



# FLEETS ANALYZER

## User guide

User guide v2.7 (for Fleets Analyzer v10.8)  
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## User guide changelog (v2.6 to v2.7)

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- Corrected an error on page 30 where the retirement cycles rule for a Widebody was stated as being 20,000cycles. This has now been corrected to 40,000cycles.
- Fixed an issue with the document page numbering restarting in the Technical section.
- Updated the document to reflect the new company name and branding.
- Removed Aircraft Availability section

## Introduction

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Flight Fleets Analyzer was launched in September 2015 and designed to replace ACAS, Ascend Fleets, HeliCAS and MiliCAS. It is a unified online tool that provides access to Cirium's full fleets database. Updated every 24 hours, Fleets Analyzer allows complex queries to be configured, and the results of those queries to be viewed in a highly customisable output grid.

Flight Fleets Analyzer has been designed based on extensive user feedback, and it will continue to be developed and enhanced on an ongoing basis. If you have any feedback or comments, please use the support link available from every page within Fleets Analyzer, or send an email to the following address: [support@Cirium.com](mailto:support@Cirium.com).

This user guide can help as a reference when using Flight Fleets Analyzer. There's no need to read from beginning to end – you can go directly to the section you're interested in. In addition to this guide, there is a set of How-To videos available from the following URL (you'll also find the latest version of this guide there): [www.flightglobal.com/resources/fleets-analyzer-resources/](http://www.flightglobal.com/resources/fleets-analyzer-resources/). There's also the Fleets Analyzer Knowledge Base (aka the blog) where you'll find the most up-to-date product information (<http://knowledgebase.flightglobal.com/>).

# Layout

## The header bar



Figure 1. The header bar.

- 1 The Aircraft section. Each row in the results grid is an individual aircraft or an order for an individual aircraft. Visit this section for information on individual aircraft or groups of aircraft, or to view aircraft trends. The Fleets Analyzer database currently tracks almost 350,000 aircraft (in service or on order).
- 2 The Aircraft Events section. Each row in the results grids is an individual event that has occurred during an aircraft's history, e.g. delivery events, conversion events, etc. Visit this section for information on individual events or groups of events, or to view event trends. The Fleets Analyzer database currently holds over two million aircraft events.
- 3 The Companies section. Each row in the results grids is an individual company or person. Visit this section for information on individual companies or people, or groups of companies. The Fleets Analyzer database currently holds over 148,000 company records, and 53,000 people records.
- 4 The Maintenance Section. In the Maintenance Section, on the Fleet Maintenance Tab, each row in the results grid is a specific maintenance need for an operator.
- 5 The Glossary. Definitions for all the terms used in Fleets Analyzer.
- 6 Support. If you need help using Fleets Analyzer, click this button and send us an email.
- 7 Help. The first time you accessed Fleets Analyzer you should have gone through the first time user experience. If you need to go through this again, use this link.
- 8 Product selector. Use this to open Dashboard or Fleets Analyzer (opens in a new tab).
- 9 Saved Searches and Exports. From here you can view all your previously saved searches, along with any exports you have previously generated.
- 10 Accidents Section. In the Accidents Section, each row in the results grid is an individual accident.
- 11 Deals Section. In the Deals Section, each row in the results grid is an individual deal. Access to this section is dependent upon your subscription.
- 12 Exports. You'll find your exported results here.

## Homepage

The homepage is the starting point to quickly jump to an aircraft or company profile, add your first filter to start a search, or quickly run a previously saved search. It's also the place where you'll see messages from Cirium.

The screenshot shows the FlightGlobal homepage with a navigation bar at the top containing 'OTHER PRODUCTS', 'GLOSSARY', 'SUPPORT', 'HELP', and 'FGPREMIUMTEST@BBI.CO.UK'. Below the navigation bar are tabs for 'AIRCRAFT', 'AIRCRAFT EVENTS', 'COMPANIES', 'MAINTENANCE', 'ACCIDENTS', 'DEALS', 'EXPORTS', and 'SAVED SEARCHES'. The main content area is divided into several sections:

- Search for an aircraft profile** (1): A search box with a magnifying glass icon and a search button.
- Search for a company profile** (2): A search box with a magnifying glass icon and a search button.
- Run a saved search** (3): A search box with a magnifying glass icon and a search button.
- Release v10.7** (6): A notification banner with a magnifying glass icon and a search button, containing text about the release of v10.7 of Fleets Analyzer.
- Getting started** (4): A section with a video player and links to 'User Guide', 'Knowledge Base', 'Training', and 'Email Support'.
- Your recently used saved searches** (5): A table listing 10 recently used saved searches.

Search Name	Time	Category	Tags
Summary-2018-10-09T02:26:25	0 day(s)	Aircraft	test, test
Detail-2018-10-09T02:25:59	0 day(s)	Aircraft	test, test
Trend-2018-10-09T02:24:15	0 day(s)	Aircraft	test, test
Summary-2018-10-09T01:54:36	0 day(s)	Companies	test, test
Companies-2018-10-09T01:53:37	0 day(s)	Companies	test, test
People-2018-10-09T01:49:12	0 day(s)	Companies	test, test
Summary-2018-10-09T01:49:05	0 day(s)	Aircraft Events	test, test
Detail-2018-10-09T01:48:05	0 day(s)	Aircraft Events	test, test
Trend-2018-10-09T01:47:52	0 day(s)	Aircraft Events	test, test
Change Columns-2018-10-09T01:21:22	0 day(s)	Aircraft	test, test

Figure 2. The homepage.

- 1 Aircraft profile search. From here you can quickly search for an individual aircraft profile (by current or old registration, and by serial number).
- 2 Company profile search. From here you can quickly search for an individual company.
- 3 Saved Search search. From here you can quickly search for and launch a previously Saved Search.
- 4 Getting Started. Contains resources to help you get the most out of Fleets Analyzer.
- 5 Recently used saved searches. You'll find your 10 most recently used saved searches here.
- 6 Messaging widget. This is where you'll find information about new features and service announcements.

## Aircraft section

The screenshot shows the Aircraft search interface. At the top, there is a date picker (1) set to 'Today', a search title 'Untitled Search\*' (2), and 'EXPORT' (3) and 'SAVE' (4) buttons. Below this is a search input field (6) containing 'e.g. On order, A320, GP7270' and an 'ADD FILTER MENU' button (7). A 'NO FILTERS APPLIED' message (8) is shown below the search field. The main content area has tabs for 'DETAIL' (9), 'SUMMARY', 'TREND', and 'PROJECTION (BETA)'. A table of aircraft data is displayed with columns: Aircraft Type, Serial Number, Aircraft Manufacturer, Aircraft Master Series, Registration, Aircraft Status, Age, and Operator. The table shows 15 rows of data for Fokker aircraft. At the bottom, there is a pagination control showing '20 items per page' and '1 - 20 of 354112 items'. A callout (5) points to a collapse/expand header toggle button.

Figure 3. The Aircraft search page.

- 1 Date picker. All information shown in the results grid is true at a single point-in-time. By default, the date picker is set to 'Today' so the results grid will show the latest data. However, you can use the date picker to pick a date in the past or the future. As you change the date, the data associated with an aircraft changes. For example, if you choose a date in the past an aircraft's age reduces, and potentially its status changes from 'In Service' to 'On Order'. If you choose a date in the future an aircraft's age increases, and potentially its status changes from 'In Service' to 'Retired'.
- 2 Search title. Displayed at the top of each section. Until you save the current search, this will display *Untitled Search\**.
- 3 Export. Once you've completed your search you might want to export the results. Use this icon to export the data to Excel.
- 4 Save options. Save the search you have created.
- 5 Collapse/expand header toggle. Once you have filtered the search, and you want to analyse the results, use this option to give more space to the results grid.
- 6 Quick Filter Select (QFS). The fastest way to filter your search, by starting to type filter values e.g. 'on order', 'a320', 'gp7270', etc.
- 7 Add Filter Menu. Launches a traditional filter dialogue window.
- 8 Filter breadbox. Displays currently applied filters. You can also remove filters from here.
- 9 Detail tab. Each row in the results grid is an individual aircraft (with any status, e.g. On Order, In Service, Retired, etc.).

- 10 Summary tab. Each row in the results grid is a group of one or more aircraft.
- 11 Trend tab. Pick trend parameters e.g. 'Total In Service', to show how these have changed over time.
- 12 Projection Tab. Pick Projection parameters e.g. A checks, B Checks, Total Retired etc. To see how these are projected to change over time (similar to Trend, but includes assumptions).
- 13 Add/Remove Column picker. There are hundreds of possible data fields associated with each individual aircraft in the Cirium database – use this option to add to, remove, or change the order of the columns shown.

## Aircraft Events section

The screenshot shows the Aircraft Events page interface. At the top, there is a date range picker (1) set to 'Anytime', a search title 'Untitled Search\*' (2), and 'EXPORT' (3) and 'SAVE' (4) buttons. Below this is a 'Find a filter' input field (6) containing 'e.g. On order, A320, GP7270' and an 'ADD FILTER MENU' button (7). A 'NO FILTERS APPLIED' message (8) is shown below the filter input. The main content area has a header with tabs for 'DETAIL' (9), 'SUMMARY' (10), 'TREND' (11), and 'PROJECTION (BETA)' (12). A table of aircraft events is displayed below, with columns for Event Date, Event Type, Serial Number, Aircraft Type, Current Master Series, and Event Description. The table contains 15 rows of data. At the bottom, there is a pagination control showing '20' items per page and '1 - 20 of 1908648 items'.

Event Date	Event Type	Serial Number	Aircraft Type	Current Master Series	Event Description
10-03-2106	Finance	858	UH-1	UH-1	Scheduled completion of finance term
30-06-2058	Retirement	AV-1	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-2	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-3	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-4	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-5	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-6	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-7	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-8	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-9	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-10	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-11	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-13	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-14	B-2	B-2A	Scheduled to be permanently withdrawn from use
30-06-2058	Retirement	AV-15	B-2	B-2A	Scheduled to be permanently withdrawn from use

Figure 4. The Aircraft Events page.

- 1 Date range picker. Each aircraft event shown in the results grid occurred at a specific point in time. By default, all events are shown (going back to our earliest aircraft event on 15<sup>th</sup> June 1946). Use the range picker to limit the date range.
- 2 Search title. Shown at the top of each section. Until you save the current search, this will display *Untitled Search\**.
- 3 Export. Exports the results of a completed search to Excel.
- 4 Save options. Saves the search you have created.
- 5 Collapse/expand header toggle. Once you have filtered the search, and you want to analyse the results, use this option to give more space to the results grid.
- 6 Quick Filter Select (QFS). The fastest way to filter your search, by starting to type filter values e.g. 'on order', 'a320', 'gp7270', etc.
- 7 Add Filter Menu. Launches a traditional filter dialogue window.
- 8 Filter breadbox. Displays currently applied filters. You can also remove filters from here.
- 9 Detail tab. Each row in the results grid is an individual aircraft event.
- 10 Summary tab. Each row in the results grid is a group of one or more aircraft events.
- 11 Trend tab. Pick trend parameters e.g. Total Deliveries, and see how they have changed over time.
- 12 Projection Tab. Pick Projection parameters e.g. A checks, B Checks, Total Retired etc. To see how these are projected to change over time (similar to Trend, but includes assumptions).

- 13 Add/Remove Column picker. There are hundreds of possible data fields associated with each individual aircraft event in the Cirium database. Use this option to add to, remove or change the order of the columns shown.

### Original, old, new, and current

All events happen at a single point in time i.e. the event date. During the event at least one aircraft parameter must change. For example, if an aircraft has just started a new lease, then the Operator will have changed. For an aircraft, there will be a set of parameters just prior to the event, just after the event, and at the current date. Just prior to an event the aircraft might have been with Operator A, just post the event it's with Operator B, but at today's date it might be with Operator C.

Typically in Fleets Analyzer we allow you to view columns for old (just prior), new (just post), and current (at today's date). Operator is a special case where we also store the Original Operator.

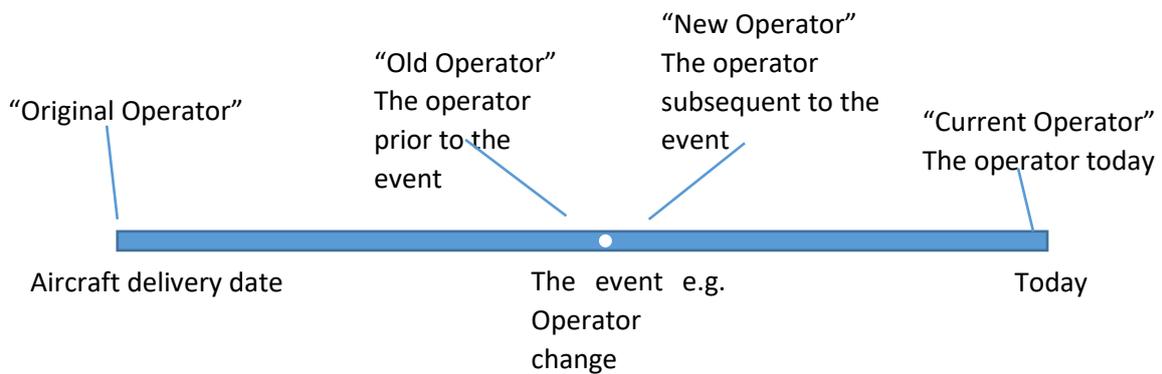


Figure 5. Original, old, new, and current.

## Companies section

Figure 6. The Companies search page.

- 1 Search title. Shown at the top of each section. Until you save the current search, this will display *Untitled Search\**.
- 2 Export. Exports the results of a completed search to Excel.
- 3 Save options. Save the search you have created.
- 4 Collapse/expand header toggle. Once you have filtered the search, and you want to analyse the results, use this option to give more space to the results grid.
- 5 Quick Filter Select (QFS). The fastest way to filter your search, by starting to type filter values e.g. 'mainline', 'in start-up', 'operating', etc.
- 6 Add Filter Menu. Launches a traditional filter dialogue window.
- 7 Filter breadbox. Displays currently applied filters. You can also remove filters from here.
- 8 Companies tab. Each row in the results grid is an individual company.
- 9 Summary tab. Each row in the results grid is a group of one or more companies.
- 10 People tab. Each row in the results grid is an individual person.
- 11 Finance & Traffic tab. Each row in the results is a history of finance and traffic information for Airlines and Airports.
- 12 Add/Remove Column picker. There are many possible data fields associated with each individual company or person in the Cirium database. Use this option to add to, remove or change the order of the columns shown.

## Maintenance section

In the Fleet Maintenance tab, each row in the results grid is a specific maintenance need for an operator. For example, if British Airways have at least 1 A320-111 with a GTCP36-300 APU, then they have an APU Overhaul need for that combination of aircraft sub series and APU. Airframe Maintenance needs, such as A Checks etc., are only shown if the Operator provides intervals for that particular combination. To see all interval data in this view, filter by Maintenance\Airframe Maintenance, and then add all the columns under the Inspection Intervals header (or simply access the Maintenance Intervals Saved Search).

In the Maintenance Contracts tab, each row in the results grid is a specific maintenance need for an operator, which is currently under contract, you can add columns to this view to see specific information about the current contract, e.g. Contract Duration, Contract Notes, Contract Type etc.

The screenshot shows a web application interface for a maintenance search. At the top, there is a search title 'Untitled Search\*' (1) and buttons for 'EXPORT' (2) and 'SAVE' (3). Below this is a search input field with the text 'Find a filter e.g. On order, A320, GP7270' (5) and a button 'ADD FILTER MENU' (6). A 'NO FILTERS APPLIED' (7) message is shown below the input. The main content area has two tabs: 'FLEET MAINTENANCE' (8) and 'MAINTENANCE CONTRACTS'. A collapse/expand header toggle (4) is located to the right of the tabs. Below the tabs is a table with columns: Operator, Aircraft Manufacturer, Aircraft Type Sub Series, Equipment Category, Service Type, Total Current Fleet, and Total Current Active Fleet. A table with 10 rows of data is visible. A button 'ADD/REMOVE METRIC' (1) is located to the right of the table. At the bottom, there is a pagination control showing '1' (1) selected, '20' items per page, and '1 - 20 of 762553 items'.

Figure 7. The Maintenance search page.

- 1 Search title. Shown at the top of each section. Until you save the current search, this will display *Untitled Search\**.
- 2 Export. Exports the results of a completed search to Excel.
- 3 Save options. Save the search you have created.
- 4 Collapse/expand header toggle. Once you have filtered the search, and you want to analyse the results, use this option to give more space to the results grid.
- 5 Quick Filter Select (QFS). The fastest way to filter your search, by starting to type filter values e.g. 'mainline', 'in start-up', 'operating', etc.
- 6 Add Filter Menu. Launches a traditional filter dialogue window.
- 7 Filter breadbox. Displays currently applied filters. You can also remove filters from here.

- 8 Fleet Maintenance tab. Each row in the results grid is a specific maintenance need for an Operator.
- 9 Maintenance Contracts tab. Each row in the results grid is a specific maintenance need for an Operator that is covered by a contract.
- 10 Add/Remove Column picker. There are many possible data fields associated with each individual company or person in the Cirium database. Use this option to add to, remove or change the order of the columns shown.

## Accidents section

The screenshot shows a search interface for accidents. At the top, there is a search title 'Untitled Search\*' (1). To the right are 'EXPORT' (2) and 'SAVE' (3) icons. Below is a search bar with a placeholder 'Find a filter e.g. Total Loss, A320, Casualties' (5) and an 'ADD FILTER MENU' button (6). A 'NO FILTERS APPLIED' indicator (7) is shown below the search bar. A 'DETAIL' tab (8) is visible above the results grid. An 'ADD/REMOVE COLUMNS' button (9) is located above the grid. The grid itself has columns: Accident ID, Accident Date, Accident Location Country, Type at Accident, Manufacturer at Accident, Operator at Accident, Serial Number, and Registr... The grid contains 37 rows of accident data. At the bottom, there is a pagination control showing '20 items per page' and '1 - 20 of 26424 items'.

Accident ID	Accident Date	Accident Location Country	Type at Accident	Manufacturer at Accident	Operator at Accident	Serial Number	Registr...
2	08-09-1958	Myanmar	Britannia	BAE Systems (BAC)	British Overseas Airways ...	12904	G-ANBC
3	11-04-1967	Canada	Convair 580	Bombardier (Canadair)	Royal Canadian Air Force	6B-3	11153
7	15-03-1975	Cambodia	Viscount	BAE Systems (BAC)	Lane Xang Air Lines	396	XW-TDI
11	15-05-1978	United States	Jetstream	Handley Page	Pacific Coast Airlines	223	N12223
13	05-07-1978	Portugal	CASA C-212	Airbus Defence & Space	Portuguese Air Force	50	6518
15	01-06-1979	Congo (Democratic Republic)	Argosy	BAE Systems (HS)	OTRAG Range Air Service	6778	9Q-COE
20	14-02-2002	Laos	Y-12	Harbin Aircraft Manufacturing ...	Lao Airlines	0043	RDPL-3
21	09-03-1991	United States	707	Boeing	Avianca	19741	HK-140
22	19-11-1990	Canada	DHC-7	Bombardier (de Havilland)	Air BC	036	C-GJPI
23	05-07-1975	Bulgaria	Tu-134	Tupolev OAO	Balkan Bulgarian Airlines	8350405	LZ-TUA
28	28-01-1983	Papua New Guinea	Nomad	ASTA	Papua New Guinea Defen...	112	P2-014
29	30-04-1968	Pakistan	C-130/L-100 Hercules	Lockheed Aircraft Corp	Pakistan Air Force	4145	64145
30	25-07-1974	Unknown Country	Fokker F.27	Fokker	Air France	10389	F-BPUI
32	29-09-1967	Italy	Comet	BAE Systems (HS)	Sudan Airways	6463	ST-AAx
33	06-01-2002	Spain	A321	Airbus	Aero Lloyd	0792	D-ALAF
34	06-01-2002	Spain	737 (CFML)	Boeing	HapagFly	24125	D-AHLJ
35	08-03-2002	India	A300	Airbus	Indian Airlines	111	VT-EFW
36	12-01-2002	Colombia	ATR 42	ATR	ACES Colombia	510	VP-BVE

Figure 8. The Accidents search page.

- 1 Search title. Displayed at the top of each section. Until you save the current search, this will display *Untitled Search\**.
- 2 Export. Once you've completed your search you might want to export the results. Use this icon to export the data to Excel.
- 3 Save options. Save the search you have created.
- 4 Collapse/expand header toggle. Once you have filtered the search, and you want to analyse the results, use this option to give more space to the results grid.
- 5 Quick Filter Select (QFS). The fastest way to filter your search, by starting to type filter values e.g. 'fatal accident', 'total loss', etc.
- 6 Add Filter Menu. Launches a traditional filter dialogue window.
- 7 Filter breadbox. Displays currently applied filters. You can also remove filters from here.
- 8 Detail tab. Each row in the results grid is an individual accident.
- 9 Add/Remove Column picker. There are 165 data fields associated with each individual accident in the Cirium database – use this option to add to, remove, or change the order of the columns shown.

## Deals section (Add-on)

Deals is an add-on section and is not part of the standard Fleets Analyzer subscription. To enquire about getting access to Deals, please email Global Client Services ([support@Cirium.com](mailto:support@Cirium.com)).

The screenshot shows the 'Deals' search interface. At the top, there is a search title 'Untitled Search\*' (1) and buttons for 'EXPORT' (2) and 'SAVE' (3). Below is a search input field with a placeholder 'Find a filter e.g. ECA / EXIM, A320, Deal Status' (5) and an 'ADD FILTER MENU' button (6). A 'NO FILTERS APPLIED' message (7) is shown below the search field. The main content area has three tabs: 'DETAIL' (8), 'SUMMARY' (9), and 'AIRCRAFT IN DEALS' (10). A table of deal results is displayed, with columns for Deal ID, Deal Start Date, Deal Status, Deal Structure, Deal Completion Date, Number of Aircraft in Deal, Deal Indicative Aircraft Value (US\$m), and Rej. A table with 11 columns and 15 rows of deal data is shown. At the bottom, there is a pagination control showing '20 items per page' and '1 - 20 of 10818 items'. A callout (11) points to the 'ADD/REMOVE COLUMNS' button in the top right of the table area.

Deal ID	Deal Start Date	Deal Status	Deal Structure	Deal Completion Date	Number of Aircraft in Deal	Deal Indicative Aircraft Value (US\$m)	Rej
11609	01-11-2016	Completed	Purchase	30-11-2016	1	1.74	-
11970	01-10-2016	Mandated	Purchase	-	1	2.35	-
11981	01-10-2016	Completed	Purchase	31-10-2016	1	5.10	-
11946	01-10-2016	Mandated	Operating Lease - ...	-	5	630.00	-
11963	01-10-2016	Completed	Purchase - Lease...	31-10-2016	1	33.50	-
11969	01-10-2016	Mandated	Purchase	-	1	13.35	-
11982	01-10-2016	Completed	Purchase	31-10-2016	1	2.00	-
11985	01-10-2016	Mandated	Purchase	-	1	1.77	-
11988	01-10-2016	Completed	Purchase	31-10-2016	1	11.05	-
11987	01-10-2016	Mandated	Tax Lease	-	2	85.86	-
11994	01-10-2016	Mandated	Purchase	-	1	5.45	-
11951	01-10-2016	Completed	Operating Lease - ...	31-10-2016	1	148.00	-
11993	01-10-2016	Completed	Purchase	31-10-2016	2	23.70	-
11848	01-09-2016	Completed	Purchase	30-09-2016	1	25.80	-
11851	01-09-2016	Completed	Purchase - Lease	30-09-2016	2	21.80	-

Figure 9. The Deals search page.

- 1 Search title. Displayed at the top of each section. Until you save the current search, this will display *Untitled Search\**.
- 2 Export. Once you've completed your search you might want to export the results. Use this icon to export the data to Excel.
- 3 Save options. Save the search you have created.
- 4 Collapse/expand header toggle. Once you have filtered the search, and you want to analyse the results, use this option to give more space to the results grid.
- 5 Quick Filter Select (QFS). The fastest way to filter your search, by starting to type filter values e.g. 'deal status', 'ECA / EXIM', etc.
- 6 Add Filter Menu. Launches a traditional filter dialogue window.
- 7 Filter breadbox. Displays currently applied filters. You can also remove filters from here.
- 8 Detail tab. Each row in the results grid is an individual deal.
- 9 Summary tab. Each row in the results grid is a group of one or more deals.
- 10 Aircraft in Deals tab. Each row in the results grid is an aircraft that is part of a deal.
- 11 Add/Remove Column picker. There are hundreds of possible data fields associated with each individual deal – use this option to add to, remove, or change the order of the columns shown.

## Saved search page

The saved search page is accessible from the navigation bar.

The screenshot shows a web interface for saved searches. At the top, there are three tabs: 'MY SEARCH' (1), 'SHARED BY COLLEAGUES' (2), and 'SHARED BY CIRIUM' (3). Below the tabs is a table with columns: 'Name' (4), 'Section', 'Description', and 'Last edited'. The 'Name' column contains search names with timestamps. The 'Section' column has a dropdown menu. The 'Description' column contains descriptions. The 'Last edited' column shows dates. To the right of each row are three icons: a share icon (5), an edit icon (6), and a delete icon (7).

Name	Section	Description	Last edited			
Summary-2018-10-09T02:26:25	Aircraft	Description-2018-10-09T02:26:25	09/10/2018	Share	Edit	Delete
Detail-2018-10-09T02:25:59	Aircraft	Description-2018-10-09T02:25:59	09/10/2018	Share	Edit	Delete
Trend-2018-10-09T02:24:15	Aircraft	Description-2018-10-09T02:24:15	09/10/2018	Share	Edit	Delete
Summary-2018-10-09T01:54:36	Companies	Description-2018-10-09T01:54:36	09/10/2018	Share	Edit	Delete
Companies-2018-10-09T01:53:37	Companies	Description-2018-10-09T01:53:37	09/10/2018	Share	Edit	Delete

Figure 10. The saved search page.

- 1 My Searches tab. Your saved searches appear here.
- 2 Shared by colleagues. Searches shared by colleagues appear here.
- 3 Shared by Cirium. Searches shared by Cirium appear here.
- 4 Search name column. Clicking on the search name will run the search.
- 5 Share column. Click the share icon in this column to share your search with colleagues.
- 6 Edit column. Edit the search name or description.
- 7 Delete column. Removes the search. **Please note, if you delete a search which you have shared, it will no longer be available for colleagues to run.**

## Search results grid

Aircraft Type	Serial Number	Aircraft Manufacturer	Aircraft Master Series	Registration	Aircraft Status	Age
A320	0001	Airbus	A320	F-WWBA	In Service	27.
A320	0029	Airbus	A320	JY-JAC	In Service	25.
A320	0045	Airbus	A320	VT-EPB	In Service	25.
A320	0046	Airbus	A320	VT-EPC	In Service	25.
A320	0050	Airbus	A320	VT-EPG	In Service	25.
A320	0051	Airbus	A320	VT-EPH	In Service	25.
A320	0053	Airbus	A320	N621AW	In Service	25.
A320	0054	Airbus	A320	N622AW	In Service	25.
A320	0055	Airbus	A320	N624AW	In Service	25.
A320	0056	Airbus	A320	VT-EPI	In Service	25.
A320	0059	Airbus	A320	C-FDQQ	In Service	24.
A320	0064	Airbus	A320	N625AW	In Service	25.
A320	0065	Airbus	A320	N626AW	In Service	25.
A320	0067	Airbus	A320	ZS-GAO	In Service	25.
A320	0068	Airbus	A320	C-FDQV	In Service	24.
A320	0069	Airbus	A320	D-AIPA	In Service	25.
A320	0070	Airbus	A320	D-AIPB	In Service	25.
A320	0071	Airbus	A320	D-AIPC	In Service	25.
A320	0072	Airbus	A320	D-AIPD	In Service	25.

Figure 11. The search results grid.

- 1 Tab bar. Jump between Detail, Summary, and Trend views.
- 2 Collapse/expand header toggle. Once you have filtered down to your required results, hide the filter section and give more space to the results grid.
- 3 Add/Remove columns button. Add, remove, or rearrange grid columns.
- 4 Column option dropdown. Functions that can be performed on a particular column can be accessed via the 'hamburger' icon (☰) in the column header. This includes sorting, etc.
- 5 Number of results. Number or rows included in your search results.

## Adding, rearranging, and removing columns

The field picker is a generic control used in Fleets Analyzer whenever you need to choose parameters from a long list. The version shown below is used when you have chosen to add, remove or rearrange the columns displayed in the grid.

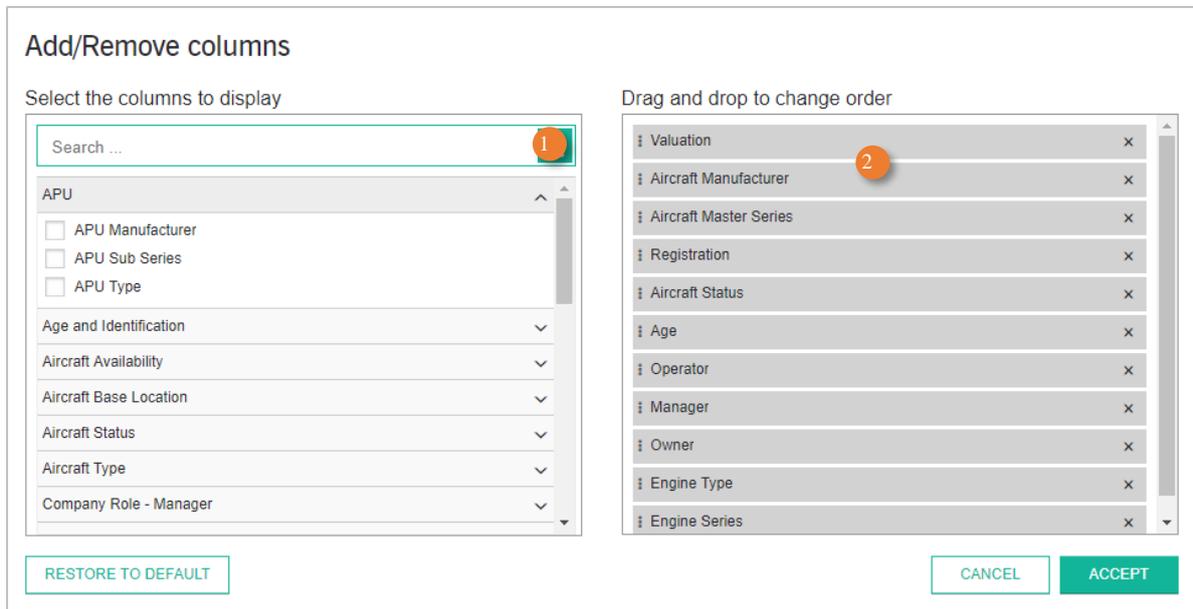


Figure 12. The Add/Remove columns picker.

- 1 Find-as-you-type. The quickest way to find the column you want using the search box at the top of the list.
- 2 Selected list. Columns you've chosen are displayed here. From this list, you can rearrange the column order (via drag and drop), or quickly remove columns.

## Grouping data

This version of the field picker is used when adding, removing, or rearranging the groups on summary tabs.

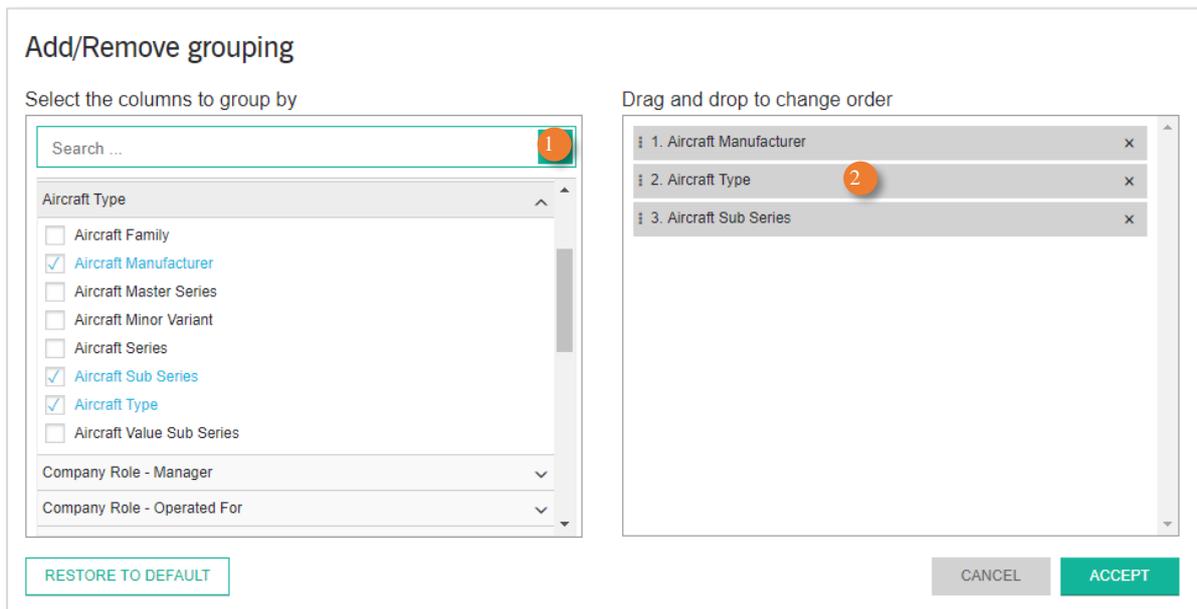


Figure 13. The Add/Remove groups picker.

- 1 Find-as-you-type. The quickest way to find the grouping parameter you want, using the search box at the top of the list.
- 2 Selected list. Groups you've chosen are displayed here. From this list, you can rearrange the group order (via drag and drop), or quickly remove groups.

## Viewing charts

Charting is currently only available on Summary tabs. We retain the groups you chose in the summary grid. The default parameter displayed in the chart will be the left-most column you chose to view in the grid view. The drop-down list allows you to quickly change the charted parameter. When you do this, the data will be sorted, and you'll be shown the top 20 results in the chart in descending order.

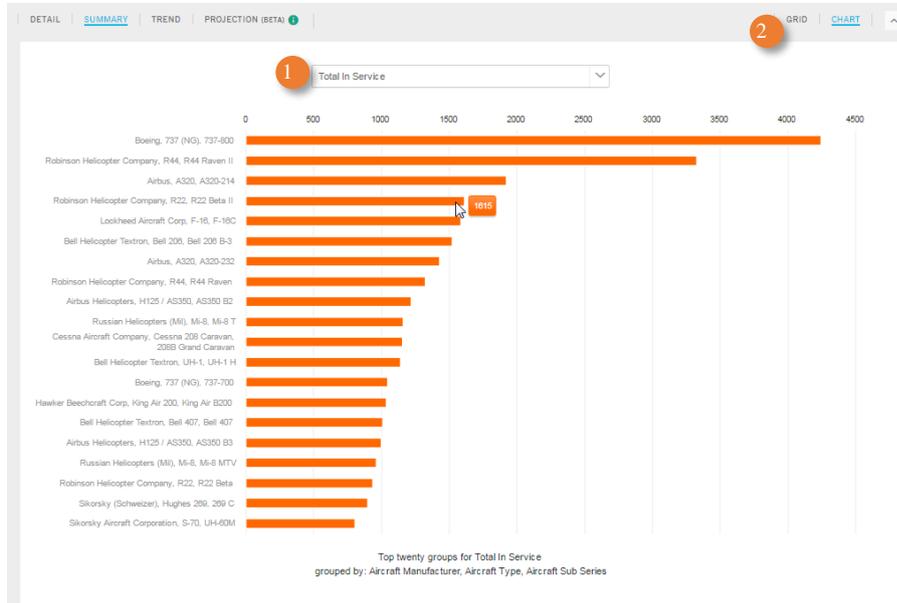


Figure 14. Chart view on the summary tab.

- 1 Chart dropdown. Quickly change the charted parameter.
- 2 Chart/grid toggle. Switch between grid and chart view.

## Filtering search results

One of the things that differentiates Fleets Analyzer from a typical search application is the very large number of filter categories and filter values that a user can choose from. Consider a company such as British Airways: using Fleets Analyzer you can filter aircraft (or aircraft events) associated with British Airways as an operator, manager, owner, operator group, sub-lessor, original operator, and even via 'any-role'. And that's just a single company! We have more than 148,000 companies in our database, the majority of which are associated with aircraft via any of eight different roles. All this adds up to a lot of filter values, and therefore, a potential discoverability issue i.e. how do we know that a filter value even exists in a filter category? Our solution to this problem was to build the Quick Filter Select (QFS).

### Using the Quick Filter Select (QFS)

The QFS allows you to find a filter simply by typing the name into the QFS field. In the screenshot shown in Figure 15, you can see that the user has started to type 'delta air lines'. In the drop down you can see that we display all possible filtering options for Delta Air Lines. If your required filter is at the top of the list, pressing enter on the keyboard will add that filter and run the search.

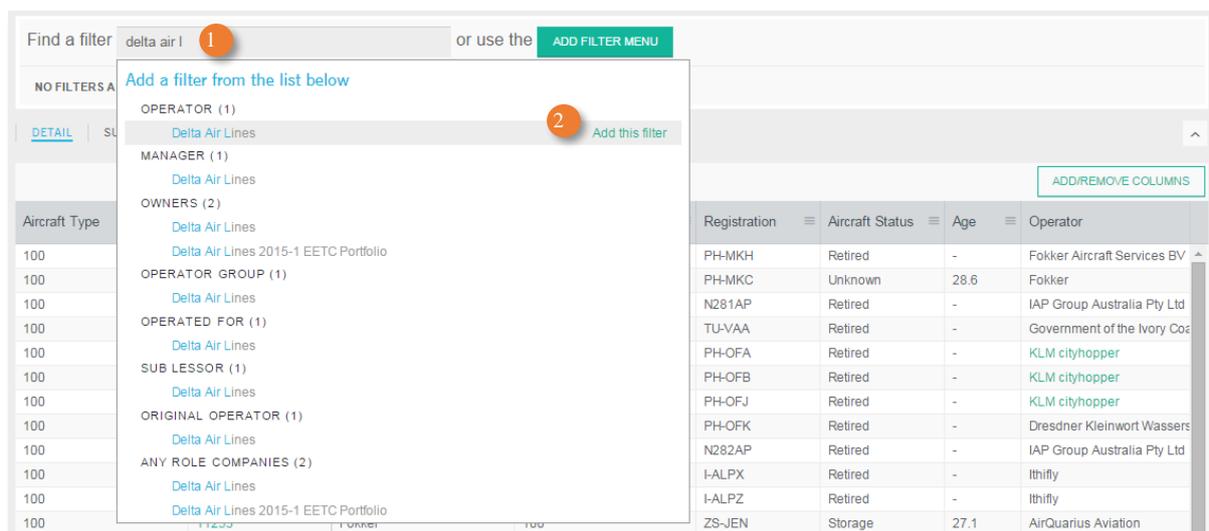


Figure 15. The Quick Filter Select (QFS)

- 1 QFS field. Simply start to type the name of a filter value here e.g. 'Delta', 'a320', etc., and we'll show you exactly which filter groups it exists within.
- 2 Selected filter value. As you type, the highest filter value in the list is always selected. When this matches your required filter, hit enter to add this to the search.

## Using the Add Filter Menu

Not all filters can be applied via the QFS. Complex filters such as those that filter between a range of values have to be implemented using more traditional controls. The Add Filter Menu is the place to go to browse the full set of filters (all the filters can be found here, whereas the QFS contains a subset).

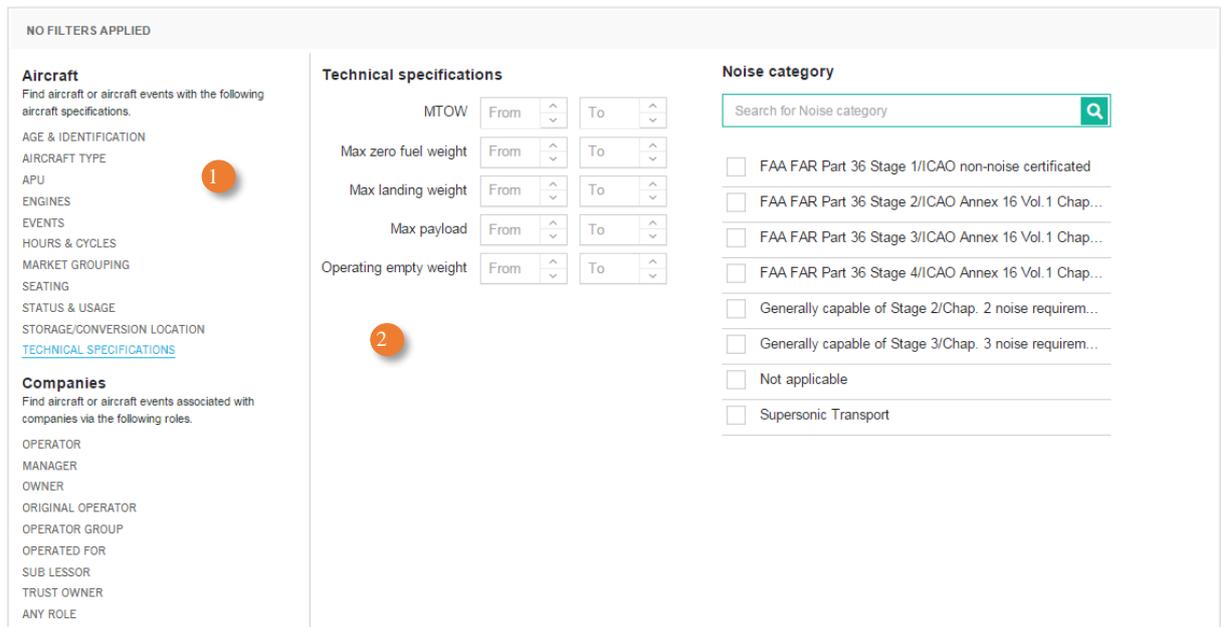


Figure 16. The Add Filter Menu.

- 1 Menu. On the left, you'll find the filter menu. We group related filters together –click on the required item on the left to see the filters on the right.
- 2 Filter page. Each filter page groups together related filters, for example on the Operator filter page you'll find filters for operator location, name, category, type, and status.

## Filter breadbox

Once you've applied your filters, you'll want them clearly visible while you view the search results.

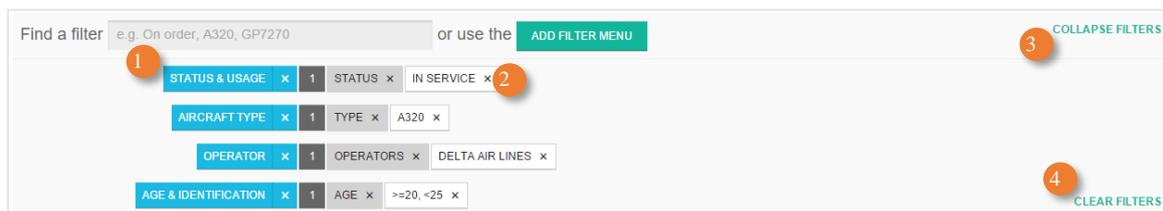


Figure 17. The filter breadbox.

- 1 Filter category. Clicking on the blue filter category will take you to the relevant filter page in the Add Filter Menu.
- 2 Removing filters. Quickly remove any filter from the current search by clicking on the 'x'.
- 3 Collapse filters. Collapse the filter breadbox into a mini or summary view.
- 4 Clear filters. Quickly clear all currently applied filters.

## Exporting search results

After you've filtered your results, and customised your grid columns, you'll want to export your data. We currently support exporting to Excel, up to a row limit of 100,000. The columns in the exported Excel file will match the columns you've chosen to view in the results grid. Any filters you've used will also be included in the exported Excel file, so you'll have a full audit trail of how the results were generated.

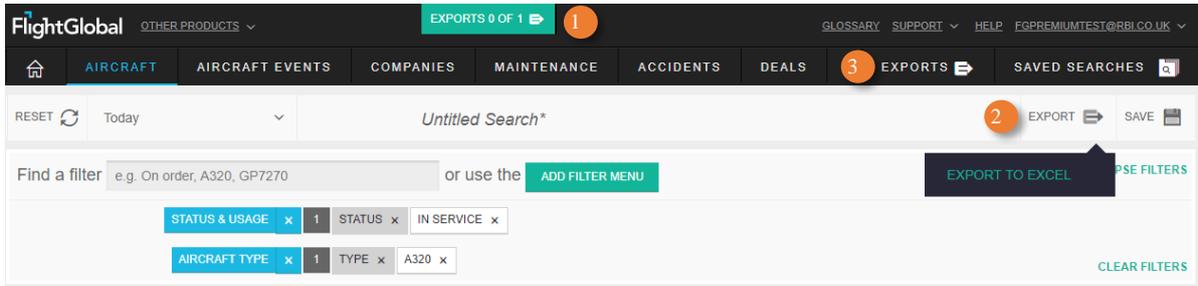


Figure 18. The export notification, and export icon.

- 1 Export notification. After you have chosen to export your search results, this notification will let you know when the export is ready to be downloaded.
- 2 Export icon. Starts the export process.
- 3 Exports page. If you have exports pending, click on the export notification. If you want to view your previous exports, visit the Exports page.

Name	Status	Format	Size	Requested
<a href="#">Companies Summary 260917</a>	Ready	Excel	3.75 kB	2017-09-26 14:17
<a href="#">Aircraft Detail 260917</a>	Ready	Excel	1.67 MB	2017-09-26 11:17
<a href="#">Aircraft Summary 260917</a>	Ready	Excel	216.99 kB	2017-09-26 10:41
<a href="#">Projection Summary 260917</a>	Ready	Excel	4.88 kB	2017-09-26 10:25
<a href="#">Trend Summary 260917</a>	Ready	Excel	94.96 kB	2017-09-26 10:08
<a href="#">Aircraft Detail 260917</a>	Ready	Excel	2.56 MB	2017-09-26 10:02
<a href="#">Aircraft Detail 260917</a>	Ready	Excel	942.26 kB	2017-09-26 09:59

Figure 19. The exports tab within the saved search page.

- 1 File link. Once your export has been generated, the filename will turn green. Clicking this link will begin the download. The location of the download is determined by your browser's usual download location setting.
- 2 Status. Your export is available to download once the status displays 'ready'.

## Saving a search

On Fleets Analyzer, there is a very clear distinction between an Export and a Search. An export is a set of search results e.g. a list of aircraft along with their associated parameters. A search is the query used and the output configuration i.e. the filters, date, grid columns, grouping, trend range, etc. When you choose to save a search you are saving the query, the grid configuration on every section of Fleets Analyzer, and the section you were on when you saved the search. When you choose to open a previously saved search, the only thing that will change is the results that you will see.

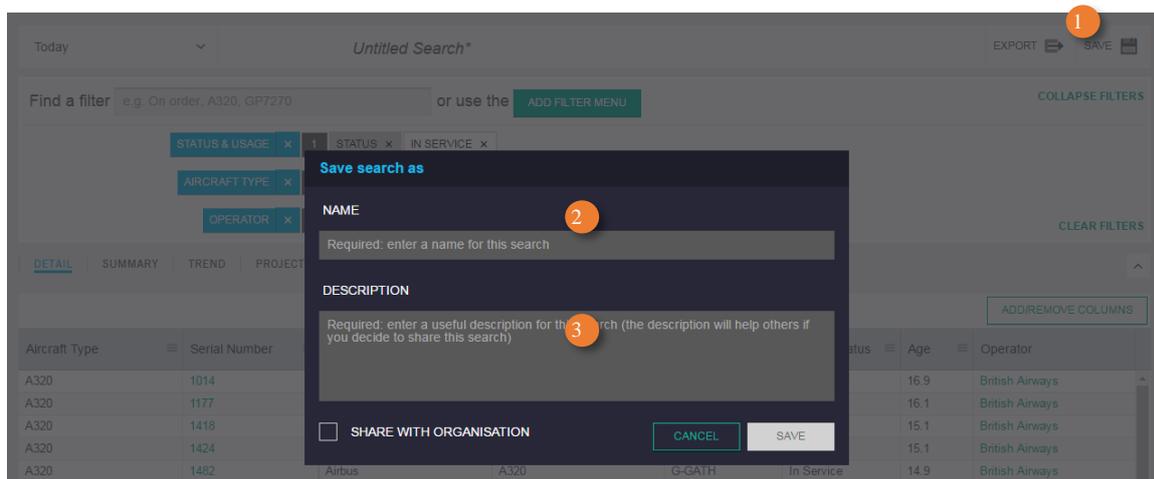


Figure 20. The Save As dialogue.

- 1 Save icon. Once you have configured the search the way you want it, you can use the search icon to save the search.
- 2 Search name. Give your search a name. Each name has to be unique to you.
- 3 Search description. A description is mandatory; this is especially important if you decide to share the search with your colleagues.

## Sharing a saved search

Once you have saved your search, if you believe that other Fleets Analyzer users within your organisation might find it useful, you can make the search available to them by clicking the share icon alongside the search on the Saved Search page. If you do this, then your colleagues will see the search on their Shared By Colleagues tab on their Saved Search page. You will remain the owner of the search, and any changes you make to the search will automatically be available to other users within your organisation. **If you delete a search which you have shared, it will no longer be available for your colleagues to run.** If a colleague opens and modifies a search that you have shared with them, this will not affect your search. That colleague has created a new search which they will have to save.

Name	Section	Description	Last edited	
<input type="text"/>	<input type="text"/>	<input type="text"/>		
Aircraft Projection save search	Aircraft	Aircraft Projection save search	25/09/2017	  
test	Aircraft	test	25/09/2017	  
Current Fleet A320-B737-A330-ATR-Ejet Family	Aircraft	Current Fleet...more	15/09/2017	  
L-3 Standard	Aircraft	Service, Order, & Options for...more	05/09/2017	  
Linefit Base for Seat Market Forecast	Aircraft	Query to obtain backlog data...more	30/08/2017	  

Figure 21. The My Searches tab of the saved search page.

-  Share column. If you wish to share your search with colleagues, click the share icon in this column. **Please note, if you delete a search which you have shared, it will no longer be available for colleagues to run.**

## Viewing historic data

All the information shown in the results grid of the Aircraft section is true at a single point-in-time. By default, the date picker is always set to the current date, so in the results grid, you'll always see the latest data. However, you can use the date picker to pick a date in the past, or even the future. As you change the date you'll see the data associated with an aircraft change. For example, if you choose a date in the past the aircraft age reduces, and potentially its status changes from In Service to On Order. If you choose a date in the future the age increases, and potentially its status changes from In Service to Retired.

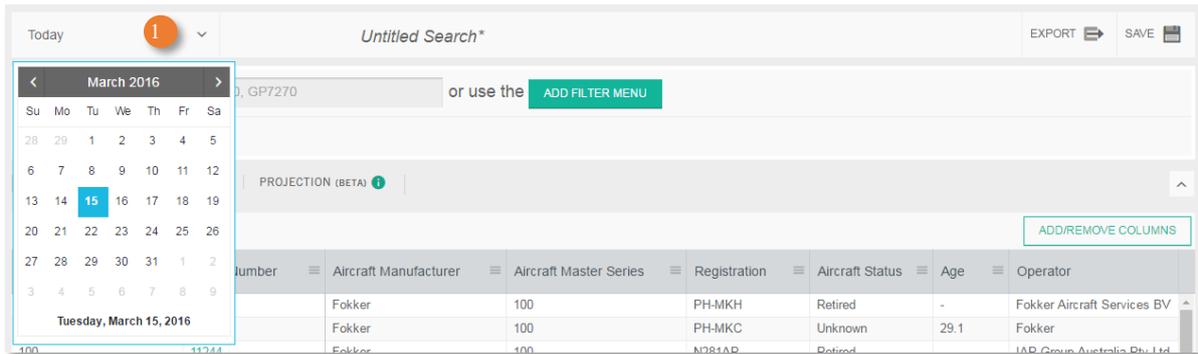


Figure 22. The date picker on the Aircraft section.

- 1 Date picker. To see how the world's fleet looked in the past, or in the future, change the date here.

## Using Trend

The Trend tab is available on both the Aircraft and Aircraft Events sections. Although it's available in two locations it's essentially the same page and offers the same features (there is a requirement to see Aircraft parameters such as the number of aircraft In Service, alongside Aircraft events such as Deliveries). Trend allows you to see how parameters have changed in the past or are due to change in the future based on known events. For example, if we know an aircraft is due to retire 2 months from today, if you were to choose to trend the statuses of In Service and Retired, then you would see the number of In Service reduce by one, and the number of Retired increase by one in two months' time.

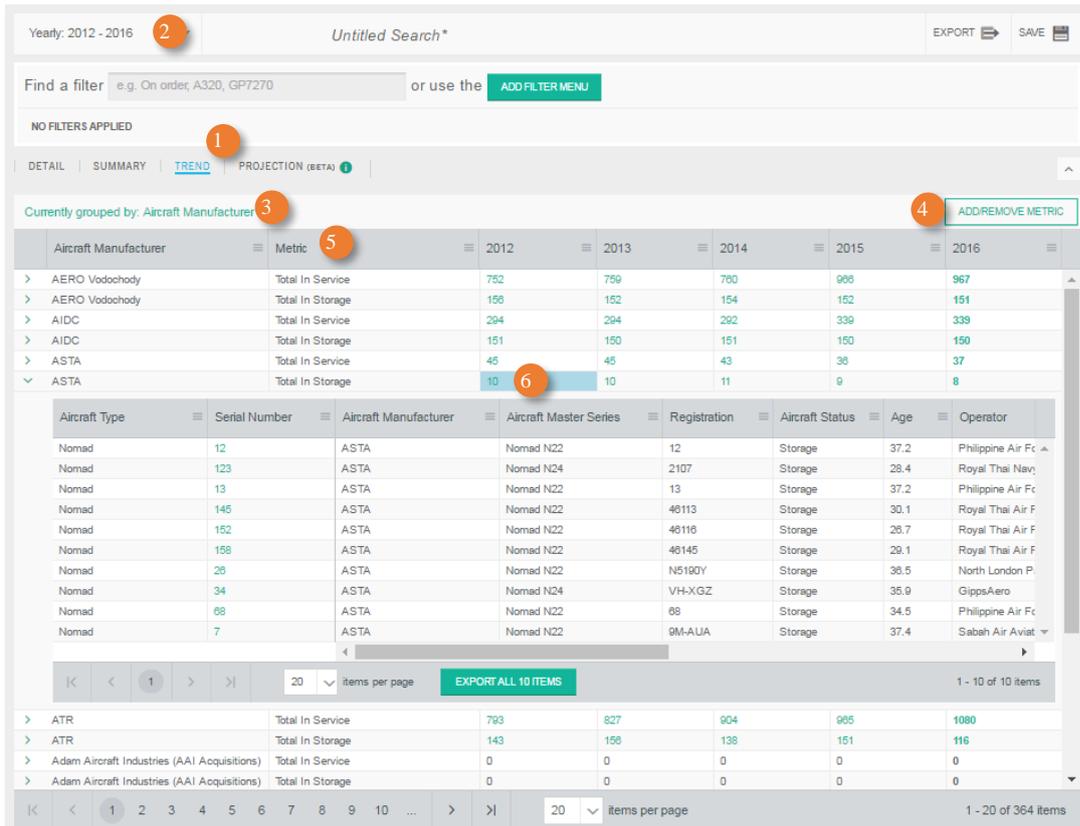


Figure 23. The Trend tab showing an expanded grid.

- 1 Trend tab. To access trend use the trend tab found in the Aircraft and Aircraft Events sections.
- 2 Trend date range picker. Set the date range, as well as the intervals i.e. monthly, quarterly, or annually.
- 3 Grouping. In order to trend data, you must first choose a grouping parameter.
- 4 Add/Remove Trend Metric button. Choose which parameters you wish to trend.
- 5 Trend metric column. Currently selected trend metrics.
- 6 Expanding the grid. Clicking a cell will open a grid within the grid. If you click on a cell which contains aircraft status parameters e.g. 'In Service', then you will see the aircraft in service, **along with the aircraft parameters as they were at the end of the interval period**. If you click on a cell which contains aircraft events e.g. 'Deliveries', then you will see the events **along with the event parameters as they were at the time of the event i.e. a point in time during the interval period**.

## Using Projection

Projection is very similar to Trend but it also allows you to see how aircraft attributes (status, operator etc.) have changed in the past and are due to change in the future. Unlike Trend, Projection will include some assumptions when calculating future changes. In particular:

- When looking at retired aircraft in Trend view, only known retirement events are considered. In Projection, known retirement events are supplemented with retirement events based upon assumptions. For example, all widebody passenger jets are assumed to retire at 25yrs, 85,000hrs, or 40,000cycles.
- Aircraft currently with status Storage are assumed to return to service tomorrow.

Aircraft Type	Metric	2016	2017	2018	2019	2020
> A320	Average Period Hours	2343.21	2408.94	2219.53	2369.23	2311.26
> A320	Total A Checks (projected)	211	262	269	291	298
> A320	Total In Service	75	75	86	92	94

Figure 24. The Projection Tab.

- 1 Projection tab. To access projection use the Projection tab found in the Aircraft and Aircraft Events sections. **Please note that Projection is currently available as a Beta version. Once Projection is released from Beta, its availability will depend upon your subscription.**
- 2 Projection date range picker. Set the date range, as well as the intervals i.e. monthly, quarterly, or annually.
- 3 Grouping. In order to project data, you must first choose a grouping parameter.
- 4 Add/Remove Projection Metric button. Choose which parameters you wish to project.
- 5 Retirement assumptions. Click here to see the retirement rules applied to various aircraft types.
- 6 Projection metric column. Currently selected projection metrics.

# The Glossary

The glossary is designed to contain definitions for each term we use within Fleets Analyzer. We're continually adding and refining the definitions.



Figure 25. The Glossary link on the header bar.

- 1 Glossary link. The glossary can be accessed from every page on Fleets Analyzer via the link on the header bar.

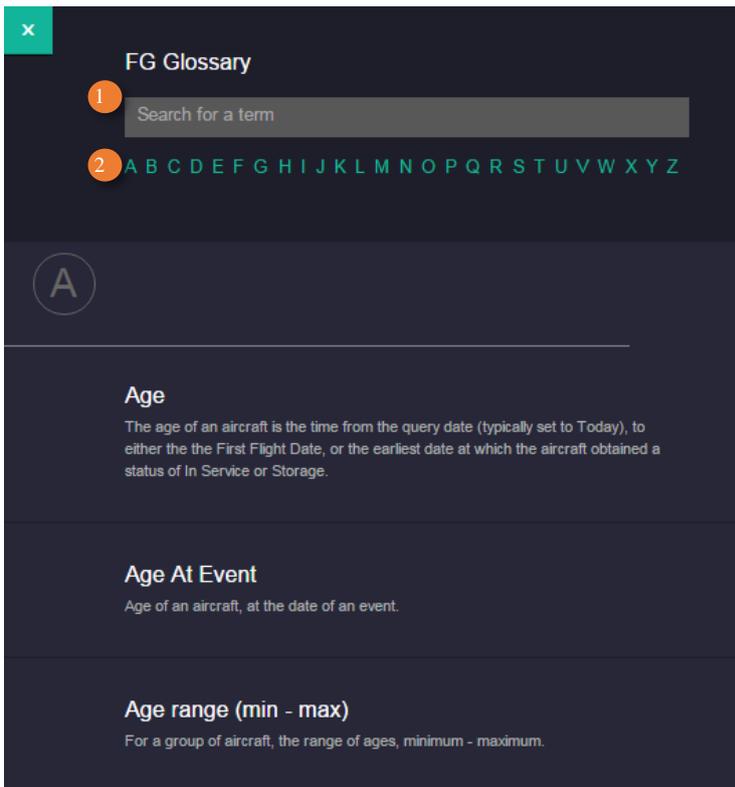


Figure 26. The Glossary.

- 1 Search box. Quickly filter the definitions.
- 2 Links. Jump to terms beginning with that letter in the glossary.

## Add-on columns

In addition to the standard columns available as part of Fleets Analyzer, the following additional add-ons are available. To purchase these additional add-ons, please contact your Cirium account manager.

### Aircraft Values

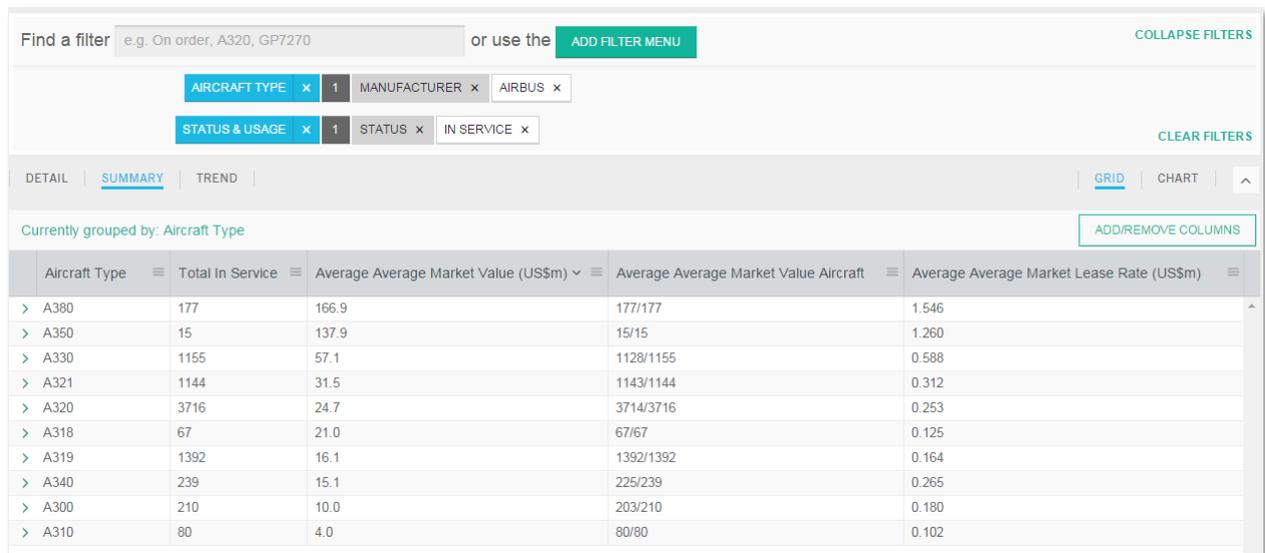
Average Market Value and Average Market Lease Rates are added to the aircraft profiles and as columns to the Aircraft detail and Summary views. The values are 180-day rolling averages and are not specific (representing generic specification of the aircraft of a given year of build). Definitions below provide detail on how the average values are calculated.

**Average Market Value (US\$m).** Reflects an 180-day rolling average of the Half-Life Market Value for an aircraft of that vintage with the Ascend baseline specifications for that type and variant (i.e. not spec-adjusted). For aircraft that are not yet built, it reflects the average value of that aircraft had it existed today (year of build = current year).

**Average Market Lease Rate (US\$m).** Reflects an 180-day rolling average of Market Lease Rates for an aircraft of the same vintage leased to an average airline credit. For aircraft that are not yet built, it reflects the average lease rate that could be expected of that aircraft if it were in existence today (year of build = current year).

### Example - Aircraft values

The example below shows in-service Airbus aircraft, grouped by Type.



Aircraft Type	Total In Service	Average Average Market Value (US\$m)	Average Average Market Value Aircraft	Average Average Market Lease Rate (US\$m)
> A380	177	166.9	177/177	1.546
> A350	15	137.9	15/15	1.260
> A330	1155	57.1	1128/1155	0.588
> A321	1144	31.5	1143/1144	0.312
> A320	3716	24.7	3714/3716	0.253
> A318	67	21.0	67/67	0.125
> A319	1392	16.1	1392/1392	0.164
> A340	239	15.1	225/239	0.265
> A300	210	10.0	203/210	0.180
> A310	80	4.0	80/80	0.102

Figure 27. New Aircraft Values columns on the Aircraft Summary page

## Projection methodology

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Note: As well as the Projection feature itself currently being in Beta, this Projection Methodology chapter of the user guide is also in a Beta.

### Fleet Projection

As discussed briefly in the previous section, the Projection feature of Fleets Analyzer differs from the Trend feature only in the fact that Projection supplements our database of known events, with events based upon assumptions.

Let's consider the scenario where we are interested in the number of aircraft with a status of "retired":

- **Trend tab:** only known retirement events can change an aircraft's status to "retired" e.g. aircraft with registration 12345 is due to retire on 23/11/2019.
- **Projection tab:** In addition to known retirement events, we also assume that all commercial widebody jets retire when they reach 25 years, 85'000 hours, or 20'000 cycles. This assumption ensures that all aircraft in the Projection view will retire at a realistic point in the future.

Another assumption we make as part of Projection is that all aircraft with a status of "storage" as at today's date, are assumed to remain in storage (unless we specifically know of a future event that would bring them out of storage)<sup>1</sup>.

By including retirement assumptions in Projection we are able to provide a far more credible view of an operator's future in-service fleet. But producing realistic fleet numbers is only one part of Projection; the true power of Projection is its ability to calculate the number of maintenance checks required for various groups of aircraft. This is possible by combining the in-service fleet projections with maintenance intervals rules and future calculated hours & cycles.

### Maintenance Projection

With our database of aircraft events, many of which have a direct effect on the size and status of a fleet e.g. Deliveries, lease ends, sales, retirements (real and assumed) etc. we are able to make very good predictions of future in-service fleet sizes. We also have a database of the maintenance intervals for specific aircraft sub-series with specific operators. These maintenance intervals govern when aircraft are required to have their maintenance checks e.g. B-Checks etc. We also have a database of individual aircraft historical utilisation, which we use to estimate average daily hours and cycles for aircraft in the future. By combining these averages with projected retirements and the maintenance interval rules we are able to make good predictions for the number of future maintenance checks required for various groups of aircraft.

### Projecting Hours and Cycles

The key to being able to project the number of required maintenance checks is the ability to reliably project the future hours and cycles for individual aircraft.

#### When we have real hours and cycles data

For us to extrapolate an aircraft's hours and cycles data using real historic data, there are a few conditions that must be met. Firstly, we must have data for at least 12 months. Secondly, during the most recent 12-month period for which we have real data, the aircraft must have had a status of in-

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<sup>1</sup> This rule changed from the previous rule where all currently stored aircraft were immediately taken out of storage.

service for more than 6 months. If these conditions are met, then the hours and cycles extrapolation will be based upon the previous 12 months' average rate. E.g. We have 5 years of hours and cycles data for an aircraft from 2010 – 2015; for the last 12 months (i.e. 2015) the aircraft has been in service; in this case the hours and cycles are assumed to continue at the same rate as during 2015.

### When we have no real data

Clearly when a new aircraft is due to be delivered to an operator there is no historic hours and cycles data on which to base an extrapolation. In this scenario we attempt to apply the following in order of precedence:

1. Operator / Aircraft Series. Set the Average Hours and Cycles for the aircraft to the average for aircraft with the same Operator and Aircraft Series.
2. Country / Aircraft Series. Set the Average Hours and Cycles for the aircraft to the average for aircraft with the same Country and Aircraft Series.
3. Region / Aircraft Series. Set the Average Hours and Cycles for the aircraft to the average for aircraft with the same Region and Aircraft Series.
4. Aircraft Series. Set the Average Hours and Cycles for the aircraft to the global average for aircraft with the same Aircraft Series.
5. Operator / Aircraft Type. Set the Average Hours and Cycles for the aircraft to the average for aircraft with the same Operator and Aircraft Type.
6. Country / Aircraft Type. Set the Average Hours and Cycles for the aircraft to the average for aircraft with the same Country and Aircraft Type.
7. Region / Aircraft Type. Set the Average Hours and Cycles for the aircraft to the average for aircraft with the same Region and Aircraft Type.
8. Aircraft Type. Set the Average Hours and Cycles for the aircraft to the global average for aircraft with the same Aircraft Type.
9. Market Class. Set the Average Hours and Cycles for the aircraft to the global average for aircraft with the same Market Class.

### Some Projection examples

#### Example 1

The graph in Figure 28 displays the hours accumulated by an aircraft over time. The solid orange line represents the known flying hours of an aircraft, and the dashed orange line represents the projected flying hours for the same aircraft. In this example, it is a relatively new aircraft (just over 1-year-old) that has been accumulating hours at a fixed rate, so the projected hours are assumed to accumulate at the same rate.

In this example, the only maintenance rule we're considering is the number of hours. This particular sub-series of aircraft, with its current operator is due an A-Check after every 700hrs of flying time. In reality, of course, checks would be due based upon hours, cycles, or a fixed time period, but to keep it simple we're only going to consider hours for these examples (Fleets Analyzer obviously takes all the interval rules into account). So in this example, the aircraft would be due an A-Check in Q2 and the following Q1.

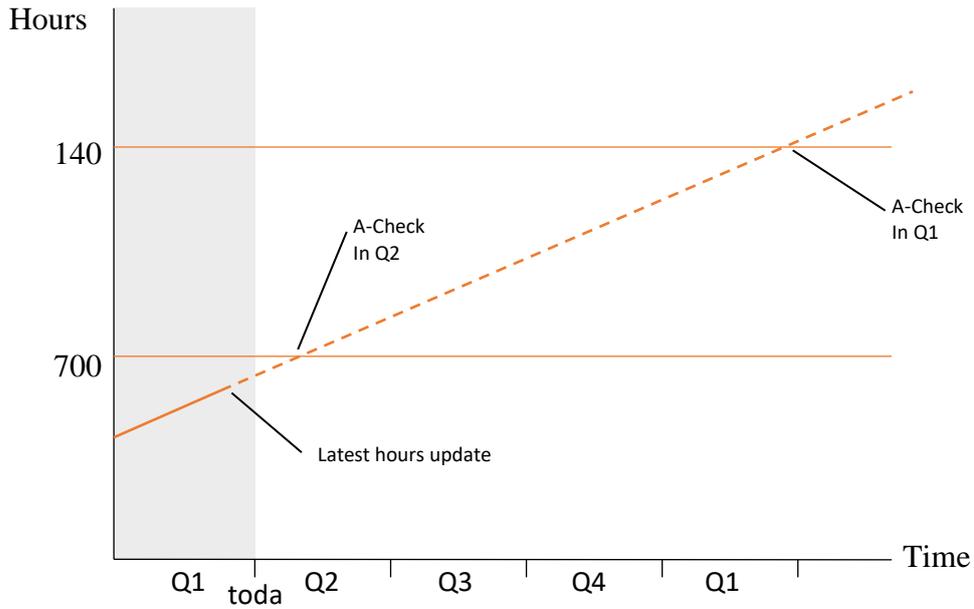


Figure 28. Projecting A-Checks based upon projected hours.

### Example 2

In the scenario displayed in Figure 29, an operator is expecting 2 new aircraft (each of a different sub-series) to be delivered at the end of Q2. The operator has no other aircraft of either sub-series, so in order to project the hours we look at the average rate of hours accumulated by the same sub-series across all other operators within the same country. In this example, each sub-series also has a different set of interval rules i.e. every 700hrs, and every 900hrs.

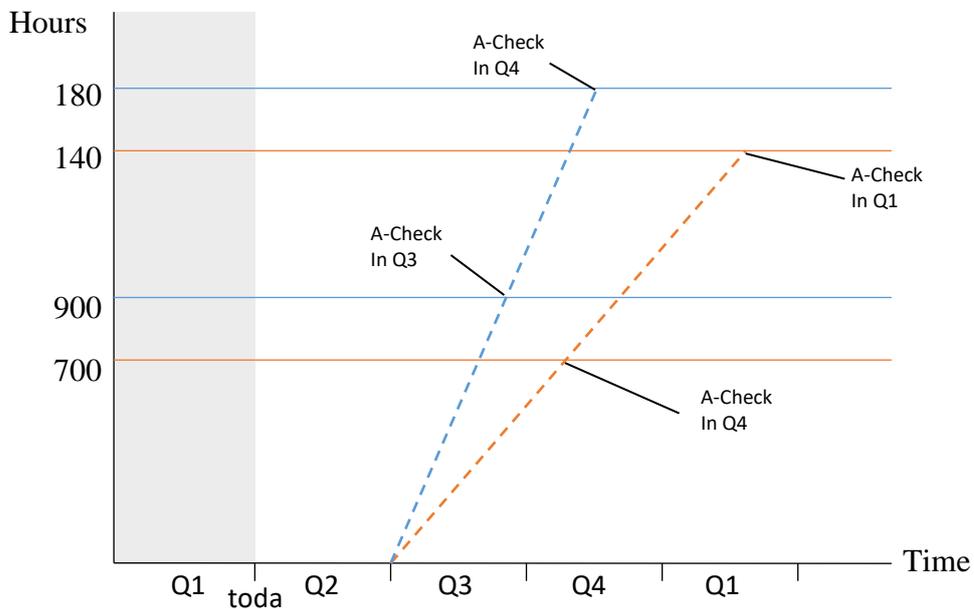


Figure 29. Projecting A-Checks for new deliveries.

### Example 3

In the scenario displayed in Figure 30, operator 1 is responsible for an aircraft until the end of Q2, at which point the aircraft is sold to operator 2. Operator 1 requires a A-Checks every 700hrs, and

operator 2 every 500hrs. This aircraft, therefore, requires an A-Check in Q2 and Q4. If the grouping option on the Projection tab included "operator" then the first A-Check would be listed against operator 1, and the 2<sup>nd</sup> A-Check against operator 2.

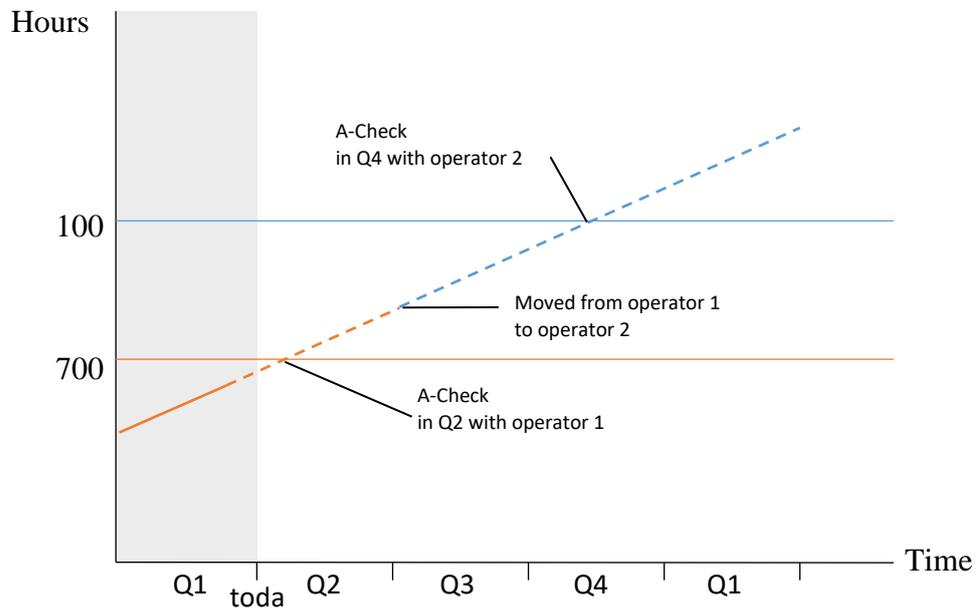


Figure 30. Projecting A-Checks for new deliveries.

## Worked Examples

For lots more examples, please visit the [Knowledge Base](http://knowledgebase.flightglobal.com/) (http://knowledgebase.flightglobal.com/).

### Example 1. Finding companies (operators, etc.) associated with aircraft

In order to find a list of operators, managers, owners, etc. who are associated with aircraft, you first have to search for the relevant aircraft. i.e. you have to start on the Aircraft section.

1. On the Aircraft section, filter until you have the list of aircraft you are interested in.
2. Click on the column header of the company role you are interested in e.g. 'operator' (if the company role you are interested in is not visible then add it using the Add/Remove columns).
3. From the drop-down list that appears, select 'Companies in this role' (see Figure 31).
4. You will then be taken to the Companies section, where your list of companies will be displayed in the results (see Figure 32). You can then add company specific filters or company specific columns.

Figure 31. Extra options available from the company role columns.

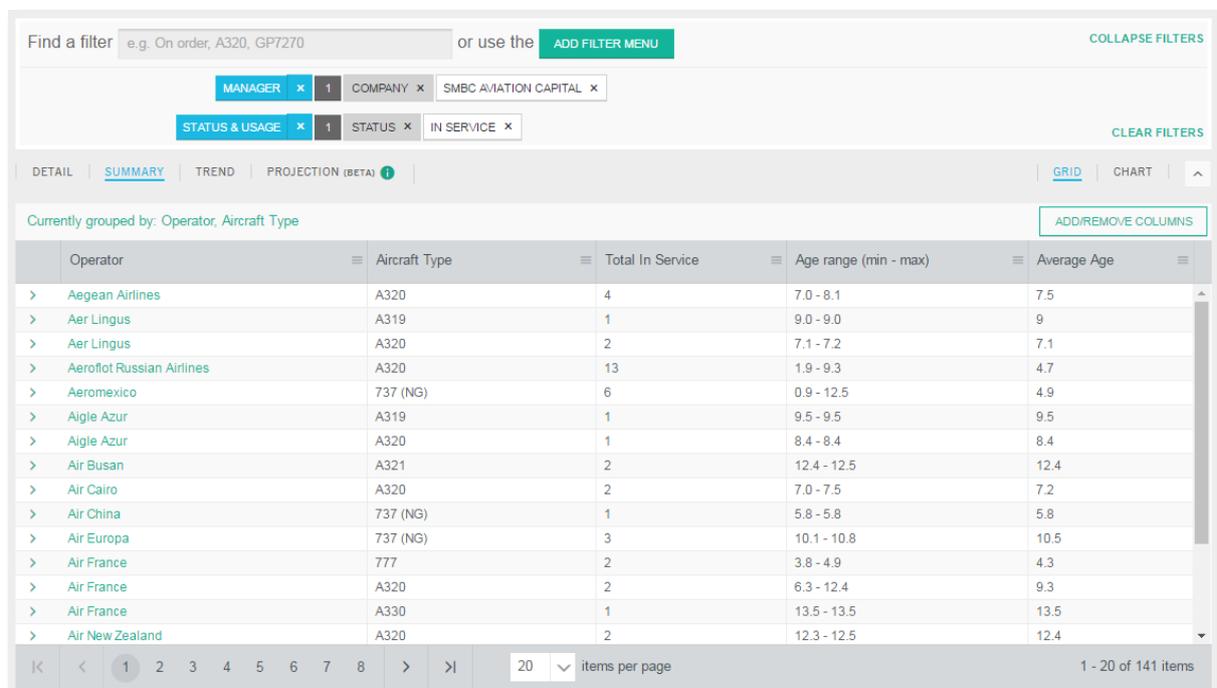
- 1 Companies in this role. This will transfer the unique list of companies to the Companies section.

Figure 32. A list of companies as shown in the Companies section.

## Example 2. Find leased aircraft from a Lessor, and then view the operators' contact details

In this example, we're going to look for the aircraft currently leased from SMBC Aviation Capital, and then we're going to see which aircraft types are in service with which operators, along with the contact information for those operators.

1. Start on the Aircraft Section, Detail tab.
2. In the Quick Filter Search (QFS) type "SMBC" and select SMBC Aviation Capital from the Manager category.
3. In the QFS type "in service" and select in service from the Status category. You should see around 380 aircraft in the grid.
4. Now select the Summary Tab and group by Operator and Aircraft Type. You should see around 140 rows in the grid.
5. As you've filtered by in service aircraft only, it's worth customising the columns in the grid, I'd suggested including Total In Service, Age Range, and Average Age. Your screen should appear similar to that shown in Figure 33.



Find a filter e.g. On order, A320, GP7270 or use the [ADD FILTER MENU](#) [COLLAPSE FILTERS](#)

**MANAGER** x 1 **COMPANY** x SMBC AVIATION CAPITAL x

**STATUS & USAGE** x 1 **STATUS** x IN SERVICE x [CLEAR FILTERS](#)

DETAIL | **SUMMARY** | TREND | PROJECTION (BETA) ⓘ | [GRID](#) | CHART | ^

Currently grouped by: Operator, Aircraft Type [ADD/REMOVE COLUMNS](#)

	Operator	Aircraft Type	Total In Service	Age range (min - max)	Average Age
>	Aegean Airlines	A320	4	7.0 - 8.1	7.5
>	Aer Lingus	A319	1	9.0 - 9.0	9
>	Aer Lingus	A320	2	7.1 - 7.2	7.1
>	Aeroflot Russian Airlines	A320	13	1.9 - 9.3	4.7
>	Aeromexico	737 (NG)	6	0.9 - 12.5	4.9
>	Aigle Azur	A319	1	9.5 - 9.5	9.5
>	Aigle Azur	A320	1	8.4 - 8.4	8.4
>	Air Busan	A321	2	12.4 - 12.5	12.4
>	Air Cairo	A320	2	7.0 - 7.5	7.2
>	Air China	737 (NG)	1	5.8 - 5.8	5.8
>	Air Europa	737 (NG)	3	10.1 - 10.8	10.5
>	Air France	777	2	3.8 - 4.9	4.3
>	Air France	A320	2	6.3 - 12.4	9.3
>	Air France	A330	1	13.5 - 13.5	13.5
>	Air New Zealand	A320	2	12.3 - 12.5	12.4

1 2 3 4 5 6 7 8 > >| 20 items per page 1 - 20 of 141 items

Figure 33. SMBC leased aircraft, grouped by Operator and Type.

6. Now click on the Operator column header and select Companies in this role (See Figure 34).

Find a filter e.g. On order, A320, GP7270 or use the [ADD FILTER MENU](#)

**MANAGER** x 1 **COMPANY** x SMBC AVIATION CAPITAL x

**STATUS & USAGE** x 1 **STATUS** x IN SERVICE x

DETAIL | **SUMMARY** | TREND | PROJECTION (BETA) ⓘ

Currently grouped by: Operator, Aircraft Type

Operator	Aircraft Type	Total In Service	Age range (min - max)
> Aegean Airlines		4	7.0 - 8.1
> Aer Lingus		1	9.0 - 9.0
> Aer Lingus		2	7.1 - 7.2
> Aeroflot Russian Airlines	A320	13	1.9 - 9.3
> Aeromexico	737 (NG)	6	0.9 - 12.5

Figure 34. View all the companies in the Operator column.

- You'll then be taken to the Companies section where you'll see all the relevant operators in the grid.

Find a filter e.g. In start-up, Operating, Mainline or use the [ADD FILTER MENU](#) [COLLAPSE FILTERS](#)

**COMPANY LOCATIONS** x 123 **COMPANIES** x

AEROFLOT RUSSIAN AIRLINES x HAINAN AIRLINES x JETCONNECT x EASYJET SWITZERLAND x S7 AIRLINES x

AMERICAN AIRLINES x MERIDIANA x AEROMEXICO x CITILINK x AVIANCA EL SALVADOR x CHANG AN AIRLINES x QANTAS x

THOMSON AIRWAYS x TAIMYR AIR - NORDSTAR x BRITISH AIRWAYS x KLM ROYAL DUTCH AIRLINES x SUNWING AIRLINES x

JEJU AIR x LAN AIRLINES x FRONTIER AIRLINES x AND 103 MORE [CLEAR FILTERS](#)

**COMPANIES** | SUMMARY | PEOPLE | [ADD/REMOVE COLUMNS](#)

Company Name	Company Category	Company Type	IATA	ICAO	Address	Status
Aegean Airlines	Airlines	Mainline	A3	AEE	Aegean Airlines Headquarters,31 Vitanioti Street,Kif...	Operating
Aer Lingus	Airlines	Mainline	EI	EIN	Head Office Building,Dublin Airport	Operating
Aeroflot Russian Airlines	Airlines	Mainline	SU	AFL	10 Arbat Street,119002	Operating
Aeromexico	Airlines	Mainline	AM	AMX	Paseo de La Reforma 445 Torre A y B,Colonia Cuauh...	Operating
Aigle Azur	Airlines	Mainline	ZI	AAF	4 Avenue Marcel Paul,93297	Operating
Air Busan	Airlines	Low-cost	BX	ABL	6F 853-1 Beomcheon Dong,Busanjin-Gu	Operating
Air Cairo	Airlines	Leisure	SM	MSC	20 El Sayed Zakaria Khalil Street,Sheraton Heliopolis...	Operating
Air China	Airlines	Mainline	CA	CCA	30 Tian Zhu Road,Tian Zhu Airport,Industrial Zone,10...	Operating
Air Europa	Airlines	Leisure	UX	AEA	Post box 430,Llucmajor,Baleares,07620	Operating
Air France	Airlines	Mainline	AF	AFR	45 Rue De Paris,95747	Operating
Air New Zealand	Airlines	Mainline	NZ	ANZ	185 Fanshawe Street,Private Bag 92007,1010	Operating
Air Transat	Airlines	Leisure	TTS	TSC	5959 Chemin Cote Vertu Ouest Boulevard,H4S 2E6	Operating
Airzena - Georgian Airways	Airlines	Mainline	A9	TGZ	12 Rustaveli Avenue,0108	Operating

1 2 3 4 5 6 7 > > 20 items per page 1 - 20 of 123 items

Figure 35. All the Operators of SMBC's leased aircraft.

- Now select the People Tab to see a list of all the people we have on record as working for those operators (Figure 36).

Find a filter e.g. In start-up, Operating, Mainline or use the [ADD FILTER MENU](#) [COLLAPSE FILTERS](#)

[COMPANY LOCATIONS](#) x 123

COMPANIES x AEROFLOT RUSSIAN AIRLINES x HAINAN AIRLINES x JETCONNECT x EASYJET SWITZERLAND x S7 AIRLINES x  
 AMERICAN AIRLINES x MERIDIANA x AEROMEXICO x CITILINK x AVIANCA EL SALVADOR x CHANG AN AIRLINES x QANTAS x  
 THOMSON AIRWAYS x TAIMYR AIR - NORDSTAR x BRITISH AIRWAYS x KLM ROYAL DUTCH AIRLINES x SUNWING AIRLINES x  
 JEJU AIR x LAN AIRLINES x FRONTIER AIRLINES x AND 103 MORE [CLEAR FILTERS](#)

COMPANIES | SUMMARY | [PEOPLE](#) | [ADD/REMOVE COLUMNS](#)

First Name	Last Name	Company Name	Title	Generic Job Title	Actual Job Title	Phone
Achilleas	Karageorgos	<a href="#">Aegean Airlines</a>	Mr	Other	Maintenance Planning E...	+30 210 3530 718
Aris	Kamvisis	<a href="#">Aegean Airlines</a>	Mr	Chief Information Officer	IT&T Director & CIO	-
Chara	Dalekou	<a href="#">Aegean Airlines</a>	Ms	VP Sales/Marketing (CCO)	Marketing Director	-
Christos	Nikolopoulos	<a href="#">Aegean Airlines</a>	Mr	Other	Head of Purchasing	+30 210 3538 064
Eftichis	Vassilakis	<a href="#">Aegean Airlines</a>	Mr	Chief Executive Officer	Managing Director	-
Michalis	Kouveliotis	<a href="#">Aegean Airlines</a>	Mr	Chief Financial Officer	Finance Director	-
Panos	Nicolaidis	<a href="#">Aegean Airlines</a>	Mr	VP Cargo	Ground Operations Direc...	-
Stavroula	Saloutsi	<a href="#">Aegean Airlines</a>	Ms	Corporate Communicatio...	Public Relations & Press ...	+30 2 10 626 1888
Stefanos	Sadopoulos	<a href="#">Aegean Airlines</a>	Mr	Business Development M...	Business Development	-
Stella	Dimaraki	<a href="#">Aegean Airlines</a>	Ms	Corporate Communicatio...	Treasury & Investor Relat...	-
Tassos	Raftopoulos	<a href="#">Aegean Airlines</a>	Mr	VP Fleet Planning	Director Planning & Allia...	+30 2 10 626 1935
Theodore	Vassilakis	<a href="#">Aegean Airlines</a>	Mr	Chief Executive Officer	President	-
Theodoros	Vasileiou	<a href="#">Aegean Airlines</a>	Mr	Other	Base Maintenance Coord...	-
Vassilis	Anadiotis	<a href="#">Aegean Airlines</a>	Mr	Flight Safety Officer	Safety Manager	+30 2 10 669 4035

1 2 3 4 5 6 7 8 9 10 ... 20 items per page 1 - 20 of 1611 items

Figure 36. The 1611 people we have listed against the Operators who are leasing aircraft from SMBC Aviation Capital.

9. You could filter this further by using the Company People filter and viewing only Chief Executive Officers, Engineering Managers etc.

### Example 3. How is the global fleet of EC135s currently utilised?

In this example, we are going to look at how the in service EC135's are being utilised.

1. Start on the Aircraft Section, Detail tab
2. In the Quick Filter Search (QFS) type "H135" and then select both H135/EC135 (Airbus Helicopters) and H135/EC135 (RUAG Aerospace Ltd).
3. In the QFS type "in service" and select In Service in the Status category. You should see around 1150 aircraft in the grid.
4. Now move over to the Summary Tab and group by Primary Usage.
5. As you've filtered by in service aircraft only it's worth customising the columns on the Summary tab, I'd suggested including Total In Service, Average Age, Age Range, and Total Operators.
6. Now click the Total In Service column header and select Sort descending.
7. Now click the Chart Tab which is located just above the Add/Remove Columns button.

The screenshot shows a web interface for aircraft fleet management. At the top, there is a search bar with the text "Find a filter e.g. On order, A320, GP7270" and a button "ADD FILTER MENU". Below the search bar, there are filter tags: "AIRCRAFT TYPE" with a count of 2, "TYPE" with "H135 / EC135 (AIRBUS HELICOPTERS)" and "H135 / EC135 (RUAG AEROSPACE LTD)", and "STATUS & USAGE" with a count of 1 and "STATUS" with "IN SERVICE". There are also buttons for "COLLAPSE FILTERS" and "CLEAR FILTERS".

The main content area has tabs for "DETAIL", "SUMMARY", "TREND", and "PROJECTION (BETA)". The "SUMMARY" tab is active, and the data is grouped by "Primary Usage". A button "ADD/REMOVE COLUMNS" is visible in the top right of the table area.

Primary Usage	Total In Service	Average Age	Age range (min - max)	Total Operators
Medevac / Air Ambulance / EMS / Airbo...	565	8.8	0.2 - 19.8	64
Police Air Support / Law Enforcement / ...	200	8.8	0.5 - 18.9	61
Business - Private Company Use	59	8.5	0.5 - 18.5	55
Utility (Civil Multi-Role)	57	7.6	0.4 - 18.0	37
Passenger	54	7.9	0.3 - 17.3	49
Off-Shore / Oil & Gas Support	44	9.3	2.2 - 17.5	10
Trainer / Training School Aircraft	39	8.8	0.2 - 16.5	6
News Media / Camera Equipped	25	11.4	1.7 - 18.5	11
Search & Rescue / Coast Guard	25	9.6	6.2 - 18.8	3
Attack - Light Armed	25	4	0.2 - 5.2	1
Military Multi-Role (Utility Transport)	20	7.8	1.1 - 12.9	5
Surveying / Mapping & Power/Pipeline L...	15	6.6	0.2 - 17.5	8
VIP / Head of State / Government opera...	7	8.6	5.4 - 18.3	5
Fire Fighting (Utility Role)	4	7.5	7.2 - 8.1	1
Business / Corporate / Executive	4	5.4	1.3 - 7.3	4

At the bottom of the table, there is a pagination control showing "20 items per page" and "1 - 19 of 19 items".

Figure 37. How the current fleet of EC135s are utilised.

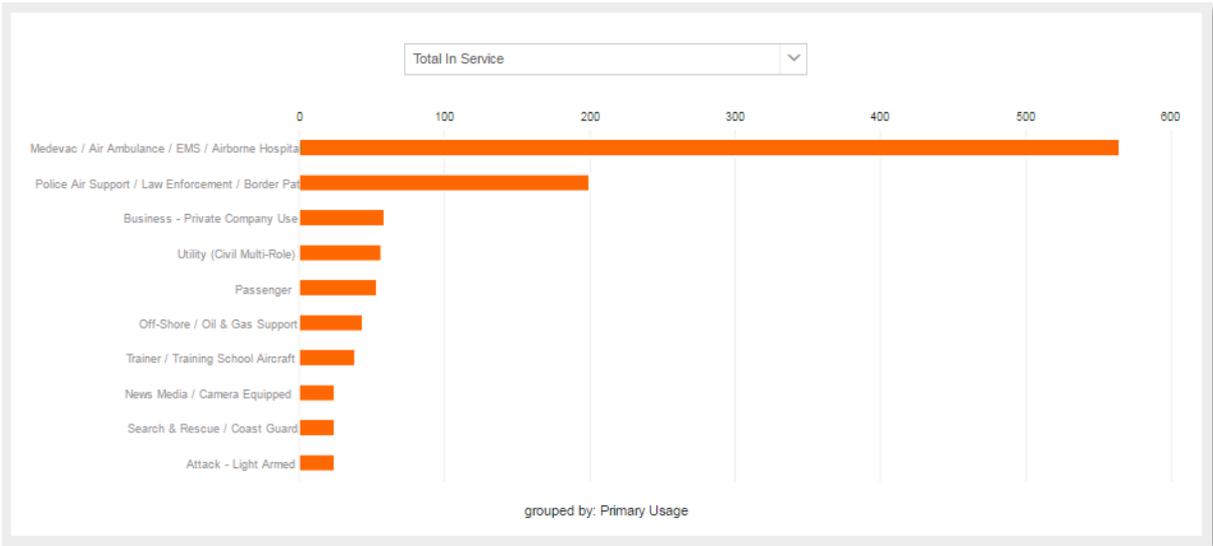


Figure 38. The same data as shown in the Chart view.

### Example 5. 777 & 767 in service fleet over 10 years.

In this example we're going to look at the 777 and 767 sub series trend over the 10-year period between 2010 and 2020 for passenger aircraft.

1. On the Aircraft section, select the Trend tab.
2. Select to group aircraft by Aircraft Type Sub Series.
3. Select a Trend Metric of Total In Service.
4. In the Quick Filter Search (QFS) enter "777", and select 777 under Aircraft Type.
5. In the QFS type "767", and select 767 under Aircraft Type.
6. In the QFS type "passenger", and select Passenger under Primary Usages.
7. In the QFS type "in service", and select In Service under Status.
8. The Trend period will default to 2012 – 2016 in annual intervals. Select the Period selector from the top left of the page, and change the period to 2010 – 2020. You should now see around 12 rows in the results grid.

The screenshot shows a web-based interface for analyzing aircraft fleet trends. At the top, the period is set to 'Yearly: 2010 - 2020'. The search title is 'Untitled Search\*'. A search bar contains 'e.g. On order, A320, GP7270'. Below the search bar, filters are applied: 'AIRCRAFT TYPE' with sub-series '777' and '767', 'STATUS & USAGE' with 'PRIMARY USE' as 'PASSENGER' and 'STATUS' as 'IN SERVICE'. The 'TREND' tab is selected. The table below shows the 'Total In Service' metric for 13 aircraft sub-series from 2010 to 2020.

Aircraft Type Sub Series	Metric	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
> 767-200	Total In Service	1	3	2	3	2	1	2	2	2	2	2
> 767-200EM	Total In Service	3	2	0	1	1	1	1	1	1	1	1
> 767-200ER	Total In Service	60	56	52	38	26	15	20	20	19	19	19
> 767-200ERM	Total In Service	5	3	4	2	3	2	4	4	4	4	4
> 767-300	Total In Service	89	89	80	77	70	60	45	45	45	45	45
> 767-300ER	Total In Service	500	510	508	497	459	425	420	410	400	396	390
> 767-400ER	Total In Service	37	37	37	37	37	37	37	37	37	37	37
> 777-200	Total In Service	84	84	85	85	81	77	73	73	73	73	73
> 777-200ER	Total In Service	407	408	408	407	400	373	365	354	346	333	333
> 777-200LR	Total In Service	46	51	51	52	54	55	55	54	51	51	51
> 777-300	Total In Service	60	57	59	60	60	52	52	51	46	46	46
> 777-300ER	Total In Service	260	312	372	449	533	608	698	756	778	765	761
> 777-9	Total In Service	0	0	0	0	0	0	0	0	0	0	38

Figure 39. The 10-year trend of 777 & 767 by sub series.

### Example 6. Find the original usage for 767s, and compare with their usage today

In this example, we're going to look at the fleet of 767s along with their original primary usage, and we're going to compare this with their primary usage at today's date.

1. Go to the Aircraft Events section.
2. In the Quick Filter Search (QFS) type "767" and select 767 under the Aircraft Type category.
3. In the QFS type "delivered" and select Delivered (Hand over) under the Detail Events Types category. You should see around 1000 767 aircraft delivery events in the grid.
4. Click the Add/Remove Columns button, remove the default columns and add the following: New Aircraft Sub Series, New Primary Usage, and Current Primary Usage.
5. Now click the Event Date column header and Sort Ascending. You'll notice that all the original deliveries (in 1982) were for passenger aircraft, but as you scroll through the grid you'll notice that many have since been converted to Freight/Cargo (Figure 40).

The screenshot shows a data grid with the following columns: Event Date, Event Type, Serial Number, Aircraft Type, New Aircraft Sub Series, New Primary Usage, and Current Primary Usage. The data shows a list of delivery events for 767 aircraft starting from 1982. The 'New Primary Usage' column consistently shows 'Passenger', while the 'Current Primary Usage' column shows various changes, including 'Freight / Cargo' and 'Business / Corporate / Executive'.

Event Date	Event Type	Serial Number	Aircraft Type	New Aircraft Sub Series	New Primary Usage	Current Primary Usage
29-11-1982	Deliveries	21872	767	767-200	Passenger	Passenger
08-12-1982	Deliveries	22218	767	767-200	Passenger	Freight / Cargo
08-12-1982	Deliveries	22565	767	767-200	Passenger	Passenger
09-12-1982	Deliveries	22309	767	767-200	Passenger	Passenger
14-12-1982	Deliveries	22518	767	767-200	Passenger	Passenger
17-12-1982	Deliveries	22568	767	767-200	Passenger	Passenger
20-12-1982	Deliveries	22216	767	767-200	Passenger	Freight / Cargo
20-12-1982	Deliveries	22681	767	767-200	Passenger	Passenger
12-01-1983	Deliveries	21865	767	767-200	Passenger	Passenger
13-01-1983	Deliveries	22566	767	767-200	Passenger	Freight / Cargo
19-01-1983	Deliveries	22217	767	767-200	Passenger	Freight / Cargo
22-01-1983	Deliveries	22219	767	767-200	Passenger	Freight / Cargo
24-01-1983	Deliveries	21863	767	767-200	Passenger	Passenger
28-01-1983	Deliveries	22220	767	767-200	Passenger	Freight / Cargo
11-02-1983	Deliveries	22519	767	767-200	Passenger	Passenger
23-02-1983	Deliveries	22567	767	767-200	Passenger	Business / Corporate / Executive

Figure 40. 767 deliveries with the original and current usage.

6. Now click the Summary tab, and in the Add/Remove Grouping window select New Primary Usage in the Usage category (at the very bottom of the list).
7. Click the Add/Remove Columns button, remove the defaults, and add Total Unique Aircraft. You should now see around 4 rows, one for each Primary Usage at the point of delivery (Figure 41).

Find a filter  or use the [ADD FILTER MENU](#) [COLLAPSE FILTERS](#)

[EVENTS](#) x 1 [DETAIL TYPE](#) x [DELIVERED \(HAND OVER\)](#) x

[AIRCRAFT TYPE](#) x 1 [TYPE](#) x [767](#) x [CLEAR FILTERS](#)

DETAIL | [SUMMARY](#) | TREND | PROJECTION (BETA) ⓘ | [GRID](#) | CHART | ^

Currently grouped by: New Primary Usage [ADD/REMOVE COLUMNS](#)

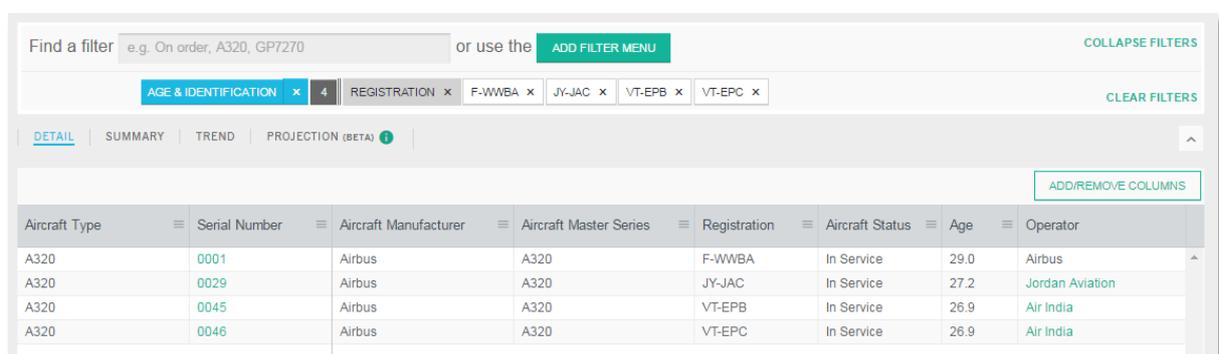
	New Primary Usage	Total Unique Aircraft
>	Freight / Cargo	110
>	Passenger	916
>	Tanker / Tanker - Transport	1
>	VIP / Head of State / Government operated	2

Figure 41. 767s grouped by original primary usage.

### Example 7. Filtering multiple aircraft by Serial/Registration/Line/Aircraft ID

In this example, we're going to use the Aircraft section and populate the results grid with a specific set of aircraft. Rather than using coarse filters such as Aircraft Type etc., we're going to filter by individual aircraft using multiple registration numbers. After we have the set of aircraft we're interested in, we're then going to save the search so we can view the aircraft again at a later date. This is a useful feature if you're responsible for monitoring a particular group of aircraft that cannot be filtered by other means.

1. Go to the Aircraft section.
2. Click the Add Filter Menu.
3. On the Age & Identification page, in the Registration numbers text box, enter the following registration numbers separated by commas; F-WWBA, JY-JAC, VT-EPB, and VT-EPC. The results grid should be populated with 4 aircraft (Figure 42).



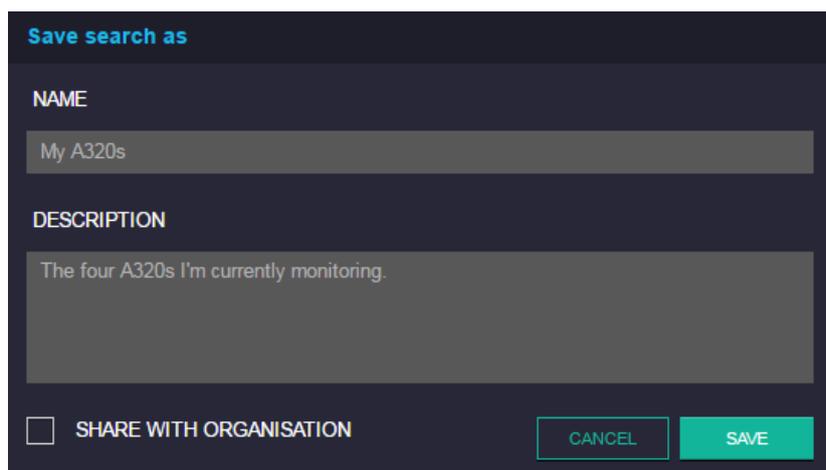
The screenshot shows a web interface for aircraft management. At the top, there is a search bar with the text "Find a filter e.g. On order, A320, GP7270" and a green "ADD FILTER MENU" button. Below the search bar, there are several filter tabs: "AGE & IDENTIFICATION" (selected), "REGISTRATION" (with a count of 4), "F-WWBA", "JY-JAC", "VT-EPB", and "VT-EPC". A "CLEAR FILTERS" button is on the right. Below the filters, there are tabs for "DETAIL" (selected), "SUMMARY", "TREND", and "PROJECTION (BETA)". A table below shows the results of the search:

Aircraft Type	Serial Number	Aircraft Manufacturer	Aircraft Master Series	Registration	Aircraft Status	Age	Operator
A320	0001	Airbus	A320	F-WWBA	In Service	29.0	Airbus
A320	0029	Airbus	A320	JY-JAC	In Service	27.2	Jordan Aviation
A320	0045	Airbus	A320	VT-EPB	In Service	26.9	Air India
A320	0046	Airbus	A320	VT-EPC	In Service	26.9	Air India

Figure 42. Four aircraft filtered using multiple registration numbers.

We've used registration numbers, but we could have used Serial numbers, Line numbers, or Aircraft IDs. Aircraft ID is a FlightGlobal identifier which is unique to individual aircraft.

4. Now select the Save icon from the title bar, and give the search a name a brief description (Figure 43).



The screenshot shows a "Save search as" dialog box. It has a dark background with white text. The "NAME" field contains "My A320s". The "DESCRIPTION" field contains "The four A320s I'm currently monitoring." At the bottom, there is a checkbox labeled "SHARE WITH ORGANISATION" which is unchecked. To the right of the checkbox are two buttons: "CANCEL" and "SAVE".

Figure 43. The Save Search dialogue.

If you wish to find these 4 aircraft again, and see their current status, simply open up the saved search. Saved Searches save the query and the configuration of the grid, not the search result. So when you open a search in future the parameters associated with the aircraft might have changed, e.g. new operators, new manager etc.

Example 8. Viewing individual aircraft total hours and period hours for Delta Air Lines' a320s. i.e. The ACAS Time-series report.

In this example, we're going to show the trend in total hours and period hours for Delta Air Lines' a320s.

1. Go to the Aircraft section, Detail tab.
2. In the Quick Filter Search (QFS) type "a320" and select a320 under the Aircraft Type category.
3. In the QFS type "delta air" and select Delta Air Lines under the Operators category.
4. In the QFS type "in service" and select In Service under the Status category. You should see around 69 aircraft in the grid.
5. Now click on the Trend tab, and when presented with Add/Remove grouping dialogue, remove the defaults groups and add the following from under the Age and identification heading: Flightglobal ID, and Registration. Then click Accept.
6. When presented with the Select metrics dialogue, remove the defaults, and add the following from under the Hours and Cycles heading: Total Cumulative Hours, and Total Period Hours.
7. Now select the calendar picker in the top left and select 2010 – 2015, Yearly.
8. You should now see around 138 rows (69 aircraft x 2 metrics) similar to that shown below (Figure 44).

By grouping by FG ID (a unique key for individual aircraft) we have essentially created a grouping of individual aircraft, by also adding registration we have given ourselves an easy way to identify each aircraft.

The screenshot shows the ACAS interface with the following details:

- Yearly: 2010 - 2015
- Search: Untitled Search\*
- Filters: AIRCRAFT TYPE: 1 TYPE: A320; OPERATOR: 1 OPERATORS: DELTA AIR LINES; STATUS & USAGE: 1 STATUS: IN SERVICE
- Navigation: DETAIL | SUMMARY | TREND | PROJECTION (BETA)
- Grouping: Currently grouped by: FG ID, Registration
- Table Data:

FG ID	Registration	Metric	2010	2011	2012	2013	2014	2015
> 5960	N309US	Total Cumulative Hours	61377	64527	67116	70158	72838	75592
> 5960	N309US	Total Period Hours	3286	3150	2589	3042	2680	2754
> 6169	N310NW	Total Cumulative Hours	60907	64029	66590	69399	72189	75023
> 6169	N310NW	Total Period Hours	3136	3122	2561	2809	2790	2834
> 6185	N315US	Total Cumulative Hours	60302	63315	66272	68967	71867	74518
> 6185	N315US	Total Period Hours	3446	3013	2957	2695	2900	2651
> 6194	N319US	Total Cumulative Hours	58770	61676	64529	67383	70002	72719

Figure 44. Total hours and period hours at individual aircraft level.

### Example 9. Future aircraft delivery schedule split by order type

To see the expected number of aircraft deliveries, but split by the order type (Order, LOI etc.), we will have to use the Trend Tab, and then select the new “scheduled delivery of ...” metrics that were introduced in release 7.11 (28<sup>th</sup> March 2016)

1. On the Aircraft section, filter until you have the list of aircraft you are interested in.
2. Move to the Trend Tab and then select the Add/Remove Metric button.
3. In the Add/Remove Metric dialogue, under the Event heading, select the “Total Scheduled Delivery of...” metrics which you wish to see.
4. Use the date picker in the top left of the page to select a date range in the future.

The screenshot shows a web interface for viewing aircraft delivery schedules. At the top, there is a search bar with the text "Untitled Search\*" and a date range selector set to "Yearly: 2016 - 2025". Below the search bar, there are filter tags for "AIRCRAFT TYPE: x 1", "MASTER SERIES x", and "A320 (NEO) x". The interface has tabs for "DETAIL", "SUMMARY", "TREND" (which is active), and "PROJECTION (BETA)". A button labeled "ADD/REMOVE METRIC" is visible. The main content is a table with columns for "Aircraft Type", "Metric", and years from 2016 to 2022. The table is grouped by "Aircraft Type".

Aircraft Type	Metric	2016	2017	2018	2019	2020	2021	2022
> A320	Total Deliveries Events (Scheduled)	99	259	357	525	568	489	353
> A320	Total Scheduled Delivery of Lol to Option Aircraft Events	0	0	8	26	27	27	45
> A320	Total Scheduled Delivery of Lol to Order Aircraft Events	0	0	9	8	19	11	7
> A320	Total Scheduled Delivery of Optioned Aircraft Events	0	0	0	11	23	43	55
> A320	Total Scheduled Delivery of Ordered Aircraft Events	99	259	340	480	499	408	246

Figure 45. A320 Neo future deliveries split by order type.

### Example 10. All-risk total losses to commercial aircraft over a 10-year period.

In this example we are going to review the number of accidents that are of all-risk (that is, not resulting from acts of war) and were total losses to commercial aircraft, for the ten year period 01/01/2006 to 30/12/2015.

1. Start in the Accidents section, Detail tab.
2. Click on the 'Add filter menu' button.
3. Go to the Date & Identification filter and selected the date range for 01/01/2006 to 30/12/2015.
4. Go to the Event Circumstances filter, select Accident Category as 'All Risk'.
5. Go to the Loss Type filter, select 'Total Loss' filter.
6. Go to the Market Grouping At Accident filter, select 'Commercial' in Market Sector at Accident.
7. Click Accept to run the search. Your screen will look like the image shown in Figure 46.

The screenshot shows a web application interface for accident analysis. At the top, there are navigation tabs: DASHBOARD, ANALYZER, OTHER PRODUCTS, GLOSSARY, SUPPORT, HELP, and a user profile. Below this is a secondary navigation bar with AIRCRAFT, AIRCRAFT EVENTS, COMPANIES, MAINTENANCE, ACCIDENTS, and SAVED SEARCHES. The main content area has a search bar with the text "All Columns Dave Tues\*" and buttons for EXPORT and SAVE. Below the search bar is a filter menu with the text "Find a filter e.g. Total Loss, A320, Casualties or use the ADD FILTER MENU". The filter menu contains several active filters: DATE & IDENTIFICATION (1 ACCIDENT DATE FROM 01/01/2006, TO 31/12/2015), LOSS TYPE (1 LOSS TYPE TOTAL LOSS), EVENT CIRCUMSTANCES (1 ACCIDENT CATEGORY ALL RISK), and MARKET GROUPING AT ACCIDENT (1 MARKET SECTOR AT ACCIDENT COMMERCIAL). There is a CLEAR FILTERS button. Below the filters is a table with columns: Accident ID, Accident Date, Accident Location Country, Type at Accident, Manufacturer at Accident, Operator at Accident, Serial Number, and Registrat. The table contains 15 rows of data, with the first row being Accident ID 257, Accident Date 19-04-2007, Accident Location Country United Arab Emirates, Type at Accident A300, Manufacturer at Accident Airbus, Operator at Accident Qatar Airways, Serial Number 690, and Registrat A7-ABV. The table has a pagination bar at the bottom with a dropdown menu set to 20 items per page and a total of 1 - 20 of 460 items.

Accident ID	Accident Date	Accident Location Country	Type at Accident	Manufacturer at Accident	Operator at Accident	Serial Number	Registrat
257	19-04-2007	United Arab Emirates	A300	Airbus	Qatar Airways	690	A7-ABV
261	20-04-2007	Bahamas	DHC-8	Bombardier (de Havilland)	Bahamasair	159	C6-BFN
266	05-05-2007	Cameroon	737 (NG)	Boeing	Kenya Airways	35069	5Y-KYA
287	23-06-2007	Kyrgyzstan	Yak-40	Yakovlev Design Bureau	Government of Kyrgyzstan	9411030A	EX-901
289	28-06-2007	Angola	737 (JT8D)	Boeing	TAAG Angola Airlines	23220	D2-TBP
341	15-06-2007	India	ATP	BAE Systems (HS)	First Flight Couriers	2039	VT-FFB
343	12-08-2007	South Korea	DHC-8	Bombardier (de Havilland)	Jeju Air	4141	HL5256
353	20-08-2007	Japan	737 (NG)	Boeing	China Airlines	30175	B-18616
362	31-08-2007	Congo (Democratic Republic)	DHC-6	Bombardier (de Havilland)	Air Serv International	598	ZS-NJK
364	09-09-2007	Denmark	DHC-8	Bombardier (de Havilland)	SAS	4025	LN-RDK
366	16-09-2007	Thailand	MD-80	Boeing (McDonnell-Douglas)	One-Two-Go	49183	HS-OMG
574	22-08-2007	Brazil	EMB-110	Embraer	Two Taxi Aereo	110323	PT-SDB
731	23-07-2007	Ethiopia	As 24	Aerobus	Dibedi Airline	07106103	EY-000

Figure 46. All-risk total loss results.

### Example 11. British Airways accidents over a 5-year period.

In this example we are going to review the fleet of British Airways and any accidents related to the operator or the fleet in the past 5 years (01/01/2011 – 31/12/2015).

1. Start in the Aircraft section, Detail tab.
2. In the QFS type in British Airways, select British Airways as Operator filter. Similarly, add Status & Usage filters as 'In Service' and 'Storage', you are now viewing the currently active fleet of British Airways.
3. Go to the Trend view, select to group by status and adjust the dates to show the last 5 complete years (2011-2015) to see how it has developed in the past 5 years. Select metric 'Total aircraft' to focus on the most relevant figures. Your screen would look like the image shown in Figure 47.

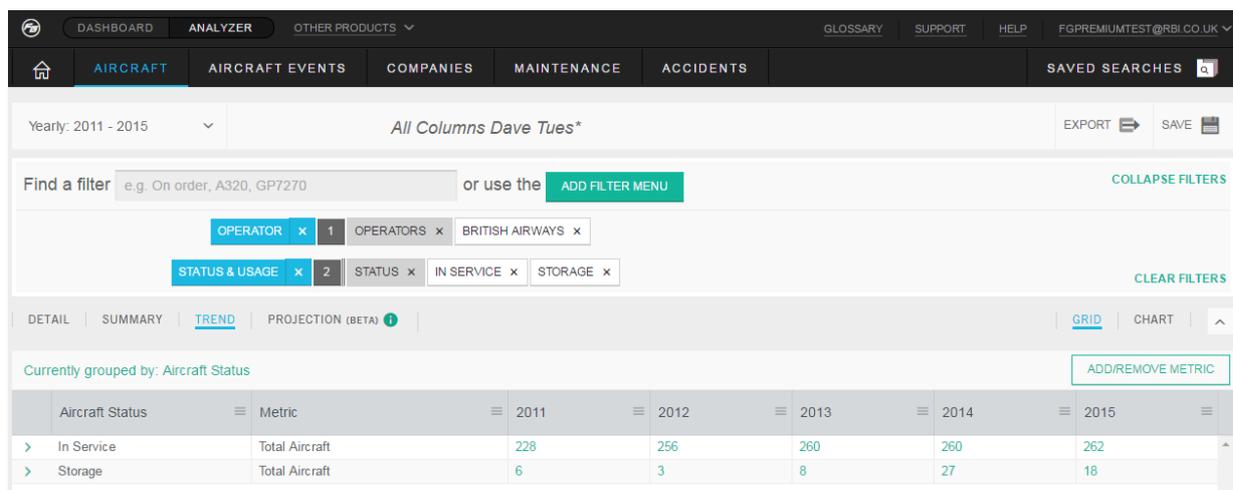


Figure 47. British Airways accidents over a 5-year period.

1. Now go to Accidents section – as filters are transferable, you will see accidents that relate to aircraft that are currently with British Airways (in service or in storage). Note, as you are viewing the accidents related to the aircraft that is operated by British Airways currently, you will also see accidents suffered by these aircraft before they were operated by the British Airways. Click on the 'View Narrative' link in the Narrative column to review the description of each accident in more detail.
2. Let us now review the claim history of the operator in the past five years. Click on the 'Add filter menu' button.
3. Remove the existing filters by clicking on the cross.
4. Go to Operator At Accident filter on the menu and select British Airways.
5. Go to the Date & Identification filter and selected the date range for the past 5 complete years. Your screen will look like the image shown in Figure 48.

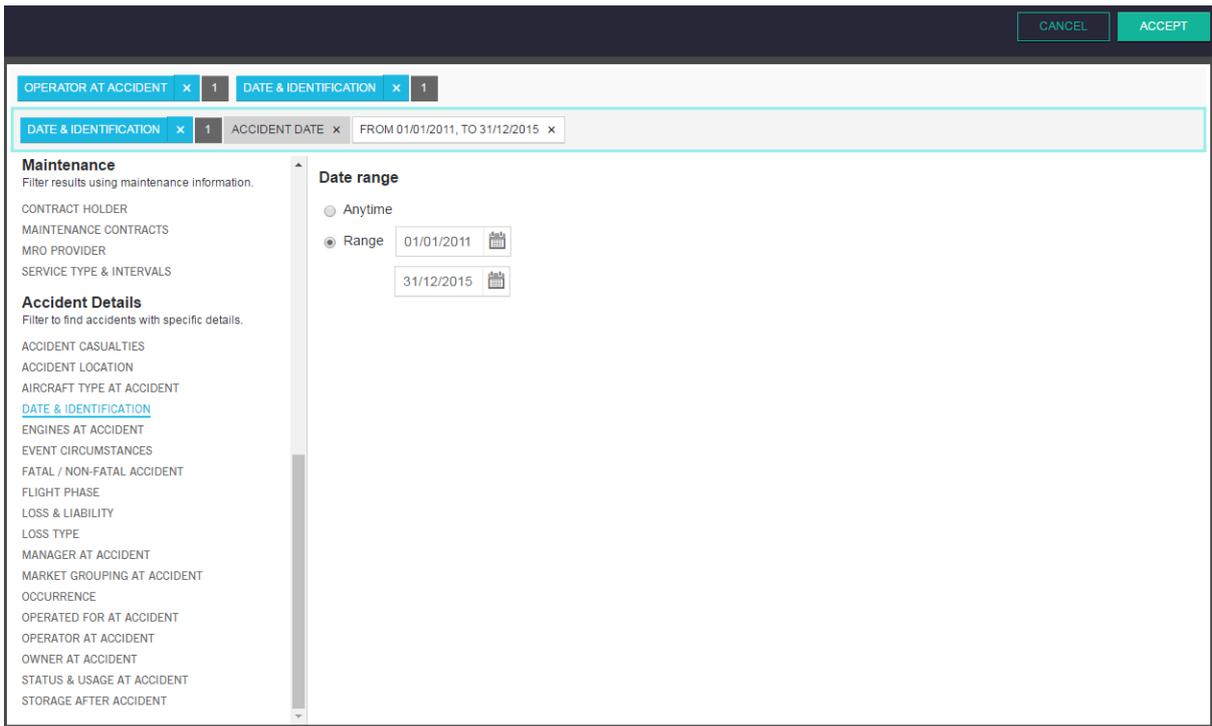


Figure 48. Date and Identification filter.

1. Click 'Accept' to run the search.
2. Click on Add/Remove columns to tailor your table and include data that you are interested in. For example, to see if the aircraft in accident is still in operation today and who the operator is, add Current Status and Current Operator columns into the grid. You can save or export your search results, if required.

## Example 12. Exposure and risk of the helicopter fleet over the last 10-years.

In this example we are going to review the development of helicopter fleet and see if the industry is getting more or less safe in the last 10 years by looking at exposure and risk. For this we shall review how the number of accidents changed versus changes in active helicopter fleet.

1. Start in the Aircraft section, Trend tab
2. Adjust the dates to show the last 10 years
3. In the QFS type in Helicopter, select Helicopter as Aircraft Market Sector filter.
4. Set grouping as Market Class to get more insight into how the fleet of different classes of helicopters has been developing
5. Select metrics 'Total in Service', 'Total On Order' and 'Total in Storage' to focus on the most relevant figures. Your screen would look like the image shown in Figure 49.

Currently grouped by: Market Class		ADD/REMOVE METRIC										
Market Class	Metric	2005	2006	2007	2008	2009	2010	2011	2012	2013		
> Civil Piston Helicopters	Total In Service	1178	1210	1255	1275	1195	1126	1041	958	878		
> Civil Piston Helicopters	Total In Storage	39	62	65	56	74	72	88	90	76		
> Civil Piston Helicopters	Total On Order	74	65	52	33	17	19	8	10	7		
> Civil Turbine Helicopt...	Total In Service	3099	3004	2899	2869	2733	2654	2458	2354	2208		
> Civil Turbine Helicopt...	Total In Storage	242	235	248	201	237	230	263	246	225		
> Civil Turbine Helicopt...	Total On Order	53	75	80	71	57	34	35	17	9		
> Military Piston Helico...	Total In Service	2	2	2	2	2	2	1	1	1		
> Military Piston Helico...	Total In Storage	0	0	0	0	0	0	0	0	0		
> Military Piston Helico...	Total On Order	0	0	0	0	0	0	0	0	0		
> Military Turbine Helic...	Total In Service	536	500	470	454	424	406	375	318	278		
> Military Turbine Helic...	Total In Storage	48	51	50	45	50	54	41	41	39		
> Military Turbine Helic...	Total On Order	15	24	20	24	21	22	11	6	3		

Figure 49. In Service and On Order helicopters by Market Class.

1. Let us now review the accidents that relate to the same period. Go to the Accidents section, Detail view.
2. Go to the Date & Identification filter in the Accidents section and select the date range to show the last 10 years
3. As this returns quite a large number of accidents, let us filter it to show just the fatal ones. Type in 'Fatal' in the QFS, select Fatal Accident filter, tick Fatal. This has reduced the number significantly.
4. Sort by Accident date to see how the numbers changed throughout the years. Your screen would look like is shown in Figure 50 . You can save and / or export your search to work on the data further, for instance build a time graph to visualise the number of accidents vs number of aircraft.

Dashboard ANALYZER OTHER PRODUCTS GLOSSARY SUPPORT HELP FGPREMIUMTEST@RBI.CO.UK

AIRCRAFT AIRCRAFT EVENTS COMPANIES MAINTENANCE ACCIDENTS SAVED SEARCHES

All Columns Dave Tues\* EXPORT SAVE

Find a filter fatal or use the ADD FILTER MENU COLLAPSE FILTERS

MARKET GROUPING x 1 MARKET SECTOR x HELICOPTERS x

DATE & IDENTIFICATION x 1 ACCIDENT DATE x FROM 01/01/2006, TO TODAY x

FATAL / NON-FATAL ACCIDENT x 1 FATAL / NON-FATAL x FATAL ACCIDENT x CLEAR FILTERS

DETAIL

ADD/REMOVE COLUMNS

Accident ID	Accident Date	Accident Location Country	Type at Accident	Manufacturer at Accident	Operator at Accident	Serial Number	Registr
35732	16-01-2006	Iraq	AH-64	Boeing Rotorcraft Systems	United States Army	PV156/PVD395	03-0539E
40087	17-01-2006	South Africa	R22	Robinson Helicopter Company	Halicopter Partnership	3862	ZS-RXA
40004	22-01-2006	Brazil	H125 / AS350	Airbus Helicopters	Marica Taxi Aereo	3656	PR-CAV
15478	25-01-2006	Sudan	SA330	Airbus Helicopters	Helog Lufttransport KG	1496	D-HAXM
13951	27-01-2006	Spain	R44	Robinson Helicopter Company	Cultivos Ecologicos Andarax	10991	EC-JOG
23375	02-02-2006	Australia	Bell 206	Bell Helicopter Textron	Southwest Helicopters Pty ...	1060	VH-MFI
13890	06-02-2006	United States	R44	Robinson Helicopter Company	Silver State Helicopters Ltd	0607	N7085U
23327	07-02-2006	United States	R44	Robinson Helicopter Company	Dracor	10367	N447SH
23376	11-02-2006	Brazil	Bell 206	Bell Helicopter Textron	Himaco Hidraul & Maquina...	4118	PT-HVY
11944	17-02-2006	Djibouti	S-80	Sikorsky Aircraft Corporation	United States Marine Corps	65-475	161998
24788	17-02-2006	Djibouti	S-80	Sikorsky Aircraft Corporation	United States Marine Corps	65-507	162495
24787	21-02-2006	Australia	R44	Robinson Helicopter Company	North Australian Helicopter...	0033	VH-HBS
23329	22-02-2006	United States	R22	Robinson Helicopter Company	Unconfirmed American Ope...	3315	N7512G
35729	24-02-2006	Colombia	Bell 206	Bell Helicopter Textron	Helicargo SA	3084	HK-2496

20 items per page 1 - 20 of 1182 items

Figure 50. Fatal helicopter accidents over the last 10-years.

### Example 13. Analysing deals in the year to date

In this example we are going to review which deals have happened in the year to date to see what deal type is the most popular. Is the most popular type of deal overall the same as the most popular type of deals for the a/c type we are specifically looking at? For this we shall look at the completed deals from the 1 January of this year till today, and then apply filtering.

1. Start in the Deals section, Detail tab.
2. In the Deal Dates & Identification filter adjust the deal start dates to start with 1 January and the deal status to Completed.
3. Run the search and see how many deals have been done.
4. Go to Summary view, select the grouping by Deal Structure – view the resulting screen in Figure 51.

The screenshot shows the FlightGlobal Deals Analyzer interface. The top navigation bar includes Dashboard, Analyzer, Other Products, Glossary, Support, Help, and the user's email. The main navigation bar has tabs for Aircraft, Aircraft Events, Companies, Maintenance, Accidents, Deals, and Saved Searches. The search bar is titled 'Untitled Search\*' and includes an 'Export' button and a 'Save' button. Below the search bar, there is a filter menu with 'DEAL DATES & IDENTIFICATION' selected, showing filters for 'DEAL START DATE' (FROM 01/01/2016) and 'DEAL STATUS' (COMPLETED). The interface is currently grouped by 'Deal Structure'. The table below shows the results:

Deal Structure	Total Deals	Total Buyers	Total Sellers	Total Arrangers	Total Borrowers
> Capital Markets	10	0	0	0	7
> ECA / EXIM	5	0	0	1	5
> Finance Lease	21	0	0	10	17
> Loan/Finance/Refinanced	145	1	0	23	74
> Operating Lease - Sale and ...	96	49	52	0	1
> Pre Delivery Payment	4	0	0	0	4
> Purchase	426	234	263	0	1
> Purchase - Lease Attached	143	69	61	0	1
> Tax Lease	32	0	0	16	16

Figure 51. Completed deals in the year to date by deal structure.

5. Let us now Consider the deals which involved 777 – type 777 in the QFS and select it as the aircraft type. When the page re-loads we can see that the deal types most popular for 777 are different from those generally popular.
6. Go to the aircraft in Deal View to see the list of 777 aircraft and what deals they participated in. You can view the details you are interested in by adding/removing columns, including information on the aircraft at the start and end of deal, as well as current (i.e. Operator at start of deal, Operator at end of deal, Current operator). Note that the same aircraft can appear in the list several times if they have participated in several deals.
7. Click on the Aircraft section, to view the aircraft that participated in the deals in the state they are now. Note: all your filters are preserved and each aircraft will only appear once – see Figure 52.

Today ▼ Untitled Search\* EXPORT SAVE

Find a filter  or use the ADD FILTER MENU COLLAPSE FILTERS

AIRCRAFT TYPE x 1 TYPE x 777 x

DEAL DATES & IDENTIFICATION x 2 DEAL START DATE x FROM 01/01/2016 x DEAL STATUS x COMPLETED x CLEAR FILTERS

[DETAIL](#) | [SUMMARY](#) | [TREND](#) | [PROJECTION \(BETA\) 1](#)

ADD/REMOVE COLUMNS

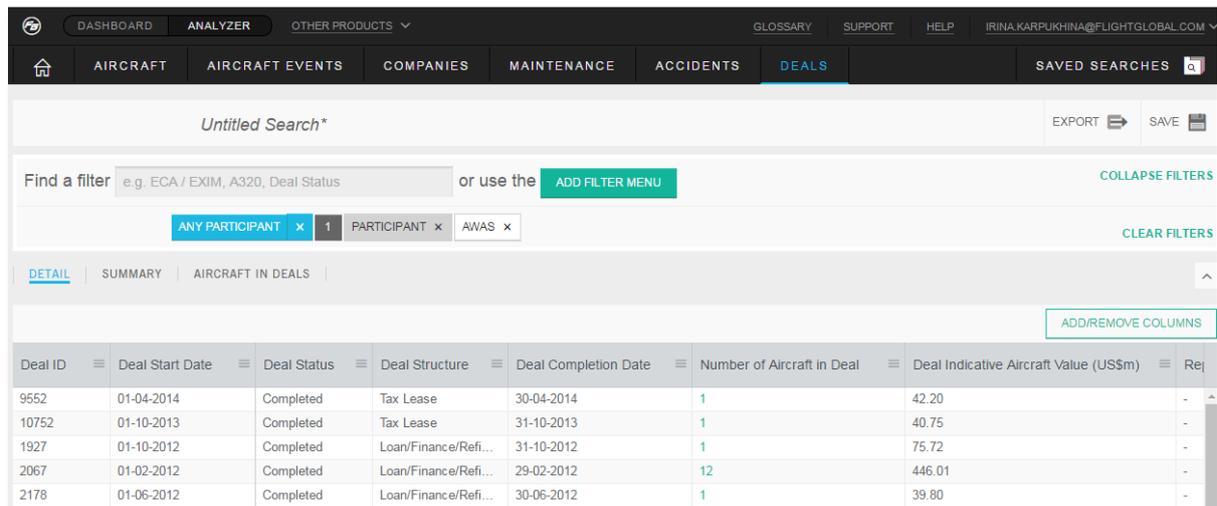
Aircraft Type	Serial Number	Aircraft Manufacturer	Aircraft Master Series	Registration	Aircraft Status	Age	Operator
777	28395	Boeing	777-300	N	Retired	-	Unical Aviation Inc
777	28415	Boeing	777-200	N318MY	Retired	-	Delta Material Services LLC
777	28682	Boeing	777-200	F-GSPQ	In Service	15.6	Air France
777	29064	Boeing	777-300	A6-EMU	In Service	14.1	Emirates Airline
777	29397	Boeing	777-200	PH-BQC	In Service	12.9	KLM Royal Dutch Airlines
777	29399	Boeing	777-200	PH-BQK	In Service	11.8	KLM Royal Dutch Airlines

Figure 52. 777 Aircraft that participated in deals in the year to date seen in the Aircraft section.

### Example 14. Reviewing company activity

In this example we are going to review what known deal activity a particular company has been involved in. This workflow would be useful to users who want to monitor competitor activity or find out more about the experience of their potential customers or partners.

1. Start in the Deals section, Detail view
2. Click add filter, select Any Participant filter in Deals and select the company or companies you are interested in monitoring, click accept and view the Deals that the company participated in in any capacity. Similarly, you can search for company's participation in other roles (i.e. Seller, Buyer, Equity Provider, etc.) – see Figure 53.



The screenshot shows the 'DEALS' section of the FlightGlobal interface. The search filter 'Untitled Search\*' is active, with filters for 'ANY PARTICIPANT' (1), 'PARTICIPANT', and 'AWAS'. The table below displays the results of this search.

Deal ID	Deal Start Date	Deal Status	Deal Structure	Deal Completion Date	Number of Aircraft in Deal	Deal Indicative Aircraft Value (US\$m)	Rej
9552	01-04-2014	Completed	Tax Lease	30-04-2014	1	42.20	-
10752	01-10-2013	Completed	Tax Lease	31-10-2013	1	40.75	-
1927	01-10-2012	Completed	Loan/Finance/Refi...	31-10-2012	1	75.72	-
2067	01-02-2012	Completed	Loan/Finance/Refi...	29-02-2012	12	446.01	-
2178	01-06-2012	Completed	Loan/Finance/Refi...	30-06-2012	1	39.80	-

Figure 53. Deals with AWAS as participant in any role.

3. You can also look at what companies the given company you were considering has dealt with in the past. To do this, clear the previous filters that are no longer relevant and select your company / companies of interest in a particular role, i.e. as a buyer and run the search. Let us look at the deals where Debt provider is a bank, a hedge fund or a trust.
4. Add column with Equity Provider to the grid. Then click on the hamburger icon and select 'view companies in this role' to see the details of companies who have previously worked on deals in the capacity of Equity providers, where the Debt provider was a bank, a hedge fund or a trust – see Figure 54.
5. You can further fine tune your search by adding company filters, for instance, looking at the companies from one particular region.

Dashboard ANALYZER OTHER PRODUCTS GLOSSARY SUPPORT HELP IRINA.KARPUKHINA@FLIGHTGLOBAL.COM

AIRCRAFT AIRCRAFT EVENTS COMPANIES MAINTENANCE ACCIDENTS DEALS SAVED SEARCHES

Untitled Search\* EXPORT SAVE

Find a filter e.g. ECA / EXIM, A320, Deal Status or use the ADD FILTER MENU COLLAPSE FILTERS

DEBT PROVIDER x 3 COMPANY TYPE x BANK x HEDGE FUND / PRIVATE x TRUST x CLEAR FILTERS

DETAIL SUMMARY AIRCRAFT IN DEALS

ADD/REMOVE COLUMNS

Deal ID	Deal Start Date	Indicative Aircraft Value (US\$m)	Equity Provider	Number of Equity Providers	Debt Provider	Number of Debt Providers
3429	01-09-2011	70	KfW IPEX-Bank Gm	Sort Ascending	JP Morgan Chase...	1
443	01-08-2011	00	Dr Peters GmbH, No	Sort Descending	Bank of China, CI...	3
9830	01-03-2014	35	Metlife, Unconfirmed	Companies in this role	BNDES - Brazilia...	1
1221	01-01-2009	34	BNP Paribas, Societ...		Industrial and Co...	1
197	01-04-2011	89	Nomura Babcock & ...	1	Natixis Transport ...	1
1195	01-10-2010	00	Dr Peters GmbH	1	NordLB, DekaBank	2

Figure 54. Getting to view companies in a particular role in the Companies section.

### Example 15. Monthly traffic for a specific Operator

In this example, we are going to look at how traffic data for a specific Operator changes over time.

1. Start on the Companies Section, and select the Finance & Traffic tab.
2. Accept the default column option of Company Type.
3. In the Select Metrics window, remove the default metrics, and expand the Traffic heading so that all the traffic metrics are visible. Choose the metrics you require (or use those in the image below). Click Accept.
4. In the Quick Filter Search (QFS) type "british airways" and then select British Airways from under the Companies heading.
5. Use the calendar picker in the top left corner to select your date range and interval (traffic data is available for yearly and monthly intervals, but not quarterly.)

Company Name	Company Category	Company Type	Metric	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2017
British Airways	Airlines	Mainline	Total Passengers (thousands)	2,963	2,941	3,366	3,401	3,684	3,775
British Airways	Airlines	Mainline	Total Passengers Change	▲ 2.0%	▲ 18.6%	▲ 2.7%	▼ 0.1%	▲ 1.9%	▲ 1.2%
British Airways	Airlines	Mainline	Passenger Load Factor (%)	78.5	76.4	79.8	79.2	80.2	84.0
British Airways	Airlines	Mainline	Passenger Load Factor Change (pp)	▲ 0.8	▲ 0.6	▲ 0.5	▲ 0.5	▲ 0.1	▼ 0.6
British Airways	Airlines	Mainline	Revenue Passenger km (millions)	11,058	10,183	11,717	11,649	12,552	12,735
British Airways	Airlines	Mainline	Revenue Passenger km Change	▲ 1.7%	▲ 6.2%	▲ 1.7%	▲ 1.5%	▲ 3.1%	▲ 1.1%
British Airways	Airlines	Mainline	Available Seat km (millions)	14,082	13,328	14,686	14,700	15,643	15,164
British Airways	Airlines	Mainline	Available Seat km Change	▲ 0.5%	▲ 5.4%	▲ 1.1%	▲ 0.7%	▲ 3.0%	▲ 1.8%
British Airways	Airlines	Mainline	Freight Tonne km (millions)	330	331	368	347	360	339
British Airways	Airlines	Mainline	Freight Tonne km Change	▼ 1.2%	▼ 2.9%	▼ 5.7%	▼ 1.7%	▲ 1.4%	▲ 0.9%

Figure 55. Monthly traffic data for British Airways.

## Example 16. Compare company finance data over time

In this example, we are going to look at the annual revenue for European Mainline Airlines between 2010 and 2015; we are going to limit our results to only those airlines that have exceeded \$100m in annual revenue for at least one of the intervals during the 2010 – 2015 range.

1. Start on the Companies Section, and select the Finance & Traffic tab.
2. Accept the default column option of Company Type.
3. Click the Add Filter Menu button, and then select the Company Category option from the menu on the left. In the Company Type list, select Mainline.
4. Then select the Company Location option from the menu on the left, and select Europe from the Regions list.
5. Now select the Revenues option from the left menu, this is under the Finance heading. Find the Total Revenue (US\$m) range filter, and enter “100” into the From field. In the Date range and interval filter on the same page, make sure the interval is set to Yearly, and enter the date range 2010 to 2015. Now click the Accept button from the top right of the page.
6. Now use the calendar picker on the search page and set the interval and range to match what you entered into the filter i.e. Yearly, 2010 – 2015. Your results should look like those shown below.

Company Name	Company Category	Company Type	Metric	2010	2011	2012	2013	2014	2015
Adria Airways	Airlines	Mainline	Total Revenue (US\$m)	196	223	194	195	199	0
Adria Airways	Airlines	Mainline	Total Revenue Change		▲ 13.9%	▼ 13.2%	▲ 0.6%	▲ 2.1%	▼ 100.0%
Adria Airways	Airlines	Mainline	Year to End - Finance	Dec 2010	Dec 2011	Dec 2012	Dec 2013	Dec 2014	Dec 2015
Aegean Airlines	Airlines	Mainline	Total Revenue (US\$m)	681	836	726	908	1,122	1,016
Aegean Airlines	Airlines	Mainline	Total Revenue Change		▲ 22.8%	▼ 13.1%	▲ 25.0%	▲ 23.6%	▼ 9.4%
Aegean Airlines	Airlines	Mainline	Year to End - Finance	Dec 2010	Dec 2011	Dec 2012	Dec 2013	Dec 2014	Dec 2015
Aer Lingus	Airlines	Mainline	Total Revenue (US\$m)	1,605	1,801	1,797	1,895	2,051	1,895
Aer Lingus	Airlines	Mainline	Total Revenue Change		▲ 12.2%	▼ 0.2%	▲ 5.4%	▲ 8.3%	▼ 7.6%
Aer Lingus	Airlines	Mainline	Year to End - Finance	Dec 2010	Dec 2011	Dec 2012	Dec 2013	Dec 2014	Dec 2015
Aeroflot Russian Airlines	Airlines	Mainline	Total Revenue (US\$m)	4,308	5,387	8,151	9,086	8,092	6,698
Aeroflot Russian Airlines	Airlines	Mainline	Total Revenue Change		▲ 25.0%	▲ 51.3%	▲ 11.5%	▼ 10.9%	▼ 17.2%
Aeroflot Russian Airlines	Airlines	Mainline	Year to End - Finance	Dec 2010	Dec 2011	Dec 2012	Dec 2013	Dec 2014	Dec 2015

Figure 56. Annual Total Revenue and Total Revenue Change between 2010 and 2015.

### Note 1

It is important to note that the filter range and the display range can be different. For example, you could choose to filter for companies with a total revenue of >\$50m between 2010 – 2015 with a yearly interval, but choose to view the results between 1990- 2000 with a quarterly interval.

### Note 2

If you choose to filter for companies with a total revenue of >\$50m, and choose a range and interval of between 2010 – 2015 and yearly, then companies will be returned in the results as long as they meet the criteria for one or more intervals within the filtered range. They do **not** have to meet the criteria across the whole filtered range.

## Technical requirements

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### Supported browsers

Dashboard & Fleets Analyzer are supported on the following browsers:

- Google Chrome (previous 12 months)
- Mozilla Firefox (previous 12 months)
- Microsoft Edge (previous 12 months)
- Safari (previous 12 months)
- Internet Explorer 11 (see advisory note below)

#### *Cirium IE11 Technical Advisory*

Microsoft Internet Explorer 11 (IE11) is the last version of the Internet Explorer web browser from Microsoft. It was released in October 2013 and is supported by Microsoft until the end of life of Windows 10.

When released in 2013, Internet Explorer was quoted as being the fastest of the current range of web browsers. As of 2018, it is now the slowest by a significant margin. This is predominantly for two reasons:

1. The JavaScript engine in IE11 used for application functionality is notoriously slow. In industry benchmarks it comes in last in every test, in some cases failing the test completely.
2. The page rendering performance in IE 11 is known to be very slow and buggy when calculating positions of items on a page, such as for grids or variable sized boxes. In combination with point 1, this adds a 50-100% performance penalty on rendering times.

Given that most modern web applications are JavaScript based, including the Cirium range of products, our recommendation is to use the latest version of a modern browser such as Microsoft Edge, Mozilla Firefox or Google Chrome.

In the last couple of years, Cirium, along with a majority of large organisations, have started to build applications using the latest technologies available in order to create an enhanced experience for users who are using modern, more powerful web browsers. This mainly involves the use of JavaScript frameworks that defer a lot of the user interface generation and interaction to the browser.

When IE11 was released in 2013, there was very little incentive for browser makers to optimise the performance of the JavaScript engine in the browser; all focus was on the HTML compatibility of the browser instead. At that time, web sites also generated all content on the servers, so the browser only had to worry about drawing the content of the page, not running an application.

Subsequent to this, Google and Mozilla started to push the focus onto JavaScript performance, as there was now more of a drive to push web processing to the browser. IE11 was never part of this push since Microsoft was focussing on its new browser, Edge.

Now in 2018, the performance of IE11 is so far behind that no amount of JavaScript optimisation will make an application run significantly faster. Because of these factors, Cirium now recommends that users migrate from IE11 to a more modern browser like Google Chrome or Microsoft Edge to gain maximum benefit from our product suite.

We will continue to resolve IE11 issues that break core functionality, but, we will no longer resolve issues related to performance and styling.

### Web Address

<http://dashboard.flightglobal.com/app/fleet/#/analyserhome>

### Monitor Resolution

Horizontal resolution of at least 1280px (1920px recommended).

### URL Whitelist

In order to function correctly Fleets Analyzer requires access to the following URLs:

- dashboard.flightglobal.com
- login.flightglobal.com
- ajax.googleapis.com
- api.flightglobal.com
- d3i2yofat64uvr.cloudfront.net
- d1vbw5keesufbh.cloudfront.net
- www.flightglobal.com
- du8783wkf05yr.cloudfront.net
- metrics.reedbusiness.net
- www.google.com
- www.gstatic.com
- now.eloqua.com
- cdn.kendostatic.com
- da7xgitj801h2.cloudfront.net
- d1fmezig7cekam.cloudfront.net
- s3-eu-west-1.amazonaws.com
- scout.scoutanalytics.net
- kendo.cdn.telerik.com
- cdn.flightglobal.com
- d3fod5fkpt74ph.cloudfront.net
- d1vbw5keesufbh.cloudfront.net

In addition to allowing access to the URLs listed above, your Firewall will also have to allow the download of .xlsx files (all Exports are in .xlsx format).

### Firewall

Given that Cirium make use of AWS, we cannot guarantee that our products (or the resources required to run the products) can be available via a set of fixed IPs. For this reason we strongly recommend that your Firewall is based around DNS rules and not IP rules.

### Email Whitelist

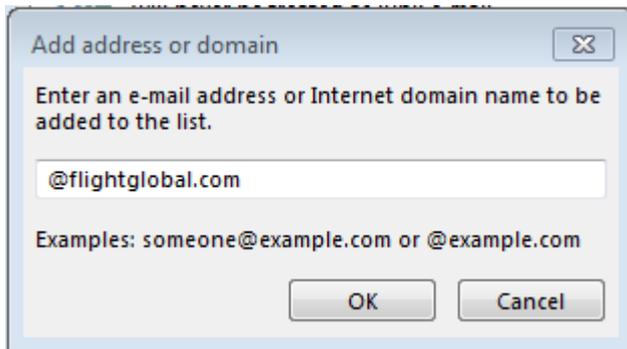
From time to time Cirium may send users support emails. Please ensure that the following email domain is whitelisted to ensure it is not categorised as spam:

- @Cirium.com

To add the domain above to your Safe Senders list in Outlook:

1. On the Outlook Ribbon Click Home.
2. In the Delete group, click Junk, and then click Junk Email Options.
3. Click the Safe Senders tab, click Add.

1. In the “Enter an email address or Internet domain name to be added to the list” box, enter “@Cirium.com” (without the quotes).



2. Click *OK*.

## Data Security

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### ISO 27001:2013 Standard

ISO27001 is a standard for Information Security Management Systems (ISMS) published in 2013 by the International Organization for Standardization (ISO). It is a standards-based approach to security and is supported internationally by members of the ISO and is commonly used by businesses around the world.

The Security policies and standards followed by Cirium are based upon ISO 27001, designing and implementing security controls as part of an overarching management process to meet security needs on an ongoing basis.

### Security Operations

Our operational security process and procedures ensure endpoint protection through the identification, assessment and deployment of patches to protect against new vulnerabilities and the maintenance and monitoring of anti-virus through industry recognised products.

Cirium performs regular vulnerability assessments of our internal and external facing services and environments, using a variety of specialist tools. Where we employ the use of third-parties these entities are assessed to determine their security posture and any impact that they may have on the security of Cirium products and services.

### Network Security

Cirium operates defence-in-depth controls across our network infrastructure including the maintenance and monitoring of Firewalls, Intrusion Protection Systems and Web Application Firewalls in conjunction with tiered security architectures that further enhance the protection of data within our environments.

### Application Security

All development within Cirium follows a defined Software Development Life Cycle (or SDLC), which includes secure coding practices and security testing. Our Secure SDLC stresses the incorporation of security considerations as part of our standard development practices across all phases.

Web-enabled services are secured by Hypertext Transfer Protocol Secure (HTTPS) where appropriate to ensure encrypted communications of sensitive data.

### Data Security

Our products and services are designed to ensure that access is available only to authorized individuals. Controls include the use of role-based access, data segmentation and segregation of duties.

### Physical Security

Cirium hosts its production systems in data centres designed to protect our systems from environmental and physical threats. With fully redundant subsystems and compartmentalized security zones, the data centres used by Cirium adhere to the strictest physical security measures:

- Requires multiple layers of authentication before access is granted to sensitive areas.
- Camera surveillance systems at critical internal and external entry points.
- Security personnel monitor 24/7.

- Unauthorized access attempts are logged and monitored by data centre security personnel.

All physical access to the data centres is highly restricted and stringently regulated.

### Fleets Analyzer Saved Searches

Fleets Analyzer Saved searches are stored in our cloud hosted environment (AWS), but no personal identifiable information is stored with the Saved Searches. All personal identifiable information (usernames, email, passwords, company etc.) are stored in a separately hosted system (the Cirium Access and Entitlement system). If an unauthorised user were to gain access to our database of Saved Searches, there would be no way that the user could link those Saved Searches to individual users, or companies.

The Cirium Access and Entitlement system (where users' Personal identifiable information is stored) uses a database cluster that is in the private subnet of AWS, so cannot be seen externally to AWS and is in a separate account to the Fleets Analyzer application. It stores usernames and passwords and uses BCrypt as the default hashing method on passwords. Direct access to the database is limited to a vetted and controlled set of internal maintenance staff. No Personal identifiable information data is stored outside our controlled production environment.

## Customer support

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First line customer support is provided by the global Client Services team via email or phone: -

- [support@cirium.com](mailto:support@cirium.com)
- Europe, Middle East, Africa: +44 20 8322 6800
- Americas: +1 646 746 6851
- Asia-Pacific: +852 2280 9565

## Links to other resources

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For all the latest news regarding Fleets Analyzer please visit the [Knowledge Base](http://knowledgebase.flightglobal.com/) (<http://knowledgebase.flightglobal.com/>).

Visit the Fleets Analyzer Resource page to access the following resources:

- an up-to-date version of this user guide
- video tutorials
- detailed release notes for the latest release

Fleets Analyzer resource page: <https://www.flightglobal.com/resources/fleets-analyzer-resources/>

Information regarding other products from Cirium can be found on the FlightGlobal products page. <https://www.flightglobal.com/products/>

You can follow Cirium via the following social networks:

- Twitter (<https://twitter.com/cirium>)
- LinkedIn (<https://www.linkedin.com/company/cirium/>)
- WeChat ([https://mp.weixin.qq.com/s/X\\_wCWjl1h16SZoTRktLz0w](https://mp.weixin.qq.com/s/X_wCWjl1h16SZoTRktLz0w))