aerodrome operator;
 - air traffic controllers, air navigation service provider ERTOS;
- Flight crew representatives familiar with commercial air carrier airport operations;
- members of the general aviation community (if applicable).

Representatives of the following organizations can be involved in the LRST either on a permanent or ad hoc basis:

- representatives of the authorized organization;
- State aviation representatives (if applicable, based on co-location at the airfield or other military functions);
- representatives of ground service providers (anti-icing, ground handling, catering, etc.);
- representatives of government emergency services;
- experts in the relevant field (meteorologists, ornithologists, accident investigation authorities, etc.) (by invitation); And
- Consideration may be given to periodically inviting members of other LRSTs to share experiences on similar issues.

2.3.5 The primary role of the LRST should be to develop a plan of action to ensure runway safety. This action plan should, at a minimum, assist in assessing the hazards and safety risks of runway operations and recommend measures to eliminate hazards and reduce risks. Such measures can be developed based on local incident data or information obtained from external databases.

2.3.6 The LRST must inform the management and operational personnel of relevant operators and service providers of prevailing local conditions, hazardous areas on runways, taxiways and adjacent areas. The LRST must advise management as appropriate on potential runway safety issues and recommend hazard elimination and risk management strategies.

2.3.7 LRST activities are based on the principles of safety risk management, which includes hazard identification, safety risk assessment, safety risk mitigation and risk acceptance.

2.3.8 LRSTs should have processes in place to obtain risk assessment results from team members, as the safety management systems (SMS) of the organizations involved may differ and so will the safety risk assessment processes.

2.3.9 LRST examines potential threats and aviation incident investigation reports to identify problem areas at the aerodrome to develop protective measures.

2.3.10 LRST conducts campaigns to raise awareness of runway safety among service personnel involved in the organization. Outreach activities focus on local issues. An example of such activities is the compilation and distribution of maps of local hot spots (HotSpot), visual materials in the form of posters, newsletters, etc.

2.3.11 The LRST, with the participation of all team members, periodically inspects the movement area to identify hazards that may pose risks to the safety of runway operations.

2.3.12 LRST implements at the aerodrome a local plan of measures to ensure the safety of runway operations, developed by identifying hazardous factors and assessing the risk of a violation of the safety of operations and based on a plan to ensure the safety of runway operations in civil aviation of the Republic of Kazakhstan.

2.3.13 LRST provides on a semi-annual basis a report on the implementation of the local action plan to ensure runway safety to the authorized organization in the field of civil aviation.

2.3.14 The LRST approves a schedule of meetings and meetings depending on the aerodrome situation and potential threats, but at least twice a year.

3. Plan to ensure the safety of operations on runways of civil aviation of the Republic of Kazakhstan

3.1 The purpose of the plan to ensure the safety of runway operations of civil aviation of the Republic of Kazakhstan is to provide the civil aviation industry of the Republic of Kazakhstan with measures aimed at improving the safety of runway operations.

3.2 A plan to ensure the safety of runway operations for civil aviation of the Republic of Kazakhstan is being developed by the NRSG. Before approval, the plan to ensure the safety of runway operations of civil aviation of the Republic of Kazakhstan is sent for consideration to the involved civil aviation organizations.

3.3 The plan for ensuring the safety of runway operations of civil aviation of the Republic of Kazakhstan defines tasks and measures aimed at improving the safety of runway operations.

3.4 In addition to the measures, the plan for ensuring the safety of operations on runways of civil aviation of the Republic of Kazakhstan contains the following information:

- organizations, structural units responsible for the implementation of plan activities;
- timing of activities and established priorities;
- if necessary, instructional material describing the procedure for performing specific activities.

3.7 Civil aviation organizations carry out local plan measures to ensure the safety of operations on the runway, track implementation deadlines, and also provide reports on the implementation of measures to the authorized organization with the relevant evidentiary documentation attached.

3.8 Based on the plan to ensure the safety of runway operations of civil aviation of the Republic of Kazakhstan, civil aviation organizations are developing their own plans for their implementation, taking into account the applicability of the initiatives.

4. Local plan to ensure runway safety

4.1 Airport operators, within a period of up to 3 months from the date of approval of the plan for ensuring the safety of runway operations of civil aviation of the Republic of Kazakhstan or amendments to it, submit for consideration an approved local plan for ensuring the safety of operations on the runway.

4.2 Local plans are developed on the basis of identifying hazardous factors and assessing the risk of violating the safety of operations and measures of the plan to ensure the safety of operations on the runways of civil aviation of the Republic of Kazakhstan. In this case, the measures must be applicable taking into account the physical characteristics of the aerodrome, equipment, flight intensity, etc.

4.3 Local plans are submitted for consideration to the authorized organization in the field of civil aviation.

4.4 In addition to activities, the local plan must contain the following information:

- Organization, official responsible for implementation.
- resources (human, financial) necessary to complete the task.

- source(s) of financing, for example: investments, own funds, borrowed funds, etc.
- deadlines for the activities:
- indicators for assessing the implementation and effectiveness of the event.

4.5 Reports on the implementation of local plans are submitted to the authorized organization in the field of civil aviation on a semi-annual basis.

Appendix A - Guidance material for organizing Local Runway Safety Teams (LRST) at aerodromes

1. Introduction

ICAO Assembly Resolution A37-6 calls on States to improve runway safety. ICAO encourages and supports the creation and improvement of multidisciplinary runway safety teams at aerodromes.

Local LRST Runway Safety Teams have proven highly effective in reducing the risk of runway excursions and incursions, providing a collaborative solution that has positive input from civil aviation authorities, air navigation service providers, aircraft operators and airfield operators. Establishing an LRST to prevent and mitigate runway incidents is an important element of a runway safety program. Establishing an aerodrome LRST is key to developing and implementing an effective runway safety action plan and recommending strategies to eliminate hazards and reduce residual risks.

2. The purpose of creating an LRST at the airfield

The purpose of establishing an aerodrome LRST is to effectively inform the management and operational personnel of relevant operators and service providers about the prevailing local conditions on the runway, taxiway and surrounding areas, other issues of concern and the development of risk management measures at an acceptable level for safety.

The LRST must implement a runway safety action plan, advise management as appropriate on potential runway safety issues, and recommend strategies to eliminate hazards and reduce residual risk. These strategies can be developed based on data collected at the aerodrome in combination with information obtained from other sources.

LRST is not a regulatory authority and is not intended to replace any required component of an SMS, but is intended to enhance and support the safety of runway operations by integrating the safety systems of participating organizations (stakeholders). Interfacing service providers must document the interface between their own SMS and the LRST activities. It is important to keep in mind that each participating organization is responsible for identifying and managing any hazards affecting that organization. The importance of the interface may vary for each organization. Each organization may reasonably apply different classifications of safety risks and assign different priorities to them (in terms of safety performance, resources, time, etc.).

The LRST meeting schedule depends on the situation and airfield conditions. For example, if major construction work is planned or the number of hazards and incidents increases, the LRST may need to hold more meetings.

LRST activities are based on the principles of a formal hazard identification and risk management process in accordance with ICAO Annex 19 - Safety Management and ICAO Doc 9859 - Safety Management Manual. The LRST should be able to obtain risk assessment information from team members as most will have their own SMS with different risk assessment processes.

LRSTs cover a wide range of issues related to runway safety, including, but not limited to, the categories listed in paragraph 1.2.3 of this Program.

3. Terms of Reference for the Runway Safety Team

“Regulations on the runway safety group” (hereinafter referred to as the Regulations) An LRST is a document that establishes the status, functions, rights, duties and responsibilities of the members of a working group, as well as a set of procedural rules governing the activities of the LRST.

LRST provisions should, at a minimum, cover the following issues:

- the purpose, scope and frequency of LRST meetings;
- processes for selecting working group members;
- individual roles and responsibilities of individual team members;
- processes and formal agreements governing the exchange of safety data, safety reports and safety information, and the protection of sources of information exchanged under LRST (protection from misuse and protection from disclosure);
- processes of consultation, decision-making and conflict resolution;
- documentation and reporting requirements;
- monitoring runway incidents by type, severity and frequency;
- regular inspections of the aerodrome to ensure its compliance with the requirements of ICAO standards and recommended practices;
- ensuring the implementation of local plan measures for runway safety;
- identification of hazards, local problems, specific places where risks exist (for example, HotSpot);
- engaging safety experts from industry and service providers;
- active development of solutions to flight safety problems at the airfield;
- development of local plans to ensure safety of runway operations;
- studying investigation reports of aviation events related to runway safety operations at other aerodromes and applying recommendations based on their results.
- disseminating information about decisions made by LRST to stakeholders;
- Implementing a comprehensive safety awareness campaign to ensure that employees of all stakeholders are aware of runway safety issues. Such activities may include the preparation and distribution of local hot spot maps, posters aimed at illustrating work area traffic rules, development of instructional materials, and more.

4. Continuous improvement

All team members must monitor LRST performance for areas in need of improvement and/or failure to meet the conditions set out in the LRST Regulations.

The LRST Chairman plans and organizes internal reviews of LRST's performance. Internal reviews are conducted at least once every six months during scheduled meetings to discuss each item on the checklist contained in Appendix B to this document. The results of the inspection and the completed checklist are stored for at least two years.

External audits of LRST activities are carried out by third parties, for example, an authorized organization, airlines and other organizations (for example, within the framework of APEX, etc.)

The results of the audits are recorded and stored as part of the safety data library for the period described in the aerodrome operator's SPR.

5. Organizational structure of LRST

The organizational structure required for an LRST depends on the number of participating members, their ability to interact and cooperate, the size of the airport, traffic intensity, type of operations, complexity of the aerodrome, and any other local requirements. In any case, the main initiator and chairman is usually the aerodrome operator.

5.1 Chairmanship of LRST

The chairman acts as the coordinator and representative of the group. The appointment of the chairman may be done on a rotating basis among all members of the LRST.

The roles and responsibilities of the designated chair may also include various administrative and/or organizational aspects, such as:

a) Scheduling meetings

The chairman draws up a schedule of meetings and agrees on their location. He/she collects information from participants several weeks before the meeting and distributes the meeting program one week before the meeting date. Guidance for planning meetings is included in Annex D to this document.

b) Carrying out meetings

The Chair ensures that meetings are conducted in a collaborative manner and in accordance with the processes of the LRST Regulations. He/she continually strives to improve the group's performance by regularly participating in continuous improvement activities.

c) Maintenance of safety data

The Chair ensures that LRST activities are properly documented and stored.

d) Coordination with third parties

The Chair acts as a point of contact with external agencies and ensures that all LRST activities are properly communicated to the appropriate agencies/organizations.

5.2 Role of LRST members

a) Planning meetings

LRST members submit issues of concern for discussion at the meeting in advance and no later than the date requested by the Chair. Each participant speaking at the meeting should prepare information material and invite subject matter experts, if necessary, so that other participants have a better understanding of the issue they want to discuss. Meeting participants should tour the airfield immediately prior to the meeting to familiarize themselves with the current situation and identify potential security threats.

Note. — *Consideration should be given to inspecting the airfield at different times of day and under different weather conditions to identify hazards specific to specific times of day and adverse weather conditions. The inspection is intended to identify safety issues only and should not cause disruption to the ongoing operations of the aerodrome.*

b) Participation in meeting

LRST members will openly exchange information and strive to reach an agreed solution based on the results of the discussion. They must continually strive to improve the program by participating in continuous improvement activities.

c) Contribution to the safety database

Working group members must provide the LRST with safety data and analysis, reports and information from their own organization's SMS or other safety-related sources.

d) Coordination with participating organizations

LRST members must communicate LRST findings and decisions within their respective organizations and ensure that recommendations are properly implemented.

5.3 Role of the authorized organization

LRST activities are carried out within the framework of the aerodrome operator's existing SMS, which coordinates safety issues on the part of all users of the aerodrome. Although their participation is considered optional, ICAO encourages competent authority/organization professionals to attend LRST meetings to provide legal advice, exchange information, and understand current hazards and risks associated with local

operations. In addition, it is easier for authorized bodies/organizations to establish interaction with other government agencies (for example, with local executive bodies) on behalf of LRST, when necessary.

6. LRST Technical Processes

6.1 Hazards and associated consequences

Once group members have been identified, a chairperson has been selected, and regulations and work schedules have been agreed upon, the work of identifying hazards begins. It is expected that each team member will be prepared to meet to briefly present the runway safety hazards that have been identified within their respective SMS or other safety related systems (primarily as a result of the development activities). safety reports, investigations and audits).

In addition to the above, the LRST should also conduct periodic visits to various airport locations (e.g., air traffic control towers, construction sites, taxiway intersections, etc.) and, as necessary, request information from third parties not officially represented by the LRST. These may include service providers, contractors, flight schools, industry organizations, ground crews and others. By reaching a wide range of individuals and organizations, LRST will be able to gain a deeper understanding of the operational complexity associated with the airport environment, leading to better identification of hazards and operational risks.

When LRST members discuss the acceptability of a safety risk, it is important to remember that the degrees of likelihood and severity should be presented in terms of realistic operational scenarios, rather than in terms of very serious but extremely remote and unlikely consequences.

A useful technique is to identify the hazard (general hazard) and then list the specific hazards associated with it and their associated consequences. For example, a general hazard category might be “construction of airfield elements.” Specific hazards associated with airport construction activities may include “presence of construction equipment” and “taxiway closures.” This in turn may be assessed by LRST as “aircraft collision with construction equipment” and “aircraft entering a closed taxiway” as potential consequences of these specific hazards. By correctly identifying, documenting a hazard, and defining its associated consequences in operational terms, the LRST is able to assess the safety risk.

Sometimes hazardous conditions can combine to increase the likelihood and severity even further. For example, the hazards associated with the construction of an airfield element combined with the hazards of poor visibility and night work may result in a

greater risk than simply constructing an airport (in which situation the probability of risk would likely be increased).

6.2 Risk assessment

The purpose of conducting a safety risk assessment is to provide LRSTs with a method to appropriately manage the risks of identified hazards, develop effective risk mitigation strategies, and prioritize their work process. Given that time and financial resources are limited, the following process allows the LRST to effectively determine which areas require its immediate attention in order to reduce the risk to runway safety operations to the lowest level practicable.

The process for assessing and managing runway safety risks should be consistent with the provisions set out in ICAO Doc 9859, Manual of Safety Management. Once hazards have been identified by the LRST, it is the aerodrome operator's job to determine the severity of the safety risk in the context of the local system, taking into account the protection and mitigation controls currently in place. This information should then be used to classify the severity of the safety risk using predefined guidance in ICAO Doc 9859.

Based on the event that would have the worst consequences, the next step is to estimate the relative likelihood of that event occurring in a particular operating environment, after taking into account existing defenses and risk mitigation strategies. The team should consult relevant safety and hazard reporting databases, incident and accident investigation reports, flight data monitoring and analysis, operational audit data and other historical sources to determine the likelihood of the identified consequences occurring.

The final step in the assessment process is to ensure that the resulting level of safety risk is acceptable.

One of the advantages of using LRST to conduct a risk assessment is that all stakeholders were involved in the risk assessment process, ensuring that the worst-case outcome and associated probability were assessed.

6.3 Development of recommendations and action plan

Following a safety risk assessment, the LRST must develop specific recommendations to reduce the risk and an action plan to ensure implementation of the recommendations. The following concepts should be taken into account:

1) *Prioritization*

LRSTs must ensure that their decisions are prioritized according to the “safety risk tolerance” assessment. For example, if they determine that “operation can continue” given the assessed level of safety risk, their recommendations should reflect a strategy in which improvements are implemented as resources become available. Conversely, if they determine that “the operation can proceed only with measures to reduce the risks of the consequences occurring,” their recommendations should reflect a strategy requiring immediate action to eliminate the consequences of the hazard. At the same time, the time frame for performing actions must be commensurate with the corresponding risk levels.

2) Control strategies

Security risk is controlled by considering either:

1. the likelihood of consequences;
2. level of severity of consequences; or
3. both at the same time.

Safety risk mitigation measures are actions that often result in changes to operational procedures, equipment or infrastructure. Safety risk mitigation strategies fall into three categories:

a) Risk avoidance: An operation or activity is canceled or not carried out because the safety risk outweighs the benefits of continuing the activity, and the safety risk is thereby eliminated.

b) Risk reduction: The frequency of an operation or activity is reduced or measures are taken to reduce the impact of the associated safety risk.

c) Isolation: Measures are taken to isolate the effects of the risk or build up reserve capacity to protect against these effects.

3) Evaluation of alternative solutions

During this process, the LRST should explore several safety risk control strategies. These strategies must be evaluated against each other to find the most effective and efficient solution using objective and subjective measures. These measures may include criteria such as conducting a cost-benefit analysis, determining the feasibility of the proposal, assessing acceptability to stakeholders, and others. However, in all cases, the LRST must conduct a risk assessment of the proposed solution and assess any potential hazards posed by their strategy.

However, just because a solution is easy to implement, cost-effective, and acceptable to all stakeholders does not mean it will reduce risk. The effectiveness of a strategy in reducing risk is assessed by the residual or remaining risk after the strategy has been put in place. The risk assessment must determine whether the remaining (residual) risk is acceptable or whether additional solutions and risk mitigation measures are required.

d) Notification of interested parties

If the LRST determines that either a mitigation strategy is required or that part of the operation must be changed or suspended, it must make a formal recommendation to the organization responsible for that part of the operation and include a justification and risk assessment.

The outcome of the entire process is a master register of identified hazards, ongoing control and protection measures, risk analysis and results, additional control and mitigation measures, an implementation action plan and residual risk. Appendix C to this document contains Form D **documenting runway safety management processes**, which can serve as a tool for recording hazards and associated processes.

6.4 Record keeping - data exchange

Proper and structured record keeping of observed and identified hazards, safety events and corrective actions allows for trend analysis. The LRST shall designate a person responsible for maintaining the database and may provide reports and analyzes upon request by LRST members.

Sharing and exchanging data among team members increases the efficiency of LRST. It is recommended that LRSTs from different airports develop an agreement that allows data to be shared across different locations and supports teams in identifying appropriate runway safety risk management strategies.

Appendix B - Checklist for internal audit of the effectiveness of the local working group on runway safety - LRST

Paragraph	Question	Answer	Proof
1. Terms of Reference for the Runway Safety Team			
1.1	Has the authority of the Runway Safety Team (LRST) been approved?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
1.2	Does the position define the scope of the LRST?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
1.3	Does position define roles for LRST members?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
1.4	Does the regulation govern the processing of data/reports received from participating organizations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
1.5	Does the provision describe the decision-making process that must be used by the LRST?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
1.6	Does the provision specify a process for resolving disagreements among LRST members?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Hazard identification			
2.1	Does the LRST have a formal system for collecting and processing safety data to document operational hazards?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2.2	Do all LRST members contribute to the formal safety data system by sharing information about identified operational hazards?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2.3	Does the LRST identify and document the specific consequences of operational hazards?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Safety risk management			

3.1	Does LRST have a formal operational risk management process?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.2	Does the risk management process evaluate the consequences of operational hazards in terms of their likelihood and severity?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.3	Is there a formalized process for determining the level of risk an LRST is willing to accept?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.4	Does LRST develop risk mitigation strategies to control the level of risk in the operating environment?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.5	Is there a formalized process for preparing LRST recommendations to relevant stakeholders?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.6	Is there a formalized process for documenting decisions made by the LRST in the risk management process?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.7	Are decisions made by the LRST periodically reviewed to determine whether the desired effect of the mitigation/recommendations has been achieved?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4. Communication			
4.1	Does LRST have a formal process for engaging with relevant stakeholders?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.2	Does LRST periodically provide runway safety materials to key personnel?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.3	Does the LRST participate in information sharing activities with other LRSTs?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.4	Does LRST request safety-related information from all airport users?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

5. Continuous improvement			
5.1	Does LRST have a formal process for continuous improvement of its business processes?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5.2	Does LRST periodically review work group composition, work group regulations, and action plans to ensure improved runway safety?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5.3	Are the results of the continuous improvement program documented?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Appendix C - Runway Safety Management Process Documentation Form

Runway Safety Assessment Form					
Link:	Start date:	Date of completion:			
general information					
Airport:	Which areas are affected:	<input type="checkbox"/> Runway	<input type="checkbox"/> Taxiway	<input type="checkbox"/> Apron	<input type="checkbox"/> All
Specific ID (Runway/Taxiway ID):					
Description of the safety issue					
Security Risk Type:	<input type="checkbox"/> Overrunning the runway <input type="checkbox"/> Abnormal landing	<input type="checkbox"/> Runway incursion - Airplane <input type="checkbox"/> Runway incursion – Ground vehicle	<input type="checkbox"/> Strike with wild animals <input type="checkbox"/> Bird strike	<input type="checkbox"/> Landing and takeoff from an undesignated runway <input type="checkbox"/> Other (Specify)	
Has an incident occurred or is this a hazard (potential outcome):		<input type="checkbox"/> Result (The incident occurred) <input type="checkbox"/> Potential Outcome (No incident occurred)		Date of incident:	
Description of actual or potential outcome					
Confirmation document:	<input type="checkbox"/> Case Report	<input type="checkbox"/> Incident Report	<input type="checkbox"/> Audit report	<input type="checkbox"/> Other (Specify.)	
Security issues					
<input type="checkbox"/> Navigation Aids	<input type="checkbox"/> Runway/Taxiway Markings	<input type="checkbox"/> PAPI	<input type="checkbox"/> Communication	<input type="checkbox"/> Meteo	<input type="checkbox"/> Obstacles
<input type="checkbox"/> Runway/Taxiway Lights	<input type="checkbox"/> Approach lights	<input type="checkbox"/> Runway/Taxiway Lights	<input type="checkbox"/> Procedures	<input type="checkbox"/> Unstabilized approach	<input type="checkbox"/> Runway surface condition
<input type="checkbox"/> other	<input type="checkbox"/> Construction works				
<p><i>Once you have completed identifying security issues, please submit the form to register this report.</i></p> <p><i>During a runway safety team meeting, you should consider each report as an agenda item.</i></p> <p><i>The following sections are provided as a tool for managing meeting outcomes.</i></p>					
Risk assessment					
(The risk assessment must be completed as part of the runway safety team meeting)					
What is the severity of the risk:	<input type="checkbox"/> Catastrophic	<input type="checkbox"/> Dangerous	<input type="checkbox"/> Means.	<input type="checkbox"/> Minor	<input type="checkbox"/> Insignificant.
What is the probability of occurrence:	<input type="checkbox"/> Often	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Very rare	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Highly unlikely
Risk level (from the lower risk table)	<input type="checkbox"/> Invalid	<input type="checkbox"/> Acceptable	<input type="checkbox"/> Acceptable		
If the risk is unacceptable and acceptable, a corrective action plan is required					

<i>Риск для безопасности полетов</i>		<i>Серьезность риска</i>				
		<i>Катастрофическая А</i>	<i>Опасная В</i>	<i>Значительная С</i>	<i>Незначительная D</i>	<i>Ничтожная E</i>
<i>Вероятность</i>						
Часто	5	5A	5B	5C	5D	5E
Иногда	4	4A	4B	4C	4D	4E
Весьма редко	3	3A	3B	3C	3D	3E
Маловероятно	2	2A	2B	2C	2D	2E
Крайне маловероятно	1	1A	1B	1C	1D	1E

Corrective Action Plan

(The corrective action plan is based on recommendations from the runway safety team and must be completed as part of a runway safety team meeting)

Description of action plan:

Description of the action element:

Executing: Date of implementation: Status:

Description of action plan:

Description of the action element:

Executing: Date of implementation: Status:

Appendix D- Tool for planning meetings of the working group on runway safety operations"

1. Planning a meeting

- a) date
- b) time
- c) location

2. Determine your invitees

- airfield operators;
- air traffic services authorities;
- commercial air carriers;
- representatives of the flight personnel familiar with the airfield;
- general aviation representatives (if applicable);
- technical experts from air traffic controllers' associations; And
- technical experts from pilots' associations.

The team may also include:

- authorized organization;
- government aviation representatives (if applicable, based on airport sharing or other military functions);
- support services (anti-icing, catering, ground handling, etc.);
- emergency response service providers;
- experts in the relevant field (meteorologists, ornithologists, accident investigation authorities, etc.) (by invitation); And
- Consideration may be given to periodically inviting members of other LRSTs to facilitate information exchange and training.

3. Plan topics to discuss

- a) Three weeks before the date of the meeting:
 - notify interested parties of the date, time and location of the meeting;
 - ask for opinions on agenda items from each participant.
- b) Two weeks before the date of the meeting:
 - schedule an inspection of the airfield (as necessary);
 - send the preliminary agenda to the working group members.
- c) One week before the date of the meeting:
 - summarize updates and information received from participants;
 - Distribute the final agenda and supporting documents to the working group members.

4. Organizing a meeting

- a) confirm the presence of participants;
- b) plan a conference room appropriate to the size and requirements of the LRST;
- c) coordinate the departure to the airfield with the airport management, tower, etc., including the availability of a vehicle and an accompanying person.

Appendix E - Program of meetings of the working group on runway safety

1. Planning a meeting

- a) date
- b) time
- c) location

2. List of invited persons

- airfield operators;
- air traffic services authorities;
- commercial air carriers;
- representatives of the flight personnel familiar with the airfield;
- general aviation representatives (if applicable);
- technical experts from air traffic controllers' associations; And
- technical experts from pilots' associations.

The team may also include:

- authorized organization;
- government aviation representatives (if applicable, based on airport sharing or other military functions);
- support services (anti-icing, catering, ground handling, etc.);
- emergency response service providers;
- experts in the relevant field (meteorologists, ornithologists, accident investigation authorities, etc.) (by invitation); And
- Consideration may be given to periodically inviting members of other LRSTs to facilitate information exchange and training.

3. Previous meeting agenda

[View the execution status of previous protocol decision activities and update the database accordingly]

4. New meeting agenda

[Participants present new projects, hazards or events identified within their safety management systems. The team then: (a) identifies hazards, (b) conducts a safety risk assessment, and (c) makes recommendations for safety risk management].

5. Registration of results

[Documentary findings and action plan]

6. Next group meeting

[Agree on the date, time and place of the next meeting]

Note.—*The purpose of an airfield inspection and field visit is to identify existing and new hazards and to observe corrective actions that have been taken based on previous findings.*

Appendix F - ICAO Runway Safety Toolkit

The ICAO Runway Safety Toolkit is designed to achieve three main objectives:

1. Raise the level of awareness of all participants about the dangers that accompany unauthorized runway activities;
2. identify the most common hazards and describe why they occur; And
3. provide practical solutions and best operating practices that will improve runway safety.

To best achieve these goals, the toolkit is organized according to user interests. Some sections are intended for all users, as is much of the supplementary material. Most of the core content is presented in functional area sections as follows:

1. Air traffic control;
2. flight operations;
3. airfields and ground facilities;
4. management responsibilities.

The Air Traffic Control section contains information relevant to air and ground controllers responsible for the movement of aircraft. “Flight Operations” applies to pilots of aircraft of all types and sizes. The Aerodromes and Ground Facilities section is intended primarily for ground vehicle operators, but is applicable to all airfield users. The final category, “management responsibilities,” provides information for those who are able to make decisions above the day-to-day operating level. Each of these functional areas includes a quiz section that allows users to test their knowledge upon completion of the training.

In addition, a large amount of additional information is included in the toolkit. The glossary defines terms related to runway safety, and the appendix contains ICAO provisions on runway safety. The Links section contains information about websites and reference materials related to runway safety. The poster section contains sample runway prevention posters that can be downloaded for printing and display. It also includes videos produced by various countries. The seminar section is a selection of selected presentations from previous ICAO-sponsored runway safety conferences.

Finally, Human Factors considerations were incorporated into the discussions and decisions presented in the Manual. Thus, the emphasis will be on human actions rather than on technical means of protection.

The manual can be downloaded from the ICAO website at: <https://www.icao.int/safety/RunwaySafety/Pages/RnwyTlkt.aspx>