APPAREO ENVISION

USER GUIDE

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APPAREO ENVISION

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Record of Revision

Revision Number	Change Description	Revision Date	Inserted By
2.0	Major revision Added Record of Revision block	11/17/10	CJW
2.1	Added To View Peak Information for an Event section, added information about Absolute Value feature in condition sentences, and added information about File Recording Duration search feature.	5/2/2011	JH/ CJW
2.2	Added About AGL Eventing section. Deleted To Extract Downloaded Files section. Modified To Select Current Company and Downloading Data Files sections.	11/2/2011	CJW
2.3	Described features released in the 2012 ALERTS enhancements.	10/31/2012	CJW
2.4	Updated logo. Made minor formatting/grammatical changes throughout.	2/9/2015	CJW
3.0	Updated to reflect name change and site redesign.	9/11/2018	AAL
3.1	Added deleting ATU, removed some advanced search and reports criteria	4/16/2019	AAL
3.2	Updated search criteria, transferring recorders	5/20/2019	AAL

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Getting Started

Appareo EnVision is part of Appareo Flight Data Monitoring solutions.

Use Appareo EnVision after you've recorded flights on a supported FDM system and loaded flights from the SD card into the Appareo Transfer Utility (ATU). Once the files have been processed by the ATU, Appareo EnVision shows flights that have been processed against rules set by your company and then allows you to view and analyze the results.

After using Appareo EnVision, Vision 1000 users can use the Vision 1000 Playback Utility to replay select flight data. If you have a subscription to AS Flight Analysis, you can view a 3D recreation of the flight on your computer.

You'll Also Need

- Vision 1000 or GAU 2000 SD card with flight files
- ATU (Appareo Transfer Utility)

Browser Requirements

Appareo EnVision is used in any web browser. If you're using Internet Explorer, it must be Version 11.

Many users will not have access to all of the functionality in this document. Contact your Company Admin or Appareo EnVision support to request additional access.

Logging in

After an account is created for you, you'll be emailed a username and password to log into Appareo EnVision at https://envision.appareo.com.

Editing Account Settings

1. Click your username in the upper left corner, then click **View Account**.
2. Click the pencil 🖉 icon, then edit your settings.
3. Click **Update**.

Adding Users and Sub-Companies

Adding Users

Add a user to create a new account for someone in your company.

1. Click your username in the upper left corner, then click **View Company**.
2. In the **Users** section, click the green **+Add** button.
3. Enter the new user's name, email, username, and a temporary password.
4. Select a role for the new user. If there isn't an exact match, pick the closest role to their position. The user's permissions auto-populate based on the role you choose.
5. Edit the user's permissions by selecting or deselecting the Permissions checkboxes (if necessary).
6. Click the green **Add** button. The user will get an email with their login information.

Adding Sub-Companies

Add a child company if you have sub-companies within your organization that are all recording flight data, but you want the data for each sub-company to be separate. Users in a sub-company can only see data for that sub-company.

1. Click your username in the upper left corner, then click **View Company**.
2. In the **Child Companies** section, click the green **+Add** button.
3. Enter the company's name, and the information for the admin user of that sub-company.
4. Click **Create**. The admin user will get an email with their login information.

Impersonating Sub-Companies

Control a sub-company using the Impersonate feature. When impersonating a sub-company, you can view and edit aspects of their company as if you were logged into their account. To impersonate:

1. Click your username in the upper left corner.
2. Click **View Company**.
3. Click **Impersonate** next to the company name that you want to act as.
4. View or edit flights or settings on that company's account.

   NOTE: When impersonating a sub-company, you can only perform actions that are within your current permission level.

5. Click **Stop Impersonation** at the top of the screen to return to the parent company's account.

Adding Event Triggers

Set an event trigger help analyze incoming flight data. Event triggers flag a flight that meets the criteria that you specify in the event trigger parameters. Event triggers can be updated at any time.

1. Click **Event Triggers** on the left sidebar.
2. Click **Add**.
3. Configure information for the event trigger and click **Save**.

See the descriptions below for more information about event trigger settings.

Event Trigger Information

Enter name and duration information for the event trigger.

a. Enter a name for the event trigger.
b. Select the amount of time before the event to show on the event graph.
c. Select the amount of time after the event to show on the event graph.
d. Check the **Shared with Child Companies** box to make this event trigger visible to your sub-companies.

   NOTE: You cannot delete or unshare an event trigger once it is in use by another company. The company using the trigger must first remove it from any profiles or reports.

Conditions

Configure the conditions that will trigger an event.
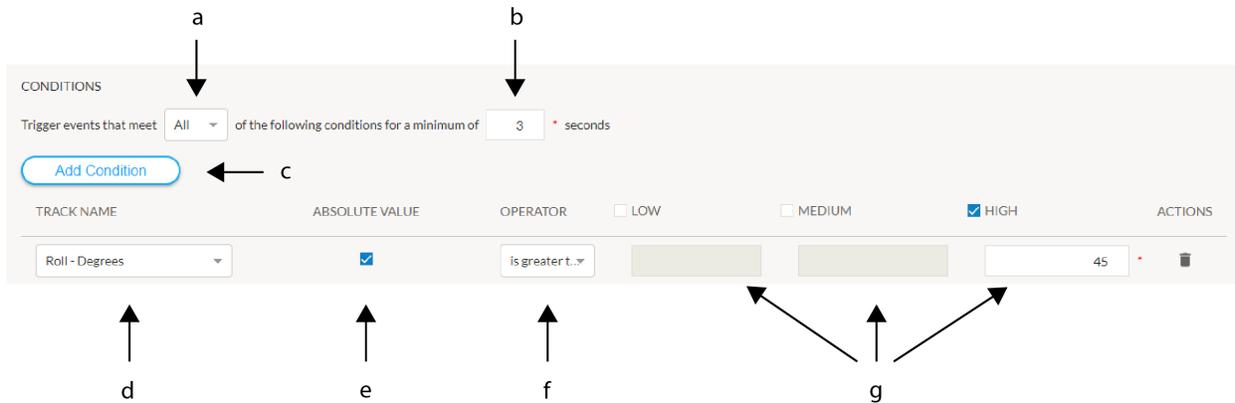
a. Select the number of conditions that must be met to trigger an event.

- **All:** All conditions below must be met at the same time.
- **Any:** At least one of the conditions below must be met.

b. Type the number of seconds that a condition must occur to trigger an event.

c. Click **Add Condition** if you want to measure more than one condition.

d. Select a condition (Track Name) to measure.

   NOTE: GAU 2000 users will see Discrete track name options. To see what condition the discrete value is assigned to, click **Recorders** on the left sidebar, then click the GAU 2000 name. Click **GAU 2000 Configuration** to see discrete conditions.

e. Check the **Absolute Value** checkbox to trigger an event regardless of if the value is positive or negative.

   EXAMPLE: If you set a trigger for a roll greater than 45° and check the **Absolute Value** box, an event will trigger both if it is greater than a 45° roll in either the left (negative value) or right (positive value). Absolute values are typically used with roll, yaw, and pitch.

f. Select if an event should trigger when the value is (**=**), is less than (**<**), is less than or equal to (**<=**), is greater than (**>**), or is greater than or equal to (**>=**) the number you enter in the next field.

   TIP: Use a "less than" negative value in situations such as descents. For example, if you want to know when an aircraft is descending more than 1,000 ft/min, the parameters for the condition would be as follows:

   - **Track name:** Vertical Speed
   - **Operator:** is less than
   - **Value:** -1,000 ft/min.

   Since a descent of 1,500 ft/min is in the negative direction, the value of that descent would be -1,500. Since -1,500 is a smaller number than -1,000, "less than" should be used.

g. Check the box for at least one low, medium, or high severity alerts and enter a value in the field. Event severities help differentiate between minor infractions and major events.

Advanced Features

Use an advanced feature to add an additional condition on top of the event trigger. When you add this, the event will not trigger unless it also meets the additional requirement. Unlike the base conditions of the event that are triggered once a threshold is met, an advanced option condition must change by a specified amount in the defined time period.

EXAMPLE: You could set a base trigger for ground speed less than 120 knots for more than 3 seconds, and then also add an advanced option condition that the heading must also change more than 10 degrees.

☑ ADVANCED FEATURES				
Only when	Heading - Degrees ▼	changes more than	10	while conditions match

GPS Accuracy Monitoring

Check the box next to **GPS Accuracy Monitoring** to set an accuracy level threshold. Events that occur while the threshold you set is exceeded will be flagged for GPS inaccuracy. Refer to the table below for accuracy ranges.

	Good	Medium	Poor
Horizontal Accuracy	0-7 ft	8-15 ft	16+ ft
Vertical Accuracy	0-10 ft	11-25 ft	26+ ft

EXAMPLE: In the image below, an event would be flagged when one or both of the GPS accuracies exceeded Medium severity.

☑ GPS ACCURACY MONITORING

Mark Event when either

☑ Horizontal Accuracy is | Medium (15 ft) ▼

☑ Vertical Accuracy is | Medium (25 ft) ▼

while conditions match

Using Profiles

Use a profile to group event triggers and assign them to a recorder.

NOTE: If a recorder doesn't have a profile assigned to it, no event triggers will be processed against the uploaded flight data for that recorder.

Creating a Profile

1. Click **Profiles** on the left sidebar.
2. Click **Add**.
3. Enter a name, description, and event triggers to include in the profile.

   NOTE: If you check the **Shared with Child Companies** box, the profile (and any event triggers in the profile) will be visible to sub-companies.

4. Click **Add Profile**.

Sharing a Profile

Share a profile to allow sub-companies to use the profile.

1. Click **Profiles** on the left sidebar.
2. Click the name of the profile, then click the share icon .

Deleting a Profile

1. Click **Profiles** on the left sidebar.
2. Click the delete icon .

   NOTE: You cannot delete or unshare a profile once it is in use by another company. The company using the profile must first remove it from any recorders or reports.

Assigning a Profile to a Recorder

1. Click **Recorders** on the left sidebar.
2. Click the pencil icon.
3. Type the profile name in the **Profiles** field or select it from the drop-down menu.
4. Click **Update**.

Viewing Aircraft Types

If an aircraft in your fleet isn't one of the pre-loaded aircraft types, you can add it in the Aircraft Types page.

1. Click **Aircraft Types** on the left sidebar.
2. Click **Add**.
3. Enter the aircraft type.
4. Click **Add Aircraft Type**.

Adding Junk Rules

Create a junk rule to sort a flight into the Junk folder if it meets the criteria you specify. Junk rules help remove recordings that aren't useful to include in your flight data analysis.

1. Click **Junk Rules** on the left sidebar.
2. Check the box next to any of the options that you want to trigger a junk rule.
   - The flight is shorter than the time length that you specify. Type a number and unit. **EXAMPLE:** *5 mins*
   - It has more events than the number of events that you specify.
   - There is no GPS lock during the flight.
3. Click **Update**.

Viewing Flights in Processing Queue

After you upload flights to the Appareo Transfer Utility, it automatically processes flight files so that they can be analyzed in Appareo EnVision. When files are processing and done processing, a message appears in the bottom right corner of the screen.

Occasionally, flights can get "stuck" in the processing queue. After it has been processing for two days, the system will automatically attempt to re-process the flight.

Viewing Processed Flights

After being processed in the Appareo Transfer Utility, all flights are sorted into either the Latest, Archive, or Junk folders.

For information on re-sorting flights, see Organizing Flights on the next page.

Viewing Flights with Events

Flights that had an event that didn't match a junk rule are sorted into the Latest page. Click **Latest** on the left sidebar to view these flights.

Viewing Flights without Events

Flights that did not have an event are sorted into the Archive page. Click **Archive** on the left sidebar to view these flights.

NOTE: If you have a "missing" flight, it is often in the Archive folder. You can also search for archived flights by searching with the **Archived Matches** box checked. See *Searching for Flight Information* on page 23 for more information on searching.

Viewing Favorited Flights

Click the star icon ☆ to favorite a flight, and click the icon again ★ to unfavorite a flight. When you favorite a flight, it will still remain in its original folder (e.g. *Latest* or *Archive*) but also appear in the Favorites folder.

Click **Favorites** on the left sidebar to view these flights.

Viewing Junk Flights

Flights that have met the criteria specified in the Junk Rules page will be filtered into the Junk folder. Click **Junk** on the left sidebar to view these flights.

NOTE: Flights are not automatically deleted. Click the trash icon 🗑 to delete a file.

Organizing Flights

To re-sort, delete, or download a flight, use the icons next to the flight name on the Latest, Favorites, Archive, or Junk page.

Icon	Action
⬇	Click to move flight to Archive folder. **TIP:** To declutter your folders, move flights to the Archive folder after reviewing them.
❗	Click to move flight to Junk folder.
⬇	Click to move flight to Latest folder.
🗑	Click to delete flight.
⬇	Click to download a file of the flight to your computer.
☆	Click to favorite a flight.
★	Click to unfavorite a flight.

Click the name of a column to sort data by that value. After clicking on a flight to view its details, click on the label in the top navigation (Latest, Favorite, Archive, Junk, or Search) to return to the sorting and page that you were last on.

Reprocessing Flights

Flights that had one of the conditions below will be marked with the outdated icon 🕐.

- An event trigger that was processed against the flight was altered.
- A profile that was processed against the flight had an event trigger added or removed.
- A recorder had profiles added or removed from it.
- Flights recorded with a GAU 2000 had the recorder configuration altered.

These flights may need to be reprocessed with the new event trigger parameters, depending on what changed. For example, you might want to reprocess a flight if you've edited an event trigger and you want to see where the change appears in past flights. You might not want to reprocess a flight if you add a new event trigger requirement that only applies to future flights.

Click the reprocess icon ↻ to reprocess the flight. It will be removed from the flights page until it finishes processing.

Analyzing Flights

Click a flight on one of the Flights pages to view and analyze its events.

Viewing the Flight Graph

The graph at the top of the page shows your flight and the events that happened during it.
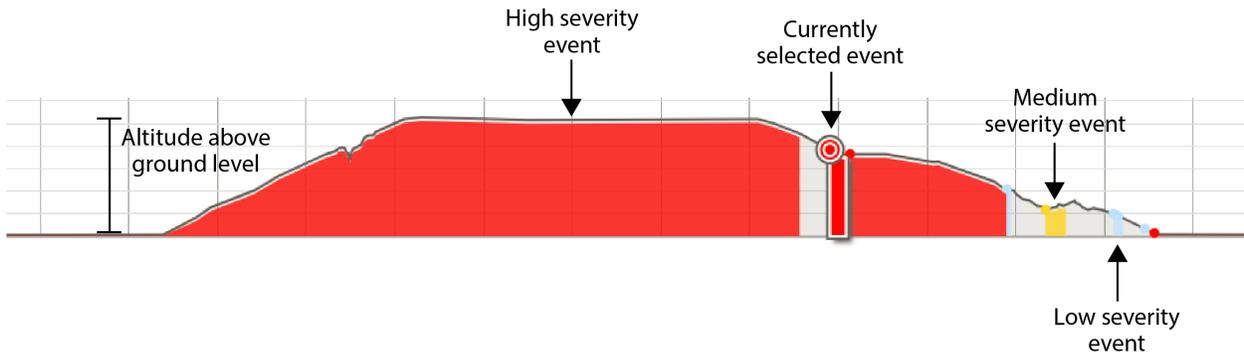
Click the download icon ⬇ to download a file of flight event information to your computer.

Viewing Event Information

To view individual event information, click on a section of the flight graph or click on an event name in the bottom left of the screen.

You can view the event severity, profile, start and end time, duration, and a graph of the event. Refer to the image below for information about reading graphs.

Line Color	Meaning
Red	High severity event threshold
Yellow	Medium severity event threshold
Blue	Low severity event threshold.
Gray	Zero value

Pitch graph example
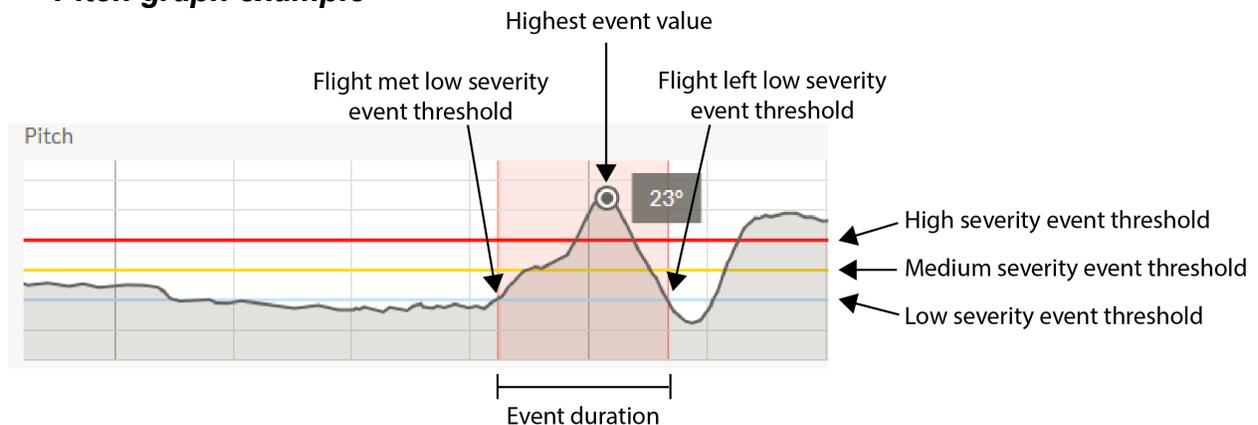
Roll graph example (absolute value enabled)
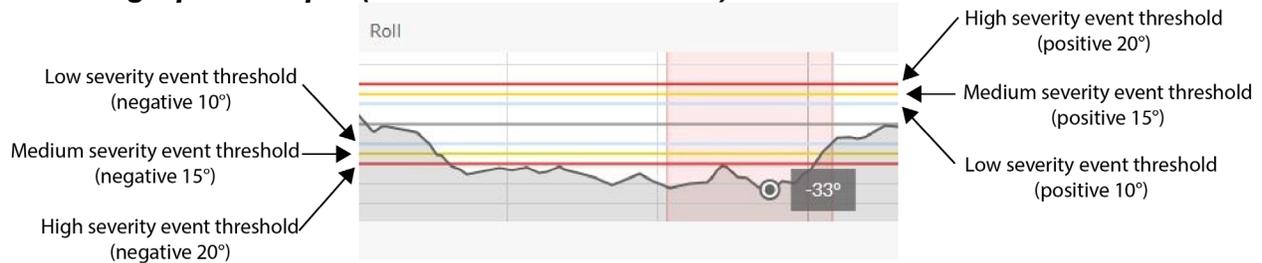
Click the download icon ⬇ to download a file of individual event information to your computer.

NOTE: If an event trigger has the same value for a low, medium, and high condition, only a red line will display.

Validating and Invalidating Events

Click the checkbox next to **Valid** or **Invalid** to indicate if they should be analyzed and included in reports.

- **Valid events:** The event is valid and should be analyzed.
- **Invalid events:** The event should not be analyzed.

Creating Reports

The Reports page allows you to generate a report with information about events that have been recorded on aircraft in your company's fleet.

To create a new report or report template, complete the steps below.

1. Click **Reports** on the left sidebar.
2. Click **Add**.
3. Select any criteria that you want incorporated into the report. **All information is optional except for a name (only required if saving a report template) and chart value.**

   See the sections below for descriptions of each field.

4. Run a report or save a template of the report.
   - Click **Run Report** to generate a report but not save the template. Scroll down to see the report.
   - Click **Save** to save the template for future use. This will not generate a report.

Report Information

Enter basic information about the report.

a   b

REPORT INFORMATION

Name   Description

*

c ⟶ ☐ Run Report for All Child Companies   ☐ Shared with Child Companies ⟵ d

a. Enter a name for the report (only required if saving a report template).
b. Enter a description for the report.
c. Check the **Run Report for All Child Companies** or **Compare Results to Sibling Companies** box to compare report data.

Setting	Checked	Unchecked
Run Report for all Child Companies (Appears if the company is a parent company)	Report averages all child companies against shared event triggers	Report only includes parent company data
Compare Results to Sibling Companies (Appears if the company is a child company)	Report shows results for the current company and the average for all other sibling companies against shared event triggers	Report only includes current company data

NOTE: Reports with one of these boxes checked do not show any identifying information for which company has which events.

d. Check the **Shared with Child Companies** box to make the report (and any profiles or event triggers in the report) visible to sub-companies.

NOTE: If you want to share a report, don't enter a file name, tail number, or serial number.

NOTE: You cannot delete or unshare a report once it is in use by another company. The company using the report must first delete it from their scheduled reports.

Report Criteria

Select what information should be included in the report.

Report fields act as filters; if no criteria is selected for a field, all options for that field will be included in the report.

a. Filters by serial numbers or tail numbers. Begin typing a serial or tail number or select it from the drop-down menu.

b. Filters by a minimum or maximum flight recording duration. Type a length of time.

   EXAMPLE: 1 hr 15 min or **2m 30s**

c. Filters by a timeframe that the flight was recorded in. Select a timeframe from the drop-down menu or select **Custom** to enter a specific date range.

d. Filters event severities. Check the box next to the severities to include.

e. Filters event states. Check the box next to the event states to include.

f. Filters by profiles. Select a profile from the drop-down menu. See *Using Profiles* on page 9 for more information on profiles.

g. Filters by events that occurred in a flight. Select an event trigger from the drop-down menu.

h. Filters by aircraft. Select an aircraft from the drop-down menu.

i. Select which type of files to include. Refer to the table below for more information.

Setting	Checked	Unchecked
Up-to-date files	Include flights with **up to date events and events that may need reprocessing**	Only include flights with **events that may need reprocessing**
Archived matches	**Include** flights from the Archive folder	**Do not include** flights from the Archive folder

Chart Options

Select how you want to display your information. The chart options have different effects based on the chart type that you choose.

Bar Chart

Shows values as horizontal bars.
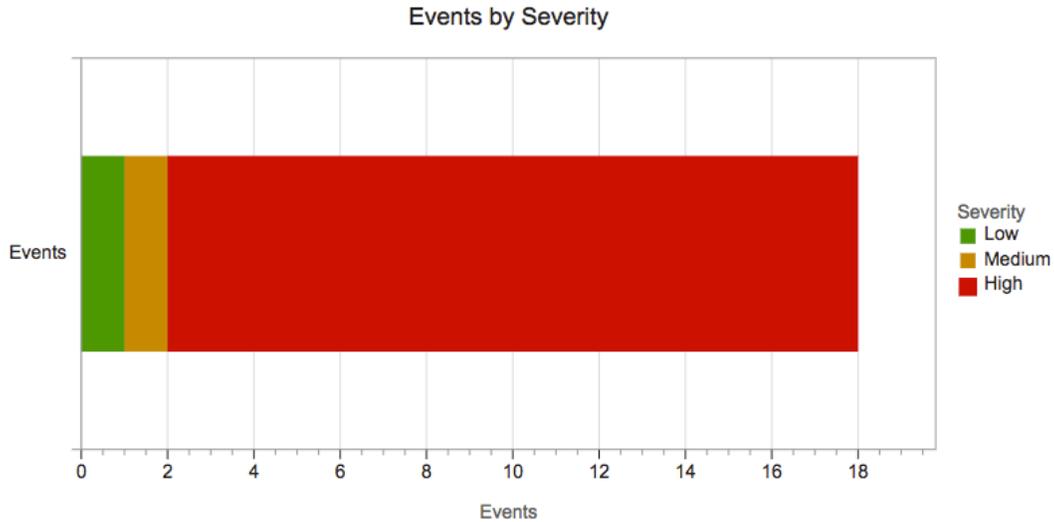
Options selected—Stack by: Severity; Value: Events.

Up to three grouping options can be incorporated.

- **Group by:** Show the value in bars that are side-by-side.
- **Stack by:** Show the value in bars that are stacked.
- **Period:** Groups values into separate bars based on which day, week, month, or year the flight took place.

In the **Value** drop down menu, choose if you want to show all events, events per recording, or events per hour.

Column Chart

Shows values as vertical bars.
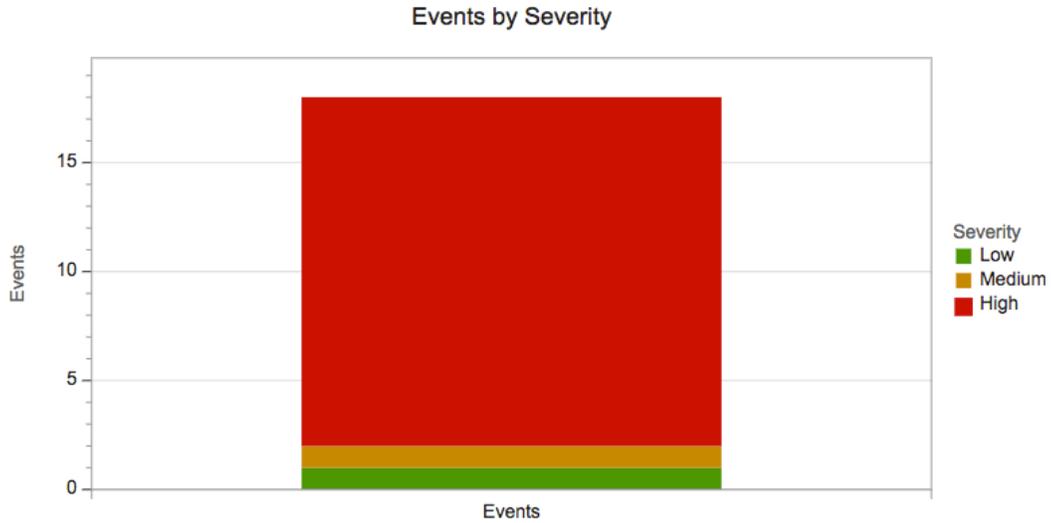
Options selected—Stack by: Severity; Value: Events

Up to three grouping options can be incorporated.

- **Group by:** Shows the value in bars that are side-by-side.
- **Stack by:** Shows the value in bars that are stacked.
- **Period:** Groups values into separate bars based on which day, week, month, or year the flight took place.

In the **Value** drop down menu, choose if you want to show all events, events per recording, or events per hour.

Line Chart

Shows values as dots connected by lines.

Weekly Events by Severity
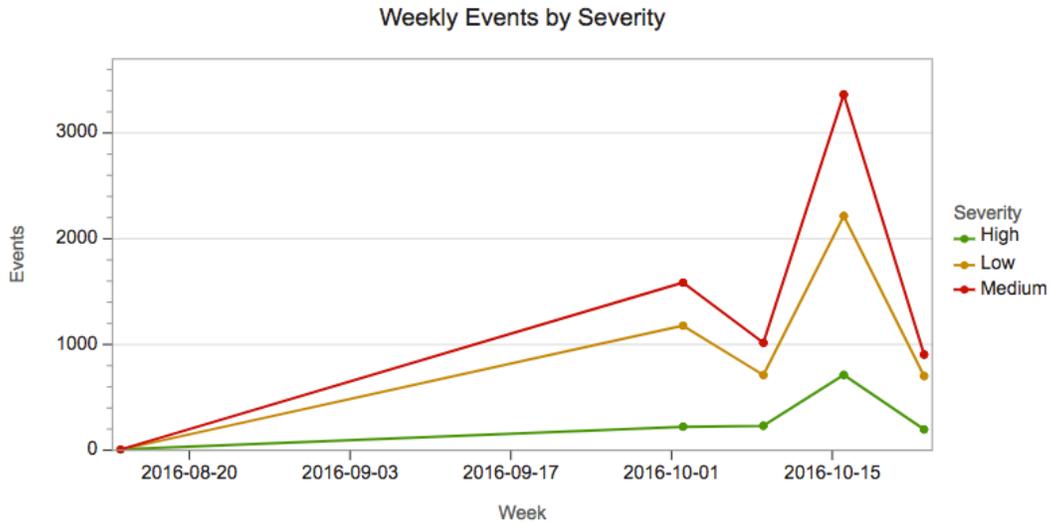
Options selected—Stack by: Severity; Value: Events

Up to two grouping options can be incorporated.

- **Group by:** Shows the value as a dot. Lines overlap.
- **Stack by:** Shows the value as the distance between dots. Lines are stacked on each other like a stacked column chart.
- **Period:** Spaces the dots horizontally based on which day, week, month, or year the flight took place.

In the **Value** drop down menu, choose if you want to show all events, events per recording, or events per hour.

Pie Chart

Shows values as a circle divided into percentages.

Events by Severity

89 % — High

Low — 6 %

Medium — 6 %
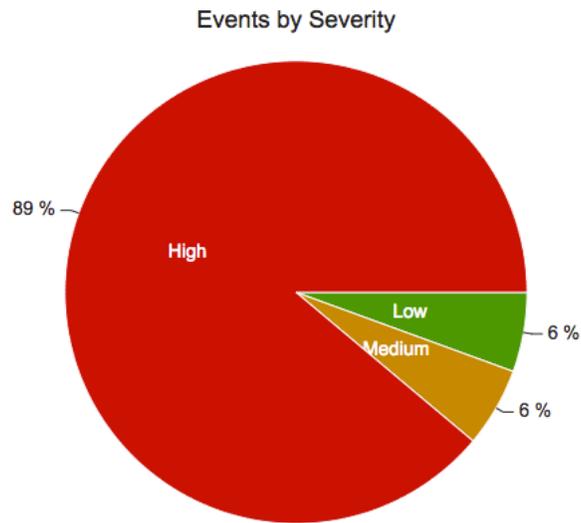
Options selected: Group by Severity, Value: Events

One grouping option can be incorporated:

- **Group by**, **Period**, or **Stack by**: Group the pie chart by any value. All grouping options will appear the same.

In the **Value** drop down menu, choose to show all events, events per recording, or events per hour.

None

Download a data file of the information for use in third party software.

Scheduling Reports

You can set a report schedule to automatically create and email reports.

1. Click **Schedules** on the left sidebar.
2. Click **Add**.
3. Select a report, period (frequency), start date, and recipient email addresses.
4. Click **Add Schedule**.

   Reports are sent out at 12:00 a.m. your time.

View Last ATU File Upload

To view the last time your company's Appareo Transfer Utility uploaded files, click **Status** on the left sidebar. You can use the last uploaded date to confirm that your flights were uploaded to the server.

You can edit additional Appareo Transfer Utility settings in the Appareo Transfer Utility program.

Deleting ATUs

To remove an ATU, click **Status** on the left sidebar. Then, click the trash 🗑 icon next to the ATU that you want to delete.

You can edit additional Appareo Transfer Utility settings in the Appareo Transfer Utility program.

Viewing and Editing Recorder Information

You can view and edit recorder information associated with your company and child companies in the Recorders page.

Viewing Recorder Information

1. Click **Recorders** on the left sidebar.
2. Click a recorder and view its information.

Editing Recorder Information

1. Click **Recorders** on the left sidebar.
2. Click a recorder.
3. Click the pencil icon ✏ and edit the aircraft type, profile, or tail number. If your recorder is a GAU 2000, edit the recorder configuration here.

Disabling a Recorder

Uncheck the **Enabled** box to disable a recorder.

Transferring a Recorder

1. Click **Recorders** on the left sidebar.
2. Click the transfer ⬈ icon and select a new company and the date that it should be transferred. Click **Transfer**.

Adding a Recorder

To add a recorder, contact Appareo Support at <u>support@appareo.com</u>.

Viewing BIT (Built In Test) Results

1. Click **Recorders** on the left sidebar.
2. View the recorder's status overview in the *Built-in-tests* column.

Test Result	Meaning
Unknown	No data has been uploaded from the recorder.
Healthy	No built-in-tests have failed
Watch	A built-in-test has failed.

NOTE: The test result only shows the test result after the last flight. Results from previous flights will not appear.

3. If *Watch* appears for a recorder and you would like to find which built-in-test failed, follow the steps below.
   a. Click the recorder.
   b. Click the down arrow in the *Built-in-test results* section.
   c. Find which built-in-test failed. Contact support@appareo.com to troubleshoot the failure or to receive an RMA (Return Materials Authorization) to send the unit in for repair.

   NOTE: GPS 3D Lock (BIT 16) and SD Detection Test (BIT 33) are common built-in-test failures that are usually easy to fix.

   - **GPS 3D lock failure:** Check to see if the last power cycle was in an area with no GPS reception, or if it had a short power cycle. Either of these could lead to the unit not being able to obtain a 3D GPS lock.

   - **SD detection test failure:** Insert or replace the SD card. If the issue continues, contact support@appareo.com.

Searching for Flight Information

Click the magnifying glass icon 🔍 at the top of the page to search for specific flight information.

Search fields act as filters; if no criteria is selected for some fields, all options for that field will be included in the search.

Searching Using Basic Fields

a	b	c	d	e

| Serial or Tail Numbers | All Aircraft Types... ▼ | All Event Triggers... ▼ | All Profiles... ▼ | All Severity Levels... ▼ |
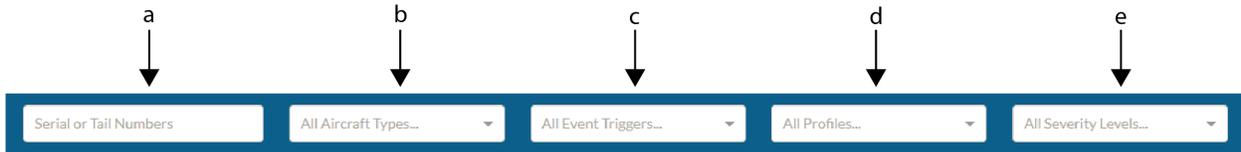
a. Filters by one or more serial numbers or tail numbers. Start typing, then select a serial or tail number from the drop-down menu.
b. Filters by one or more aircraft types. Select an aircraft from the drop-down menu.
c. Filters by one or more event triggers. Select an event trigger from the drop-down menu.
d. Filters by one or more profiles. Select a profile from the drop-down menu. See *Using Profiles* on page 9 for more information on profiles.
e. Filters by one or more event severities. Check the box next to the severities to include.

Tap **Search**. To include more search options, tap the down arrow next to the search button.

Searching Using Advanced Fields

Tap the down arrow next to the **Search** button to search with more advanced options.

a	b	c	d

Date Range	Event State	Results Must Contain 1 or More Events For	Processing Status
Any Time... ▼	☐ Unchecked ☐ Valid ☐ Invalid	☐ Selected Profiles ☐ Selected Event Triggers	Any Status... ▼

Minimum Recording Duration ❔	Maximum Recording Duration ❔	Include		
		☐ Junk Matches ☐ Archived Matches	File Names	Flight or Event Notes

e	f	g	h
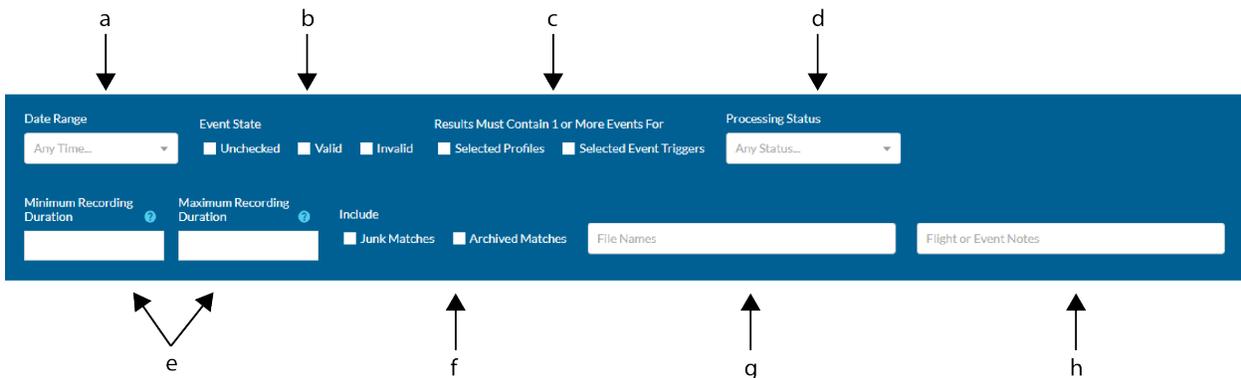
a. Filters by a timeframe that the flight was recorded in. Select a timeframe from the drop-down menu or select **Custom** to enter a specific date range.
b. Filters event states. Check the box next to event states to include.

c. Select event restrictions for search results. Refer to the table below for more information.

Setting	Checked	Unchecked
Selected Profiles	If you've included a profile in the search, only show flights that have that profile **and an event from an event trigger that is included on that profile**	If you've included a profile in the search, only show all flights that have that profile, **regardless of if there was an event included on the profile.**
Selected Event Triggers	If you've included an event trigger in the search, only show flights had both that event trigger processed against them but **also had an event caused by that event trigger**.	If you've included an event trigger in the search, only show flights that had that event trigger processed against them **regardless of if it had an event caused by that event trigger**.

d. Filters by processing status.

- **Outdated files only:** Only include flights with events that may need reprocessing.
- **Up-to-date files only:** Only include flights with up-to-date events.

e. Filters by a minimum or maximum flight recording duration. Type a length of time.

EXAMPLE: *1 hr 15 min* or *2m 30s*

f. Select which type of files to include. Refer to the table below for more information.

Setting	Checked	Unchecked
Junk matches	**Include** flights that met junk rule criteria.	**Do not include** flights that met junk rule criteria.
Archived matches	**Include** flights from the Archive folder (flights that did not have events).	**Do not include** flights from the Archive folder (flights that did not have events).

g. Filters by file names. Type a file name and press the **enter** key to add it.

h. Filters by text from a flight or event note. Type a keyword or phrase and press the **enter** key to add it.