# TABLE OF CONTENTS

Overview ................................................................................................................ 2

Quick Guide............................................................................................................ 7

How to Register and setup the system ................................................................. 8

Forgot your password? ......................................................................................... 11

Logon .................................................................................................................... 12

Update Company Registration ............................................................................. 15

Adding new Users/Pilots ................................................................................. 16

Risk Factor Definitions ....................................................................................... 19

Add/Edit a Risk Factor ....................................................................................... 20

Define Mission Profiles ...................................................................................... 21

Enter a new Flight/Mission ................................................................................ 23

Comprehensive Search ...................................................................................... 27

Print Blank Forms ........................................................................................... 29

Summary Report ................................................................................................. 30
Overview

Helicopter Association International
Pre-Flight Risk Assessment Tool

According to the FAA (Notice 8000.301): “A risk-assessment plan is a tool used by the flight management personnel and flight crews to expand the parameters of decision-making for the pilot and flight crew, and to assist in preflight planning and operational control of the aircraft. The company should have procedures on how to mitigate or reduce the risk to an acceptable level.”

HAI is offering a web-based tool that allows members to customize their own risk assessment program. Since there is no “one size fits all” template available the tool allows each operator to consider its own operational and environmental needs in developing its risk assessment criteria for the tool to use.

This tool is known as a procedure-weighted program. This method standardizes risk assessment while minimizing training requirements. The program, once configured, uses a checklist format tool, with numerical weighting values, which trigger levels of concurrence with the pilot’s “go” decision.

One of the advantages of the procedure-weighted program is minimal training is required on the principles of risk assessment and risk management. This method also standardizes the assessment of risks and mitigations. It should be noted that this method does take some time and effort to complete the assessment before each flight and only addresses the defined risks.

Developing the Risks

Due to the diversity of helicopter operators and missions each operator must develop their own set of risk criteria. Here are some typical risk variables to consider when creating risk criteria for the go/no go decision:

(a) Weather (Current and Forecast).

- Ceiling, visibilities–departure, en route, arrival, alternate
- Precipitation–type(s)
- Turbulence–existing and forecast
- Icing–type and forecast
- Winds/gust spread–wind direction, speed, gust spread
- Density altitude
- Ambient lighting
(b) Airworthiness Status of the Helicopter.
- Proper preflight
- Any deferred items in accordance with the Minimum Equipment List (MEL)
- Fuel and oil serviced
- Security of cowling(s), doors and/or equipment
- VFR vs. IFR equipment capabilities
- Inspection status
- Recent maintenance actions
- Time remaining until next inspection, overhaul, teardown, etc.
- Required current maps, approach plates, NOTAMs

(c) Incorporation of Technologies to Aid in Managing Risks.
- Radio/radar altimeters
- High intensity search/landing light systems
- Global positioning system (GPS) moving map systems
- Airborne weather radar systems
- Night vision goggles
- Enhanced vision systems
- Autopilot/stability augmentation systems
- Terrain Avoidance Warning System (TAWS)
- Adequacy of training on new technologies

(d) Performance Margins.
- Weight/center of gravity margins
- High density altitudes
- Fuel margins and range limitations

(e) Pilot and Flight Crewmember Performance.
- Experience in make and model of helicopter, area of operations, and type of operation
- Rest, duty, and flight time impacts on human performance (additional duties during duty time and adequate sleep during rest period time)
- Personal performance factors, such as personal stress (recent divorce, death, illness, or birth in family)
- Influence of pilot’s knowledge of the patient’s status (pediatric, critical injury)
- Communication between crew and all pertinent specialists
- Continuity during shift changes
- Currency of training
- Inadvertent IMC training
- Crew resource management
- Experience of crewmembers operating together as a unit
(f) Operating Environment.
- Terrain/obstructions
- Ambient lighting
- Natural and industrial weather factors
- Availability and status of airports/heliports
- Air traffic density
- Knowledge that other operators in the area have declined the flight due to
  - Localized weather
  - Forecast weather
  - Recent flight(s) experiencing marginal conditions
- Airspace requirements
- Communications and navigation facilities
- Availability of low-level VFR route structure

(g) Organizational Environment.
- Changes in required management personnel
- Changes in air carrier management
- Rapid expansion or growth
- New or major program changes
- Merger or takeover
- Labor management relations
- Organization accidents, incidents, or occurrences
EXAMPLES OF PROCEDURE-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES
From FAA Order 8900.1, Flight Standards Information Management System, CHG 22, Volume 4, Chapter 5, Section 5

<table>
<thead>
<tr>
<th>GO/NO-GO DECISION MATRIX</th>
<th>STATIC RISK FACTORS</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 6 mos. on Current Job</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>&lt; 1 yr. in EMS</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>&lt; 200 hrs. in Type</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>&gt; 500 hrs. in Type</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>Last Flight &gt; 30 Days</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Last Night Flight &gt; 30 Days (night requests only)</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>6 mos. Since Check Ride</td>
<td>+2</td>
</tr>
<tr>
<td></td>
<td>Cockpit Not Configured for Inadvertent IMC</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Navigation or Radio Item on MEL</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Back-up Aircraft</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Newly-installed Equipment (i.e., satellite phone, avionics, GPS)</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Night Vision Goggles (NVG) Equipped</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>&lt; 3 NVG Flights in the Last 120 Days</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Medical Crew &lt; 1 yrs. Experience (both crewmembers)</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>IFR Program</td>
<td>-4</td>
</tr>
<tr>
<td></td>
<td>VFR Program</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>External Stresses (divorce, illness, family/work issues/conflicts)</td>
<td>+1</td>
</tr>
</tbody>
</table>

**Total Static Score**

<table>
<thead>
<tr>
<th>DYNAMIC RISK FACTORS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ceiling within 200' of Program Minimums</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Visibility within 1 Mile of GOM Minimums</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Precipitation with Convective Activity</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Convective Activity with Frontal Passage</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Deteriorating Weather Trend</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>High Wind or Gust Spread Defined by Operations Manual</td>
<td>+2</td>
</tr>
<tr>
<td></td>
<td>Moderate Turbulence</td>
<td>+2</td>
</tr>
<tr>
<td></td>
<td>Temperature/Dew Point &lt; 3 Degrees F</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Forecast Fog, Snow, or Ice</td>
<td>+2</td>
</tr>
</tbody>
</table>
Weather Reporting at Destination -1
Mountainous or Hostile Terrain +1
Class B or C Airspace +1
Ground Reference Low +1
Ground Reference High -1
Night Flight +1
90% of Usable Fuel Required (not including reserve) +1
Flight Turned Down by Other Operators Due to Weather (if known) +4

Control Measures

Delay Flight -1
Avoid Mountainous/Hostile Terrain -1
Utilize Pre-Designated LZs for Scene Requests -1
Plan Alternate Fuel Stop -1
Familiarization Training (self-directed) -1

Total Dynamic Score____
TOTAL SCORE _____

EXAMPLES OF PROCEDURE-WEIGHTED RISK ASSESSMENT AND MANAGEMENT PROCESSES (Continued)

GO/NO-GO DECISION MATRIX (Continued) Grand Total of Static and Dynamic Scores

<table>
<thead>
<tr>
<th>RISK CATEGORY</th>
<th>COLOR CATEGORY</th>
<th>EOC ACTION</th>
<th>TOTAL POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL</td>
<td>GREEN</td>
<td>Pilot Approval</td>
<td>0 – 14</td>
</tr>
<tr>
<td>FLIGHT MANAGER LEVEL</td>
<td>YELLOW</td>
<td>Call Manager</td>
<td>15 – 18</td>
</tr>
<tr>
<td>UNACCEPTABLE</td>
<td>RED</td>
<td>Cancel Flight</td>
<td>19 or Greater</td>
</tr>
</tbody>
</table>
QUICK GUIDE

1. Fill out user registration. HAI will verify membership and grant you access usually within a business day or two.
2. Define your risk factors.
3. Set up your pilots
4. Print out a handful of blank forms
5. Fill out a risk assessment for each flight.
**HOW TO REGISTER**

**How to register.** By registering for the FRA program your company will have access to its own robust Flight Risk Assessment program. The person who registers becomes the system administrator who is responsible for adding additional user accounts and has access to create/modify the risk definitions for your company.

From the Home page click the “Register Here” link.

![Figure 1 – The Flight Risk Assessment (FRA) Homepage](image-url)
You will be taken to the User Agreement page. Scroll to the bottom of the page.

Figure 2 – User Agreement top of screen
After reading and agreeing to the User Agreement Page click the “I agree to these terms” buttons.

Figure 3 – User Agreement – bottom of screen
Simply fill out the registration form. The fields marked with an * are required. The username and password filled out on this form will be a system administrator with access to the entire system. After filling out the form press the “submit” button. HAI will validate your membership and grant you access to the system usually within one or two business days.

Figure 4 – FRA Registration page
Forgot your password? Simply press the “forgot your password” link on the home page, fill out your email address, and press the submit button. You will receive an email with your username and password.

Figure 5 – Forgot your username and/or password page.
Logon – From the home page www.rotor.com/fra, fill out your username and password and press the “submit” button.

Figure 6 – Home page logon
After you logon you will be at your Company’s Home Page.

Figure 7 – Company Home page after logon.
**UPDATE COMPANY REGISTRATION**

**Update Company Registration.** After you logon the user’s with system administration privileges can update the company profile. This includes the company name, address, the risk assessment point ranges, and the ability to turn on the mission profiles feature.

The point assessment point ranges are used to define the parameters that determine whether or not to take a particular flight depending on the risks assigned for that flight.

The mission profile feature allows you to define specific mission profiles for you operation with associated risks pre-assigned for each mission. When a new flight is entered and the mission is selected the associated risks are automatically checked on the form.

![Company Information](image)

**Figure 8 – Amend your Company Registration Information**
ADDING NEW USERS/PILOTS

**Adding new Users/Pilots.** From the Company home page the system administrator can click on the “Add/Edit User Registration” link to access the User Registration page. From here you can add a new user/pilot to the system by clicking the “Add Additional User” button and filling out the form.

![Add/Edit User Registration Screen](image)

**Figure 9 – Add/Edit User Registration Screen**
After clicking the “Add Additional User” button fill out the form. The fields marked with an * are required. For each pilot you should select the appropriate risk categories for that individual. These will automatically be filled out when the pilot is assigned to a flight.

Figure 10 – Add a new User/Pilot – top of screen.
Figure 11 - Add a new User/Pilot – bottom of screen.
RISK FACTOR DEFINITIONS

Risk Factor Definitions. From the home page the system administrator can click on the “Add/Edit Risk Factors” link to access the company’s risk definitions. The first time this is accessed the screen is pre-populated with generic risk factors.

There is no “one size fits all” tool. Each operator should consider its own operational and environmental needs in developing its risk assessment tool(s) and plans. You should carefully review all risks associated with your company and its mission profiles and create a set of risks appropriate for your company. You may add new risks, edit risks, and delete risks to accommodate your needs.

Each risk is assigned a risk score. Careful consideration should be given to these scores. The score assigned to one risk should be in proportion to the scores assigned to the other risks. Keep in mind the sum of all the risk scores assigned to a flight determine the go – no go decision.

Risks are divided into two categories, static and dynamic. Static risks are fixed risks either to the aircraft or pilot. Dynamic risks can change with time such as weather.

Figure 12 – Risk Factor Definitions screen
ADD/EDIT RISK FACTORS

Add/Edit a Risk Factor. This screen shows the risk factor add/edit screen.

Figure 13 – Edit Risk Factor screen.
MISSION PROFILES

The mission profile feature allows you to define specific mission profiles for your operation with associated risks pre-assigned for each mission. When a new flight is entered and the mission is selected the associated risks are automatically checked on the form.

This feature can be turned on in the “Edit Registration” page. Once the feature is enabled you can add and edit the mission profiles for your company by clicking the “add/edit mission profiles” link from the Company home page.

Figure 14 – Mission Profile definitions
After clicking the “Add” button fill enter the name of the new mission profile. Then select the associated risks for that mission. These risks will automatically be assigned to a flight when the mission is selected. Press the submit button on the bottom of the form when finished.

Figure 15 – Add a new Mission Profile — top of screen.
ENTER A NEW FLIGHT

**New Flight.** From the home page anyone with a logon account can create a flight profile by clicking on the “New Flight” link from the home page after logon. The user should enter the date of the entry (defaults to the current day), select the pilot’s names from the drop-down list, enter the date of the flight, the expected flight start time and the duration of the flight. Once the pilot is selected the risk list will be displayed with the default risks assigned for the pilot.

![New Flight Screen](image)

Figure 16 – New Flight screen.
For the flight all risks associated with the flight should be checked. As you check each risk the score for the flight will automatically update on the bottom of the form.

Figure 17 – New flight screen after pilot assigned to flight.
After all the risks for the flight have been checked press the “Submit” button.

Figure 18 – Add a new Flight – bottom of screen.
After the risk assessment is complete the form can be printed by pressing the “print” link.

Figure 19 – New flight submitted – Print/Edit/Review options.
**COMPREHENSIVE SEARCH**

**Comprehensive Search.** From the comprehensive search you can enter search criteria and find mission profiles that have been previously entered. You can search by flight number, mission date, pilot’s name, and a range of scores. After the selection criteria is entered press the “submit” button to see a list of search results.

![Figure 20 – Comprehensive Search screen.](image)
**Search Results.** After a search is initiated the search results will appear. For each flight you can click on the “View/Print”, “Edit”, or “Delete” button as appropriate.

![Search Results Screen](image)

*Figure 21 – Search Results Screen*
PRINT BLANK FORMS

It is good practice to have hard copy blank paper forms for your company handy. Although HAI makes every effort to keep the web site up and running this is not always possible. In addition you may temporarily lose your Internet connection. When this occurs you can reach for your blank Risk Assessment forms and fill them out manually. Later, when you are reconnected, you can enter the data into the system if desired.

![Screenshot of blank form](image)

Figure 22 - Screenshot of bottom of blank form.
SUMMARY REPORT

From the Company home page click the “Summary Report” button.

The summary report can be an important part of the company SMS program to evaluate, on a timely basis, a summary of the flight risks association with the operation.

To run the report enter a data range. The report will display the number of Greens, Yellows, and Reds you have for the time period and display a count of each risk that was checked. This information should be evaluated by the company’s SMS manager and used to help strategize mitigation factors.

Figure 23 – Summary Report Tool.
Figure 24 – Sample Summary Report