Episode 2: Adapting to New Circumstances
TCPC; Aircraft Disinfecting; Fuel Testing & Biocide

Wed. 16 September 2020 - 7:30-9:30am EDT
• This session is **recorded**.

• Your mic is automatically **muted**.

• **Polls:** Click on Submit once you have selected your answer

• Use the **Q&A feature** on the right side of your screen to submit your questions to our panelists
Competition Law Guidelines

IATA’s Legal Anti-Trust Counsel will be screening the questions.

Daniel Kanter
Assistant General Counsel, IATA
kanterd@iata.org
Opening Remarks

- Role of the MCC
- MCTG Data collection
  ⇒ www.iata.org/mctg
- IATA resources about COVID
- Polls and Q&A
Next Episodes

• **Episode 3 – Sept 23**
  (7:30am EDT or 1:30pm in GVA or 7:30pm SIN)
  How COVID-19 is reshaping aircraft leasing & MROs businesses

• **Episode 4 – Sept 30**
  (7:30am EDT or 1:30pm in GVA or 7:30pm SIN)
  The role of used serviceable material (USM) in the industry restart

Register for Episodes 3 & 4 ⇒ [www.iata.org/mcc](http://www.iata.org/mcc)
Watch Episode 1 ⇒ [www.iata.org/mcc-2020](http://www.iata.org/mcc-2020)
Episode 2 - Agenda

- 00:00 – Opening Remarks & Introductions
- 00:05 – Airline Tech Ops Regulatory Background (IATA) + Q&A
- 00:35 – Transport of Cargo in the Passenger Compartment (Airbus) + Q&A
- 01:05 – Confident Travel Initiative Aircraft Disinfection (Boeing) + Q&A
- 01:35 – Fuel Microbiological Test Kits and Biocide Treatment + Q&A
- 02:00 – Episode 2 Wrap-up
Introductions

Rami AWADALLA
Director of Fleet Engineering - Postholder CAMO – Etihad
rawadalla@etihad.ae

Dragos BUDEANU
Manager Paperless Operations – IATA
budeanud@iata.org

Matthias IEROVANTE
Head of Freighter Projects A330 Program Directorate – Airbus
matthias.irovante@airbus.com

Vincent BOUSCARY
Head of Weight & Balance Operations Support and Training – Airbus
vincent.bouscary@airbus.com

Dan FREEMAN
Director Payloads & Customer Engineering – Boeing
daniel.k.freeman@boeing.com

Mark VAUGHAN
Head of Jet Fuel Management – South African Airways
MarkVaughan@flysaa.com
Airline Tech Ops
Regulatory Background
Challenges & Opportunities
During and Post the COVID Crisis

Dragos Budeanu – IATA
Manager, Paperless Ops
“Who’s Driving & Where To?”

• Aviation Industry Stakeholders (e.g. Operators, Aircraft OEMs…) in answer to the need for public air transportation (pax and cargo)

• Regulators are overseeing the process for a safe, reliable, consistent and sustainable answer to the public need

The above tenets should be clearly seen by viewers from all perspectives and they are, aren’t they?
Q: Which direction does the aircraft in the picture steer to for continuing its taxi?

A: 
   a) straight ahead
   b) to the left
   c) to the right
"What News Did the Crisis Bring?" Nothing!
“What News Did the Crisis Bring?” Everything!

September 16, 2020

MCC 2020 Webinar Series - Episode 2
Challenges and/or Opportunities?

• World wide fleet usage
  • aircraft status: fly-park-store
  • optimize decisions and procedures: business – technical – operational – regulatory

• Fleet re-purpose and operation re-scoping
  • cargo transportation needs vs. feasibility

• Operating with additional sanitization expectations
  • aircraft cleaning and disinfection approaches and solutions

• Issues with aircraft “fuel uplift” with no “aircraft lift”
  • handling a “flight essential” during aircraft parking times
Transporting Cargo by Air

Ideal to encourage

Options to consider

Occurrence to prevent
Definition of a Cargo Compartment

25.855 (and AMC) Cargo or baggage compartments
• General conditions to classification

25.857 (and AMC) Cargo compartment classification
• Categorization based on presence of:
  ▪ remote or direct access observation and control by crew
  ▪ fire or smoke detection with flight deck effect (FDE);
  ▪ built in fire extinguishing / suppression vs. portable extinguishers
  ▪ compartment liners
  ▪ ventilating airflow shut-off valves (and control thereof)
• Class A, B, C (typical “belly” cargo compartment, D(old standard discontinued), E (typical main deck/cabin in all-cargo aircraft), F
## The Aircraft Definition/Configuration

<table>
<thead>
<tr>
<th>Cargo Compartment*</th>
<th>Regulatory Requirement</th>
<th>Passenger Cabin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Fire/Smoke Detection (built-in)</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>Fire Extinguishing (built-in)</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>Wall Liners</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>High Strength Floor Structure</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>Isolate from Ventilation Air</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>Contain Smoke/Gas</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>Secure Tie-Down of Cargo</td>
<td>Possible</td>
</tr>
</tbody>
</table>

*Class C – lower deck cargo compartment on aircraft carrying pax

September 16, 2020

MCC 2020 Webinar Series - Episode 2
# Applicable Cargo Configurations

<table>
<thead>
<tr>
<th>Cargo Type</th>
<th>Passenger Cabin</th>
<th>Cargo Compartment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overhead Bin / Cabinet / Closet</td>
<td>On the Seats</td>
</tr>
<tr>
<td></td>
<td>Under Seat</td>
<td>In Approved Seat Bags (installed on seats)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restrained to Seats (with nets and/or straps)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restained to Seat Tracks, On Cabin Floor (seats removed)</td>
</tr>
<tr>
<td>Humanitarian Supplies / Medical and Essential Cargo</td>
<td>✓</td>
<td>NAA Approval (with STC)</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>NAA Approval (Exemption)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NAA Approval (with STC or by TCH)</td>
</tr>
<tr>
<td>General Cargo and/or mail</td>
<td>✓</td>
<td>NAA Approval (with STC)</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>NAA Approval (Exemption)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NAA Approval (with STC or by TCH)</td>
</tr>
<tr>
<td>Dangerous Goods</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Cargo Aircraft Only Dangerous Goods</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>
Transporting Cargo in Pax Cabin (TCPC)

- Limited flexibility if no NAA Approval involved (i.e. “business as usual”)
- The NAA Approval must be obtained for Design (DAH) and Operation (Airline)
- Exemption – always for limited time frame and not a sustainable business solution
- Always conditional to Operator’s Risk Assessment
- Significant set of specific risk mitigation measures must be implemented by the Operator when flying TCPC
## Regulatory Approach Examples for TCPC

### EASA
- **Exemption under Article 71(1) of Regulation 2018/1139**
  - Expiration: set to expire after 8 months of use unless (EC) procedures engaged.
- **Deviation from 25.855 proposed; if adopted**
- **Seat Bag STC limited to aircraft types exist**
  - Not time bound.

### FAA
- **Exemption No. 18561 for TCPC on seats**
- **Exemption No. 18584 for TCPC restrained to seat tracks (seats removed)**

### TCCA
- **Exemption by Civil Aviation Safety Alert (CASA) 2020-04**
- **Existing Approved STC to limited aircraft MSN**
  - Not time bound.
Regulatory Reference Links

EASA
- Consultation paper Deviation from CS 25.855 related to the design of cargo compartments installed on Large Aeroplanes
- Transport of Cargo in Passenger Compartment - Exemptions Under Article 71(1) of Regulation 2018/1139 (The Basic Regulation)

FAA
- Exemption No. 18561A
- Exemption No. 18584

TCCA
- Transport of Cargo in Passenger Compartment - Civil Aviation Safety Alert (CASA) No. 2020-04
Thank you!
Any questions?
Transport of Cargo in Passenger Compartment
Airbus update
Matthias Ierovante & Vincent Bouscary
16th September 2020
Background

COVID-19 situation since March 2020:

- 70% of fleet grounded
- Humanitarian and general cargo transport flight demand increased
- Air cargo traffic increasing
- Operators need to maximize cargo capacity of pax aircraft
  - **Significant airlines demand for Manufacturers support**
Airbus Support to the need of Transport of Cargo in Passenger Compartment:

March 2020: Early Airbus guidance for Transport of cargo in approved locations (e.g. overhead bins, underseat, …)

Based on draft EASA guidelines Airbus provided:
+ Operators Information Transmission (OIT)
+ Webinars
+ In-Service Information (ISI)

April 2020: Airlines Support for Transport of cargo on seats or cargo on floor (after seat removal)

Strong collaboration of Airbus with EASA to clarify the exemption guidelines
Comprehensive dossier prepared by Airbus to support airlines in the exemption process

September 2020 Airbus Service Bulletin issued for Transport of cargo on passenger cabin floor

Available from Airbus World (ISI 00.00.00370)

Available on demand from Techrequest
Airbus SB: Cargo transportation on pallets

Main driver for solution:

• Use of standard cargo equipment available at airlines
• Maximize cargo volume
• Ease cargo installation in the cabin
• Minimize cabin tear and wear

→ PKC pallets with standard net for restraint.
→ Pallets attached to floor with cargo straps
→ Capacity: 2.7m³ / 260kg per pallet
## Cargo in cabin options: capacities compared

<table>
<thead>
<tr>
<th></th>
<th>A330-300</th>
<th>A350-900</th>
<th>A320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cargo on deck</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airbus SB</td>
<td>20 pallets</td>
<td>26 pallets</td>
<td>Not suitable</td>
</tr>
<tr>
<td>Weight</td>
<td>4500 kg</td>
<td>5800 kg</td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td>54 m³</td>
<td>70 m³</td>
<td></td>
</tr>
<tr>
<td>Cargo on seat*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EASA exemption</td>
<td>247 seats</td>
<td>291 seats</td>
<td>180</td>
</tr>
<tr>
<td>Weight</td>
<td>7800 kg</td>
<td>9200 kg</td>
<td>5700 kg</td>
</tr>
<tr>
<td>Volume</td>
<td>47 m³</td>
<td>55 m³</td>
<td>34 m³</td>
</tr>
</tbody>
</table>

*Airbus standard 3 class layout, cargo only loaded on premium eco / eco class seats

---

**A350-900**

When cargo is loaded on pallets, no fare-paying pax allowed.
## Cargo in cabin options - Airworthiness approval (exemption)

<table>
<thead>
<tr>
<th>Cargo on seats</th>
<th>Cargo on cabin floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local auth. exemption</td>
<td>Local auth. exemption</td>
</tr>
<tr>
<td>Exemption request</td>
<td>Exemption request</td>
</tr>
<tr>
<td>AIRBUS SB</td>
<td>Exemption request</td>
</tr>
<tr>
<td><strong>- Restraint system installation</strong></td>
<td></td>
</tr>
<tr>
<td>- Fire fighting equipment adaptation</td>
<td></td>
</tr>
<tr>
<td>- Oxygen system adaptation</td>
<td></td>
</tr>
<tr>
<td>Return cabin to original state</td>
<td></td>
</tr>
</tbody>
</table>

The Airbus SB simplifies the airline exemption request to the local Airworthiness authority.
The Airbus SB at a glance
Achievements and challenges for potential next steps

• **AIRBUS achievements:**
  – Quick reaction to COVID crisis with Web Live explaining EASA guidelines and AIRBUS way to support airlines
  – Creation of a specific Task Force to investigate potential solutions and better support airlines
  – Dossier prepared with all relevant information to support airlines in the exemption process
  – SB released to further facilitate the exemption process

• **Further investigations**
  – Avoidance of the exemption process needs to comply with the same requirements as a cargo compartment certification
  – Review of a potential full, non time limited, certifiable solution
Poll #1

Is your airline transporting cargo in the passenger compartment?

- Yes: 49%
- No: 23%
- I don't know: 3%
- Not applicable: 25%
Confident Travel Initiative
Aircraft Disinfection
Dan Freeman, Engineering Director
Confident Travel Initiative
September 16, 2020
Many of us are eager to start traveling again – but we want to know if it’s safe. We wonder:

What about surfaces in the airplane – how do I know what’s safe to touch?

What about air in the cabin – will I catch COVID-19 from other passengers?
Boeing is helping airlines protect passengers from a virus

**TODAY’S SOLUTIONS**

**CHEMICAL DISINFECTANTS**
20 tested, 8 Boeing approved disinfectants

**ELECTROSTATIC SPRAYERS**
Efficient application for hard to reach areas

**CABIN AIRFLOW**
Complete air exchange every 2-3 minutes

**HIGH EFFICIENCY PARTICULATE AIR (HEPA)**
99.9+% effective at removing particulates

**UV TECHNOLOGY**
For use in flight deck today, cabin is under study

**ANTIMICROBIAL COATINGS**
Developing our own, validating others’ for a long lasting solution

**THERMAL DISINFECTION**
Eliminating viruses with heat

**IONIZATION TECHNOLOGY**
Electrically charging the air to make it even cleaner

**TOMORROW’S POTENTIAL SOLUTIONS**

**BOEING ANTI-VIRAL COATING**
Breakthrough anti-microbial with high kill rate, long life

**UV BUILT INTO THE AIRPLANE**
Continuous disinfection through the travel journey

= UNDER STUDY
How Boeing Knows This is Effective

**ANALYSIS OF THE AIRPLANE:**
- Computational Fluid Dynamics (CFD) of cabin airflow
- Particle dispersion analysis
- Fomite transmission
- Monte Carlo analysis

**TESTING IN THE LAB:**
- Material compatibility with disinfectants
- Flammability
- UV resistance
- Fluid intrusion & electronic function

**TESTING ON AN AIRPLANE:**
- Cough testing using 1 micron particles and sensors for seated passengers
- Live virus testing with different disinfecting technologies
- UV Prototype validation
Tested Cleaning Technologies on a Live Virus

- Boeing, together with the University of Arizona’s Department of Environmental Science, conducted an innovative, first-of-its-kind test to help airlines eliminate the spread of COVID-19 in airplanes

- The goal: test effectiveness of cleaning products, methods and technologies against a live virus in a cabin

- The virus, MS2, is safe and harmless to humans and is harder to kill than COVID-19

- The virus was placed on strategic points throughout the cabin, like tray tables, arm rests, seatbelts and latches. Each area was then disinfected using one of the following products/technologies/methods:
  - Chemical disinfectants
  - Electrostatic sprayer
  - Antimicrobial coatings
  - Ultraviolet wand

- The University of Arizona analyzed results, to determine how successful disinfecting methods were at killing the MS2 virus
Results

• University of Arizona found all products tested were successful in eliminating MS2:
  o Chemical disinfectants
  o Electrostatic sprayer
  o Antimicrobial coatings
  o Ultraviolet wand

• Boeing recommends these cleaning products and procedures to airline customers as part of a multilayered approach to protect the airplane and keep it free of viruses

• The University is working on data to compare the successful kill rate of MS2 to a successful kill rate of COVID-19
Confident Travel Initiative Key Findings

• Boeing is investing in testing and research to determine the best available solutions and future technologies for protecting passengers from a virus

• Airlines and airports have adopted the multi-layer approach to combat the pandemic

• Cleanliness programs in the airport and airplane are effective. Sentiment analysis reveals that visible cleanliness programs are critical to passenger confidence

• Working with medical experts and transparently sharing to validate this work
Poll #2

Is your airline using any of these new technologies (UV light, electrostatic spraying, fogging, surface coating, etc.) to disinfect the cabin?

- Yes: 33%
- No: 33%
- I don’t know: 7%
- Not applicable: 28%
Fuel – Microbiological Test Kits and Biocide Treatment

Mark Vaughan
What are we going to discuss?

- What is microbiological contamination?
- How do we prevent microbiological contamination?
- Detection (Test Kits)
- Treatment (Biocides)
- Ballpark/High level costs of testing and treatment
- Feedback that OEM would like from airlines
Before we start, it is important to note that this presentation...

- is not an endorsement of any of the test kits or biocide.
- is not a training on how to manage microbial growth in your aircraft.
- does not override what is stated in the AMM of the OEM.

September 16, 2020
What are microbes?

<table>
<thead>
<tr>
<th>Problems</th>
<th>Primary Microorganism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe, valve and blockage</td>
<td>Fungi; biopolymer bacteria</td>
</tr>
<tr>
<td>Fuel probe damage</td>
<td>Fungi; biopolymer bacteria</td>
</tr>
<tr>
<td>Sludge formation</td>
<td>Fungi; bacteria (all)</td>
</tr>
<tr>
<td>Surfactant production</td>
<td></td>
</tr>
<tr>
<td>coalescer/water separator</td>
<td>Fungi; aerobic bacteria</td>
</tr>
<tr>
<td>malfunction and fuel/water</td>
<td></td>
</tr>
<tr>
<td>emulsions</td>
<td>Fungi; anaerobic bacteria and sulfur reducing bacteria</td>
</tr>
<tr>
<td>Corrosion (MIC)</td>
<td></td>
</tr>
<tr>
<td>Downtime</td>
<td>ALL</td>
</tr>
<tr>
<td>Suspended solids in fuel</td>
<td>Fungi; bacteria (all)</td>
</tr>
<tr>
<td>Hydrocarbon breakdown</td>
<td>Fungi aerobic bacteria</td>
</tr>
<tr>
<td>Filter clogging</td>
<td>Fungi; bacteria (all)</td>
</tr>
<tr>
<td>Injector fouling</td>
<td>Fungi; aerobic bacteria</td>
</tr>
<tr>
<td>Increased sulfur content</td>
<td>Sulfur reducing bacteria</td>
</tr>
<tr>
<td>Damage to protective linings</td>
<td>Fungi</td>
</tr>
<tr>
<td>Loss of Life</td>
<td>ALL</td>
</tr>
</tbody>
</table>

Table 1 Problems associated with microbial growth

Picture curtesy of © Hammond Fuel Additives
Consequences of microbial growth
Routine sumping to remove water is the key measure in minimizing microbial growth.

Active microbial growth occurs in pockets of water or in condensate films on fuel tank surfaces.

Free water forms from condensation:
- dissolved water in fuel as it cools on ascent
- humid air as it enters cold tank through vents on descent

Spores from the active growth are hydrophobic and are dispersed in fuel colonizing other areas of water accumulation.
Indicators of microbial contamination

- Foul smell
- Brown color water
- Particles in water
- Lacy foam between water and fuel layers
- Slime or sludge
Climate and Microbial Growth

Areas at higher risk of microbial growth
- Tropical zone
- High humidity
- High ambient temperatures
The microbial growth triangle\textsuperscript{2}

As aviation fuel moves through the system:

- **WATER**: Free water from settling, condensation creates and sustains a viable environment for microorganisms to grow.
- **MICROBES**: Present everywhere in air, fuel and water.
- **FUEL**: Microbes consume the fuel as nutrients.

The microbial growth triangle

As aviation fuel moves through the system:

- **WATER**
- **DIRT**
- **BUGS & SURFACTANTS**

The microbial growth triangle

**REMOVAL OF WATER**
Breaks the triangle and prevents the active growth of microbes

- **MICROBES**
  - Present everywhere in air, fuel and water

**Fuel**

Microbes consume the fuel as nutrients

Fundamentals of microbial growth

- Follow robust water drain procedures
- Visually check for water
- Eliminate water from the MBG Triangle
- Testing provides earliest detection
- Prevention is better than cure
IATA GM listed Test kits and categories

- Easicult® TTC / Easicult® M
- San-Al-Oil®
- FUELSTAT®
- MicrobMonitor®
- HY-LiTE® Jet A1 Fuel Test

Fuel Phase: Field Tests

Water Phase
IATA GM listed Biocides

Biobor JF by Hammond

Kathon FP 1.5 by Dupont (withdrawn from the market)
AMM recommended fueling practice for parked aircraft

Aircraft parked for longer than 1 month

- Fill each tank 10% of total volume while injecting biocide as per OEM AMM
- Test each tank for microbial contamination at start of parking and after 30 days
- If no biocide is applied testing needs to be done every 15 days
AMM recommended fueling practice for parked aircraft (cont.)

Aircraft parked for longer than 1 month

- Drain any free water from tank low points/drains, every 15 days
- If no biocide was applied, drain any free water from tank low points/drains, every 7 days
Assumptions made for the cost analysis

**Narrow body aircraft used for this exercise**

- Aircraft fuel tanks filled with 2 000Lt (500usg) fuel
- Biobor JF dosed at 270ppm (by mass)
- Number of tanks/tests (5)
- Estimated total cost of a test kit / aircraft between USD 70-90
- Biocide approximate cost ~ USD 20 (treat 500 usg fuel)
### Cost Analysis for long term parking WITHOUT biocide application

<table>
<thead>
<tr>
<th></th>
<th>Cost of test kit</th>
<th>Shipment Cost</th>
<th>Cost of Biocide</th>
<th>Shipment cost</th>
<th>Cost of Biocide Application</th>
<th>Manpower for sump drains</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st month</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start 1st month</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 7 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 15 days</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 7 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>end of 1 month</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total after 1 month</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>2nd month</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 7 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 15 days</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 7 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>end of 1 month</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total after 2 months</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

### Cost Analysis for long term parking WITH biocide application

<table>
<thead>
<tr>
<th></th>
<th>Cost of test kit</th>
<th>Shipment Cost</th>
<th>Cost of Biocide</th>
<th>Shipment cost</th>
<th>Cost of Biocide Application</th>
<th>Manpower for sump drains</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st month</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start 1st month</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 7 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 15 days</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 7 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>end of 1 month</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total after 1 month</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>2nd month</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 7 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 15 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>every 7 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>end of 1 month</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total after 2 months</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>
HY-LiTE® Jet A1 Fuel Test
Name: Ed English
Email: eenglish@fqsinc.com
Phone: +1 (770) 967-9790
Website: fqsinc.com

MicrobMonitor®2
Name: Mike Haywood
Email: info@echamicrobiology.com
Phone: +44 (0) 29-2036-5930
Website: echamicrobiology.com

San-Ai-Oil
Name: San-Ai-Oil – HND Aviation
Email: HND_aviation@san-ai-oil.co.jp
Phone: +81 3-5757-0322
Website: www.san-ai-oil.co.jp/

Easicult® TTC / Easicult® M
Name: Katja Skogman
Email: katja.skogman@aidian.eu
Phone: +358-50-381-7297
Website: aidian.eu

FUELSTAT®
Name: David Mitchell
Email: david.mitchell@conidia.com
Phone: +44 (0)1491-829102
Website: conidia.com

1In industry guidance material, the kit is referred to as “FUELSTAT resinae PLUS”

Hammond Fuel Additives
Biobor JF
Toll Free: (800) 548-9166
Phone: (281) 999-2900
Fax: (281) 847-1857
Website www.biobor.com/
Jet Fuel Microbial Testing Webinar:

www.youtube.com/watch?v=k1Onk8uX

Microbiological Contamination in Aircraft Fuel Tanks


store.iata.org/IEC_ProductDetails?id=9680-05
Feedback that OEM would like from airlines

**Standardisation of AMM procedures**

- Timeframe between positive testing and action?
- When positive test, are the tank clean, or is there any biofilm? etc...
- Is there correlation on the rate of findings based on routes (climate), age, storage time, etc.

**Questionnaire to assist OEM with next AMM revision**
A reminder

- Follow your airlines procedures (AMMs, etc.)
- Consult your equipment manufacturer
- Consult your biocide manufacturer
- Consult your test kit manufacturer
- Do your own risk assessment
- Do your own cost analysis
THANK YOU
Poll #3

Is your airline using any fuel biocide treatment during this pandemic?

- Yes: 31%
- No: 26%
- I don't know: 18%
- Not applicable: 25%

September 16, 2020
IATA COVID-19 Resources

www.iata.org


airlines.iata.org/topic/covid-19
Episode 2:
Adapting to New Circumstances
TCPC; Aircraft Disinfecting;
Fuel Testing & Biocide

Thank you for attending!
Any further questions?
Please email Geraldine Cros (cros@iata.org)
Episode 3:
How COVID-19 is reshaping the aircraft leasing and MRO businesses

Wed. 23 September 2020 - 7:30-9:30am EDT