Aerobytes
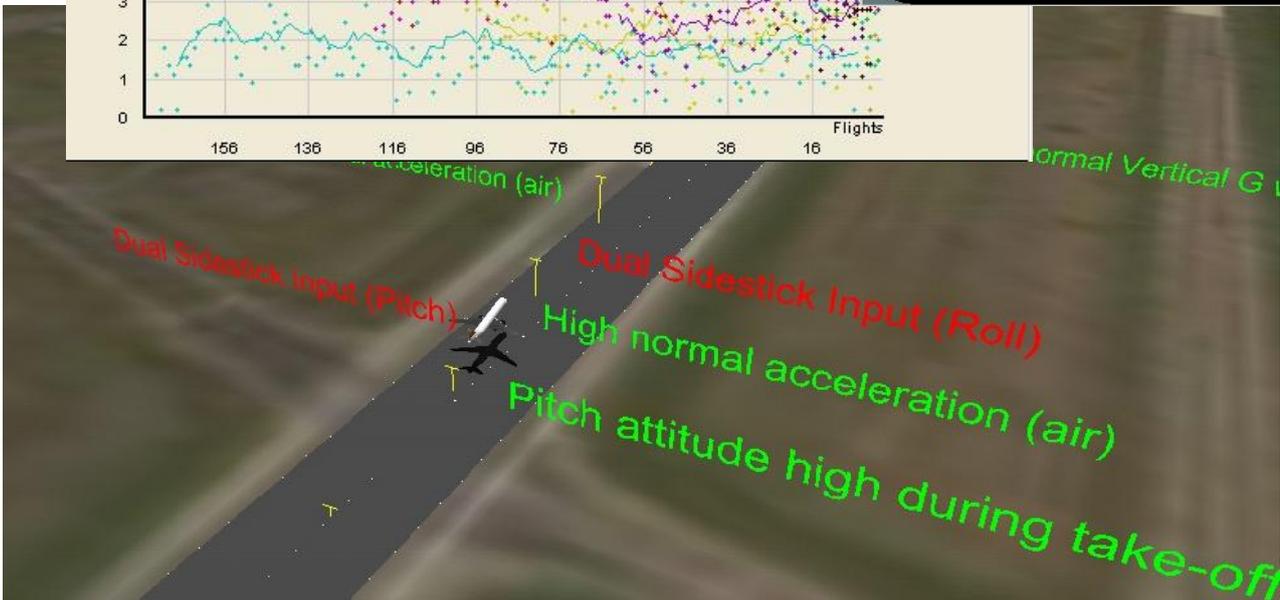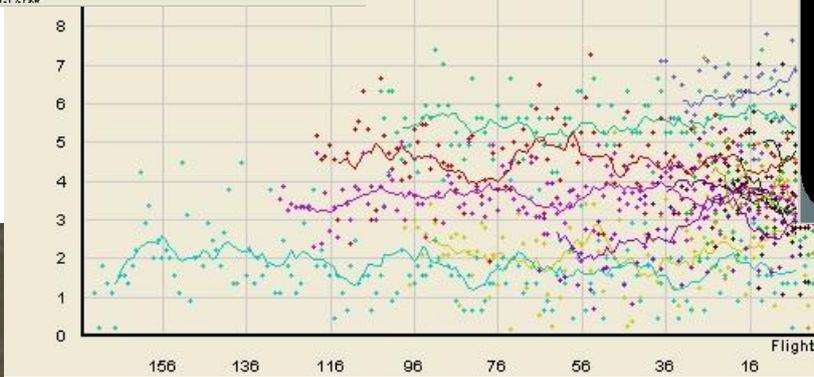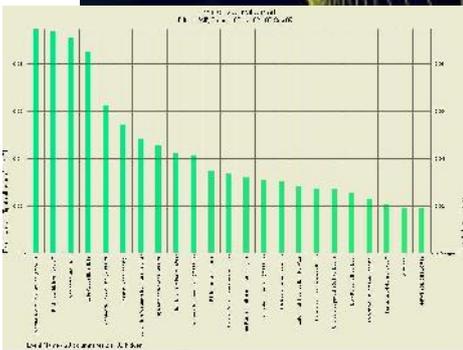
Aerobytes FDM / FOQA

The **_only_** complete FDM / FOQA solution

The **_first_** FDM / FOQA software with SMS integration

Aerobytes

Aerobytes FDM / FOQA

Over the past twelve years over 200 operators across the planet have selected Aerobytes as their supplier of FDM / FOQA software (either as in **in-house** system or via a **service**).

Aerobytes supplies the most fully specified, best supported and easiest to use FDM / FOQA software available. No other product provides so many useful, integrated features as standard or is as intuitive to use. No other competing product is supported as well as Aerobytes. Just ask our customers and competitors' customers!

For users of an Aerobytes' FDM / FOQA system, this means that less time needs to be spent managing their data-monitoring program compared to competing systems. It also means that the time that is spent is more productive.

Some of the more important features of the system are listed below. Please remember that although competing systems may offer *some* of these features, we have yet to hear of one that can offer them *all*.

As of Summer 2014 Aerobytes remains the only FOQA software with these capabilities:

- Reliable automatic analysis with very few false positives
- Drill Down from statistics to flight data
- Logging of corrective action and overlay of statistical reports
- SMS Integration with exchange of corrective actions etc
- Built in 3D animation with terrain and airports worldwide
- Intelligent re-analysis (faster & does not destroy unrelated results)
- Value-led analysis (as opposed to event only analysis which can be very crude)
- Ability to define new events without writing lines of code

Although the product itself is excellent, the level of support provided by Aerobytes is unequalled and also plays a major role in the ongoing success of Aerobytes over the last twelve years.

What they Say…

The people who are best positioned to comment on our software are our users. We feel that this quote in particular summarises the enthusiasm with which Aerobytes' FDM / FOQA software is received (further client references upon request)

- **Head of Safety Management, Monarch Airlines**

"The Flight Safety world has been waiting for a product like this for years - the Aerobytes system is already a world apart from its competitors and continues to move further ahead as new features are added to it.
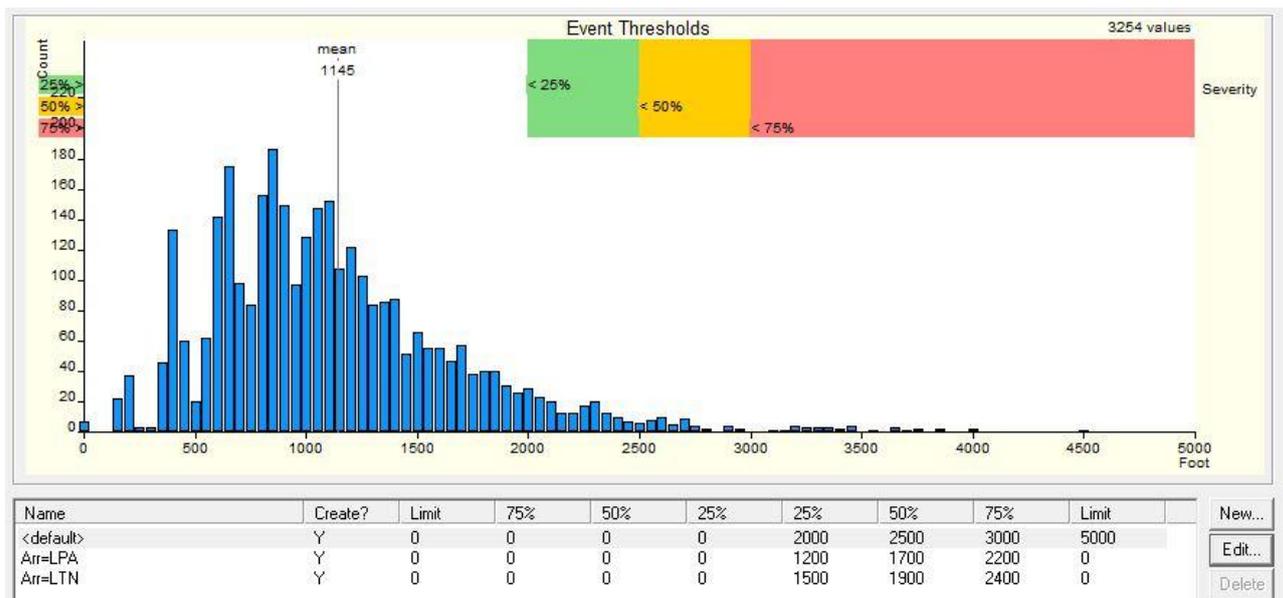
It is relatively easy to use and the various formats for displaying information make my job a lot easier and more effective.

We have used the system to investigate several incidents with excellent results. The integrated animation, panels and map views are really useful for debriefing crews."

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Replay & Analysis

Replay is the process by which your flight-data is loaded into the system and Analysis is the process whereby events and trends are found in that data. This traditionally time-consuming process has been streamlined and heavily automated in Aerobytes FOQA.

- allows manual or automatic replay of flight-data for your aircraft-types
- scheduled tasks can include uploading and matching of crew roster and schedule information
- supports all QARs in common use including wireless
- allows ad hoc creation of values for special engineering or operational investigation
- supports standard deviation and other more advanced statistical functions
- script and wizard based configuration for values and events
- supports engine-health monitoring
- supports trending by t/o or t/d airport, t/o or t/d runway, engine, aircraft, engine-type, aircraft-type, fleet, arr / dep hour, crew etc.
- event definitions, detection thresholds and severity thresholds fully user-configurable
- Over 250 standard values for fixed wing aircraft, 150+ for helicopters, plus many hundred more for engine health and fuel monitoring purposes.

Name	Create?	Limit	75%	50%	25%	25%	50%	75%	Limit	
<default>	Y	0	0	0	0	2000	2500	3000	5000	New...
Arr=LPA	Y	0	0	0	0	1200	1700	2200	0	Edit...
Arr=LTN	Y	0	0	0	0	1500	1900	2400	0	Delete

- allows event detection thresholds to be overridden by t/o or t/d airport/pad, t/o or t/d runway/pad, engine, aircraft, engine-type, aircraft-type and/or fleet to improve sensitivity to events whilst reducing false alarms
- supplied pre-configured for your aircraft-types
- re-analysis of historical data for new values or events without effecting previous analysis.

Once configured an Aerobytes system can automatically carry out the entire process of data replay and analysis including sending alerts and automatic reports. Aerobytes users spend very little time validating events and can concentrate on future safety and efficiency.

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Views

There is no substitute for having powerful and intuitive tools for viewing flight-data when the time comes to investigate events. With the right set of tools, you save valuable time and also reduce the chance of misunderstanding what *really* happened.

- fully integrated solution allows you to seamlessly switch between all views including 3D animation
- all views can be displayed as continuous 'video'
- all views support 'fast load' whereby only the data immediately surrounding an event is loaded
- all views support 'one click' selection to quickly view events or parts of a flight
- events, key points & values in the flight are clearly marked as they come into view
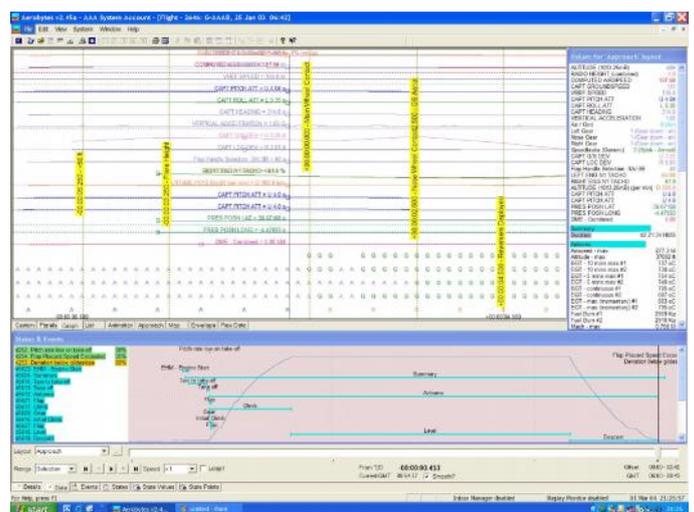

3D Animation

- included at no extra charge
- based on Jeppesen airport database
- based on NOAA satellite terrain data
- Users can add overlays: satellite images, photos etc.
- No export or formatting required
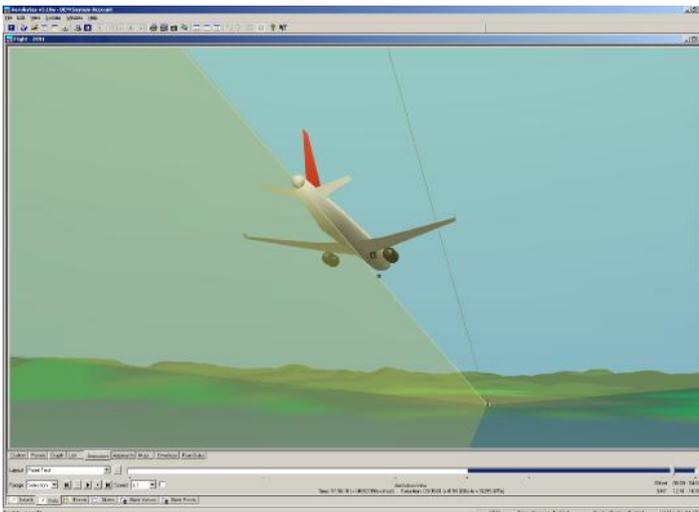
Graph, List & Raw Data

- fully configurable parameters and formats
- one-click zoom & selection
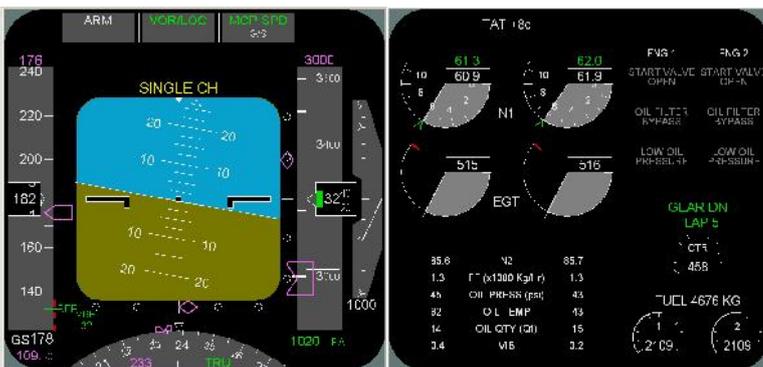- many 'short-cut' features

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Panels

- included at no extra charge
- user-configurable panels supported
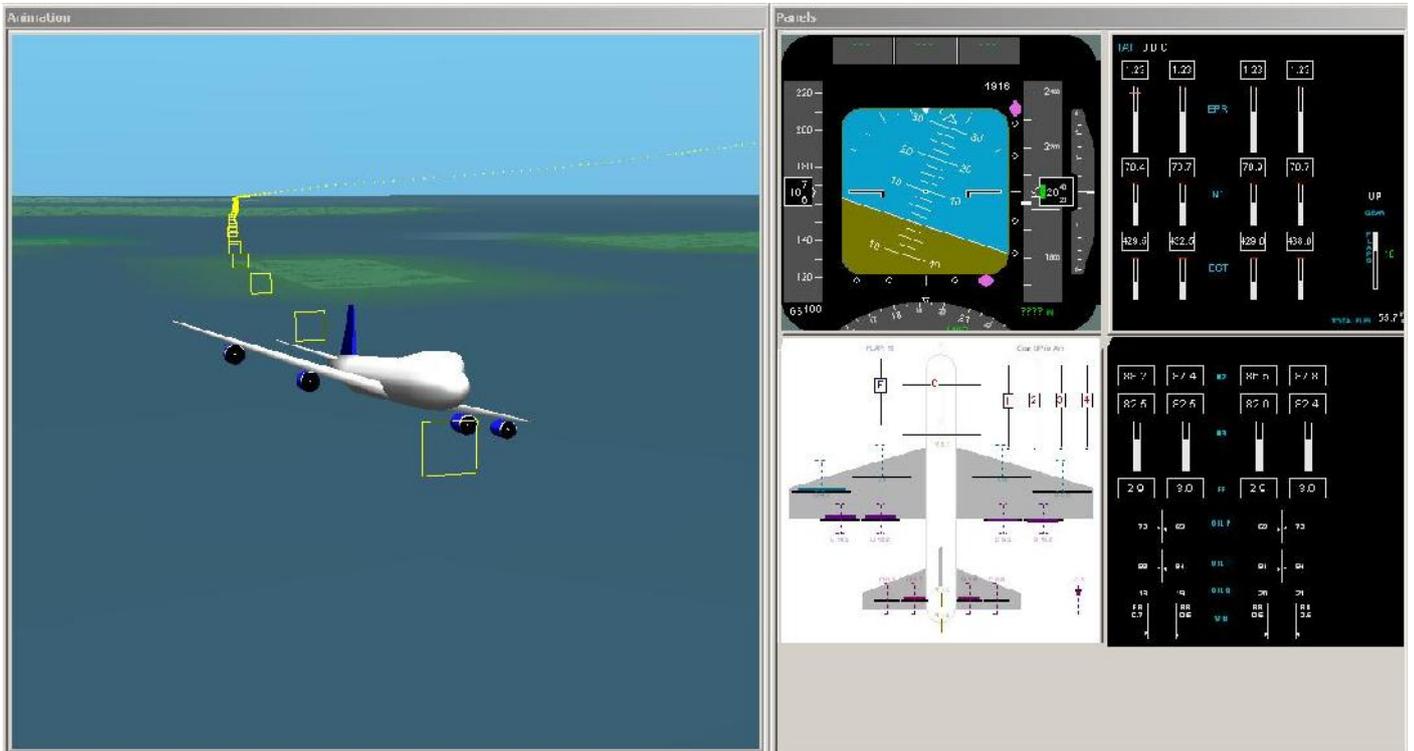- shows instruments, controls, systems, etc

Map

- instant positional awareness
- configurable range and layout
- events and key points overlaid

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Custom
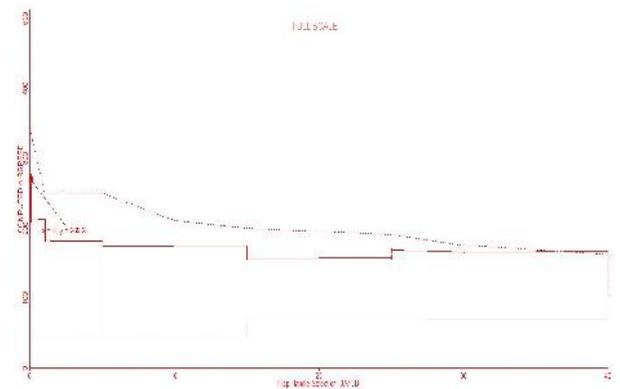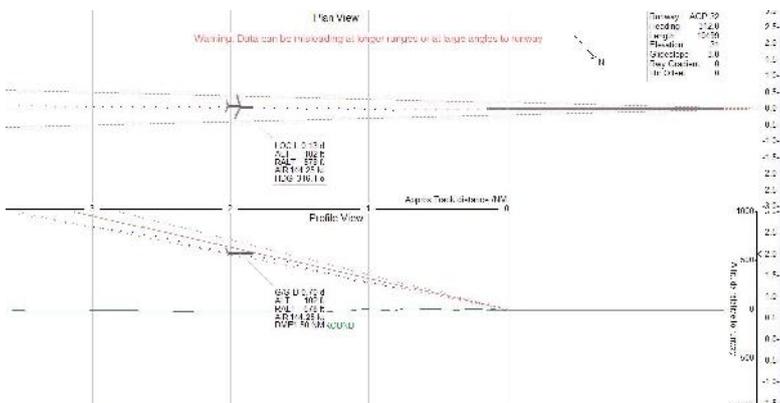- combine any number and type of views into one, configurable 'big picture'

Approach
- plots path vs glideslope & localiser
- uses Jeppesen runway data
- shows wind rose

Envelope
- plots value vs value (not value vs time)
- invaluable for envelope exceedences
- flap placard, EGT, Vmo, etc

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Risk Matrix

Even in small operations identifying problem areas can be difficult as the volume of events starts to build up. To give an overview Aerobytes FOQA includes a *Risk Matrix*. The Risk Matrix allows users to quickly and easily identify where they are having large volumes of event and see how serious they are.
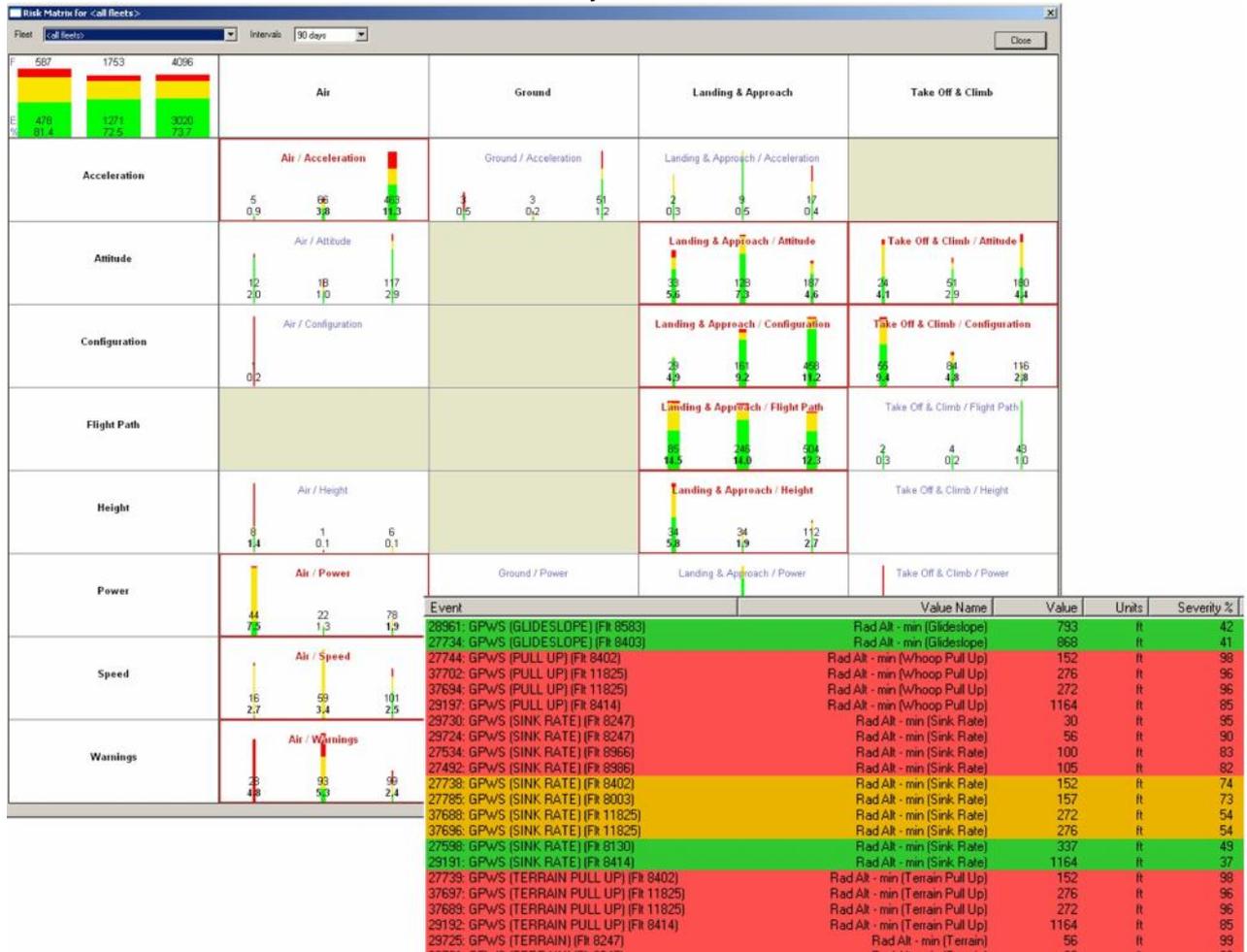
How it works:

- One click to display the Risk Matrix.
- User selects Period Range, from 5 days to 365 days.
- Matrix displays 3 columns per grid square showing the event count and severity in the last period, the period before and the period before that.
- Users click on the square of interest to list all the recent items contributing to the bar graph.
- The Event list can be ordered by clicking on the column header.
- Flight data can be viewed by double clicking on the event.

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Corrective Actions

The **most** important part of a data-monitoring program is identifying and correcting adverse trends. Despite this, most competing systems are still little more than event-detection and trending tools.

In contrast, Aerobytes' FDM / FOQA provides tools to fully support the all-important 'continuous improvement loop' of Flight Data Monitoring / FOQA. These tools are integrated into the system so that flights can be tagged to projects and the effects of corrective actions can be assessed by overlaying them on performance graphs.
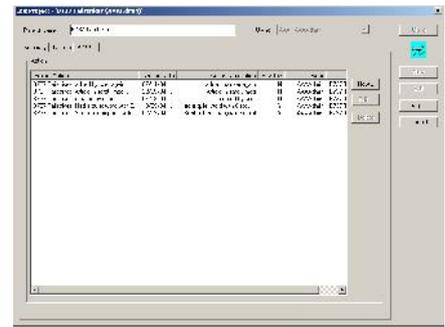
- fully integrated solution allows you to create and track actions
- actions can be created to achieve any result
- status reports sent automatically by email
- actions can be overlaid on statistical graphs to see their effect, how quickly the action starts to work, how long it lasts etc
- actions can be 'private' – useful when logging interviews with crews, etc
- details are retained so that old lessons do not have to be re-learned in future.
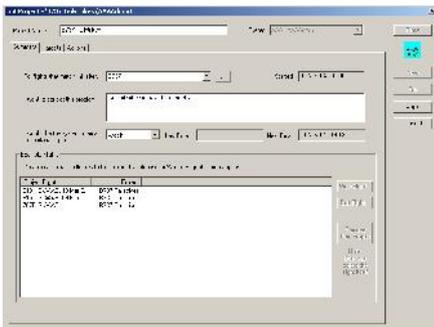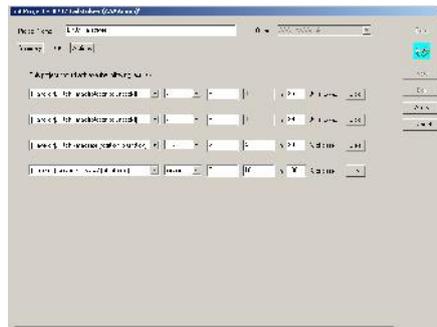
Summarise problem   *Set Targets for improvements*   *Record actions*

Hot Spots

One button click shows riskiest airports runways and events. One customer who had previously used a competing system commented that this feature alone would save them 2 to 3 days per month!

Calendar View

- See when flights were flown and event content (how many events, severity of worst, open/closed)
- Open flights directly from calendar view
- Check reconciliation of flight data with crew rostering data (flight numbers, flight types, dates times, crew members – optional, any other imported information)

Aerobytes
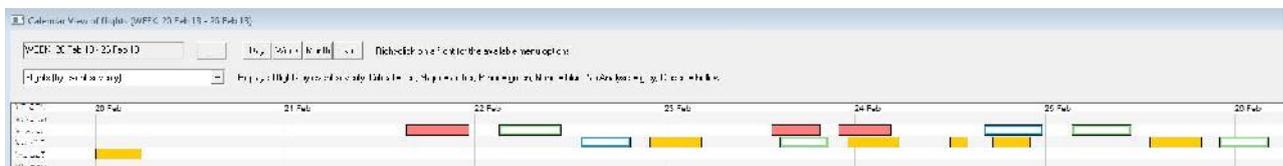
Reports

There is far more useful information in flight-data than just events. With a powerful and truly flexible reporting engine, you have the power to evaluate trends and statistics that no other system could ever produce.

Because the underlying software is inherently flexible, there is no need to build on extras for complex queries – the system was designed with this in mind from the beginning.

- All reports allow you to 'drill down' to the flight that created them so that you can quickly move from a high-level summary to the underlying flight data.
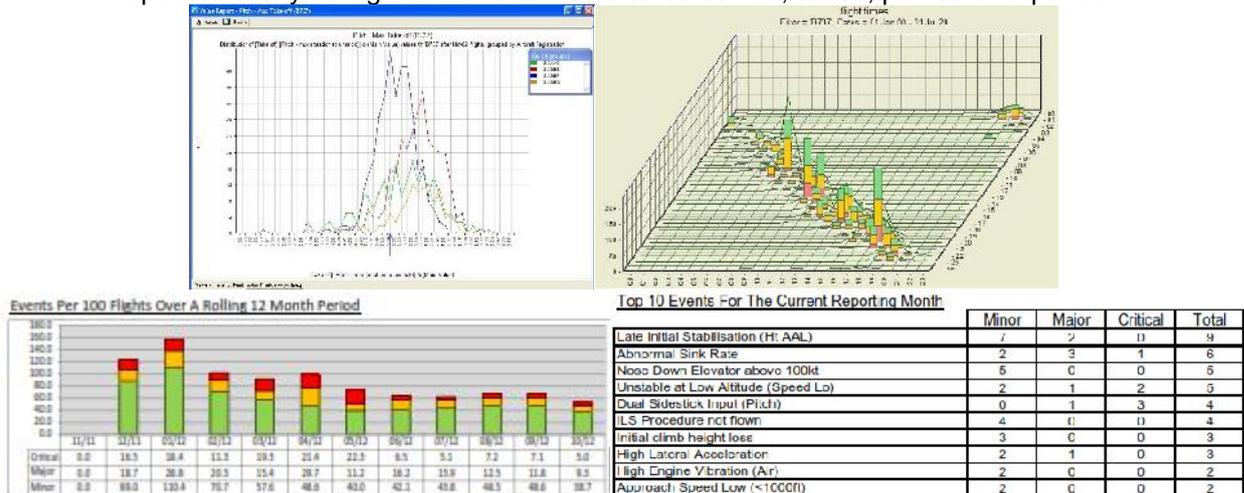- All reports are fully configurable and can be created ad hoc, saved, printed or exported

IT Issues

- Fully scalable – can be run as a standalone PC/server or on a cluster containing any number of PCs/Servers
- Fully supports network operations
- Data storage configurable per fleet to allow distributed storage across PCs/servers for large airlines
- Processing configurable to allow distributed processing across multiple PCs/servers
- We can recommend suitable servers depending upon fleet size

SMS Integration

Aerobytes allows true integration with SMS software (the only FDM/FOQA product with this capability – since 2007) so users can link safety data in different safety systems to see the big picture more accurately, more easily and more quickly. SMS users can, with one button click (and suitable permission) view the flight data that corresponds to the SMS occurrence and similarly Aerobytes users can view SMS reports associated with a flight with a single click. Customers report huge time savings.

3D Animation Integration

Although Aerobytes contains a 3D animation tool you can also run external animation tools or just record video. Standard exports include XPlane® and Google Earth. In addition tools such as FASET from Applied Infomatics allow a highly detailed animation, with the standard Aerobytes event and state point labels, to be synchronised with other flight data views.

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Engine Health and Fuel Monitoring

Many aircraft record excellent engine-health and fuel data as part of their flight-data.

Fuel Monitoring data can be used to support flight planning, route choice etc and to quickly identify inefficient engines or airframes. With current fuel costs the savings that can be made in this area have the potential to pay for an Aerobytes system many times over.

The security model used within the Aerobytes software allows engineering data to be shared without compromising the identity of crews or operational events.

Data can be exported to a range of third-party products including Sage, Compass, Boeing APM, ETS Fuel Saver etc.

About Aerobytes

Aerobytes was formed in 2001. The first two years were spent developing the software in conjunction with an airline. Since then the software has been sold to new and existing users of FOQA systems. Approximately one quarter of the systems sold have been to upgrade competitors' products.

Our license model is simple and easy to understand. Customers receive free upgrades, all features are included - <u>there are no hidden extras</u>.

Clients include:**1Time**, **Abu Dhabi Aviation, ABS Jets, ADAT, Aegean Airlines, Aeolian Airlines**, **Aer Arann**, **Aerolineas Argentinas**, **AeroLogic**, **Airfix**, **Air Atlanta, AirBridgeCargo, Air Canada, Air Cargo Germany, Air Express, Air Greenland**, **Air Italy**, **Air New Zealand, Air Nuigini**, **Aladia Airlines**, **ANI**, **Arke Fly**, **AviSwiss**, **Best Air**, **BH Air**, **Blue 1**, **Bluebird Cargo**, **Blue Panorama**, **bmi** *– experienced user of competitive product - upgraded to Aerobytes*, **BMW**, **Bulgaria Air**, **Cargo B**, **Cargo Italia**, **Cargolux** *–upgraded to Aerobytes*, **Centralwings**, **Channel Express** *– used Airfase for less than a year before changing to Aerobytes*, **CHC Scotia** *– major helicopter operator,* **Club Air**, **Compass Airlines**, **Croatia Airlines**, **Corendon Airlines**, **Cyprus Airways** *– previously used AirFase*, **Denim Air**, **Etihad Airways**, **Eagles**, **Etihad** *– changed from service with another provider to in-house with Aerobytes*, **EuroAir**, **Eurolot**, **European Aviation Air Charter**, **Excel Airways, DaimlerChrysler, Dutchbird**, **EUJet**, **FAA-AVN**, **Faroe Jet**, **Finnair** *– previously AirFase user,* **Finnish Commuter**, **First Air**, **First Choice** *- Sagem user before changing to Aerobytes,* **Flair Air, Fly Dubai, Fly Excellent**, **Fly Dubai**, **Flyglobespan**, **Flynordic**, **Flightline**, **Fly Jet**, **Ford Flight Europe**, **G5 Executive, Garuda Indonesia, GIR Jet**, **Helios**, **Helvetic**, **HiFly, IBEX**, **Inter Airlines**, **Islandsflug**, **Jetran Air**, **Kingfisher Airlines**, **KLM Cityhopper** *- previously used a competitor's product- upgraded to Aerobytes*, **Kuwait Airways**, **LOT**, **Martinair** *– previously used Sagem*, **Maximus Air Cargo**, **Mesaba Airlines**, **Mistral Air**, **MHS**, **MK Airkines**, **Monarch Airlines** *– experienced user of Teledyne software upgraded to Aerobytes*, **MyTravel UK** *– experienced user of competing product before upgrading to Aerobytes*, **Nasair**, **Netjets Europe**, **Nippon Cargo Airlines**, **Nordic Airways**, **Nordic Global Airlines**, **Novair**, **Ocean Airlines**, **Olympic Air**, **Oman Air** *– previously used Flightscape,* **Orient Thai**, **Peach Aviation**, **Pelita Air**, **Petroleum Air Services**, **Piedmont**, **PNG Airlines**, **Polar Air Cargo / Atlas Air** *– p*reviously used SAGEM and Teledyne products *before changing to Aerobytes,* **Porter**, **PSA**, **Regent Airways**, **Royal Jet**, **Saudi Arabian Airlines**, **Shell Aircraft**, **SkyAirWorld**, **SKY Airlines, SkyEurope**, **Sky Germany, SkyService**, **SpiceJet**, **Star Peru**, **StarXL**, **Sudan Air**, **Sun-Air** *– BA Franchisee*, **Sun Country**, **Swedish Coast Guard**, **TAG Aviation**, **Thai Airways**, **Thomas Cook Airlines UK** *– previously Sagem user before changing to Aerobytes,* **Titan Airways**, **TNT Airways**, **Transavia**, **Turkuaz**, **UK International**, **Ukraine International**, **Variglog**, **Virgin Atlantic** *– previously used competitors product,* **Virgin Express, Viking**, **Viva Aerobus**, **Wataniya Airways**, **White Airways, Wideroe** *– one of the most experienced FOQA operators worldwide – upgraded from competing system to Aerobytes*, **XL German Airlines**. See website for up to date list.

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The Future

All software products that have stood the test of time, have one thing in common – they have evolved in response to customer demand.

Aerobytes FOQA is one such product and is continually improving as part of a carefully managed process.

At the time of writing, over 70% of the changes to the latest version of the product were directly in response to customer requests.

Aerobytes understands that its reputation and future success hinge upon it listening to and responding to its clients – not hollow marketing words, but something that is evidenced by our clients and our products and our support team.

Some of the main reasons cited by aircraft operators for purchasing Aerobytes FOQA software are:
- Ease of use
- Automation and Functionality
- Excellent Support
- Analysis and Visualisation capabilities
- Tools to track corrective actions
- SMS software integration
- Drill down allowing users to get from the big picture to individual flights.

Contact Information

Aerobytes Ltd   Tel: +44 (0)1483 273767
Astra House   Web: www.aerobytes.co.uk
The Common   Email: enquiries@aerobytes.co.uk
Cranleigh
GU6 8RE
UK

To request a demonstration, online demonstration or proposal contact:

Kevin Martin   In Americas   Bob Whetsell
+44 (0)113 815 1326   +1 512 818 1407
kevinm@aerobytes.co.uk   bobw@aerobytes.co.uk

And finally an extract from an email sent to our support team on a retirement: (2013)

"Thank you all for your outstanding support over the last number of years. In my experience you are by far the best support team I've ever dealt with, nothing is too much trouble. Thank you so much.

I wish you well and the very best for the future.

Stuart Dobbyn | Flight Safety Manager | Aer Arann "