



NBAA NEWS HOUR



NBAA News Hour: Sanitizing Your Business Aircraft During COVID-19, Part 2



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Director, Technical Operations
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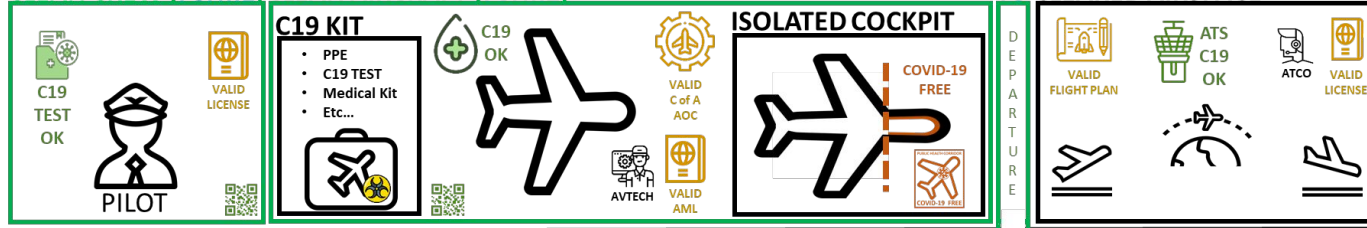


Nathan Winkle

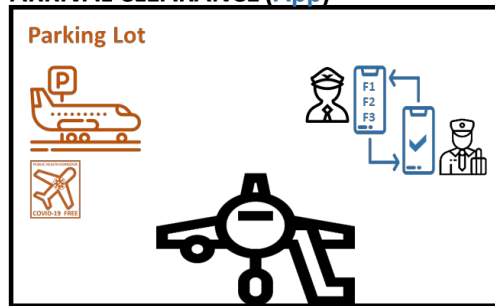
Founder and President
Thoroughbred Aviation, LLC

PUBLIC HEALTH CORRIDORS (PHC) CONCEPT

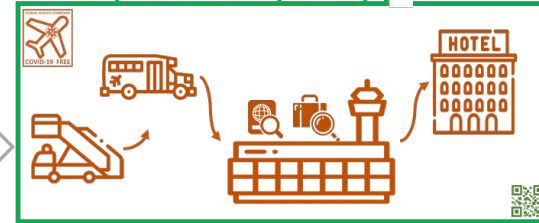
CLEAN CREW (Form1) CLEAN AIRCRAFT (Form2)



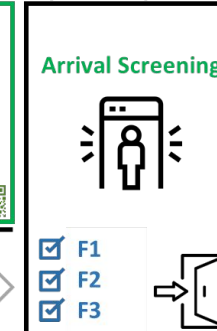
ARRIVAL CLEARANCE (App)



CLEAN A/P FACILITIES (Form3)



HOME BASE



Risk Assessment Elements

Pre-flight

- ▶ Known passenger?
- ▶ Outbreak status in the departure country/region
- ▶ Health questionnaire
- ▶ Temp screening
- ▶ Testing
- ▶ Immunity passports
- ▶ Crew health initiatives

In Flight

- ▶ Number of guests
- ▶ Use of face coverings
- ▶ Meal service

At Destination

- ▶ Aircraft cleaning / disinfection











Disinfection / Cleaning Strategies

- ▶ Technical approach
 - Risk stratification determines the level of response: from cleaning to deep disinfection
 - Risk reduction with pre-flight, in-flight and post-flight elements
 - Crew health surveillance
- ▶ Perception approach
 - Communication
 - Visibility

Understand the Tools to Provide a Solution



Log Reduction = Risk Reduction

Levels of Disinfection Difficulty			
	Extremely Hard to kill	Prions	 Transmissible Spongiform Encephalopathy (TSE); Creutzfeldt-Jakob disease (CJD) Mad cow disease; Scrapies
		Bacterial Spores 	 Spores of: C. difficile; C. tetanus; C. botulinum; Anthrax; Geobacillus stearothermophilus
		Mycobacteria	 M. tuberculosis; M. avium
		Viruses without envelopes	 Norovirus; Rotavirus; Rhinovirus; Poliovirus; Papillomavirus (HPV); Coxsackie; Adenovirus
		Fungi includes fungal spores	 Aspergillus fumigatus, A. flavus; A. niger; Candida albicans
		Gram negative bacteria	 Pseudomonas, Acinetobacter, Klebsiella, E. coli; Enterobacteriaceae, Legionella
		Gram positive bacteria	 Staphylococcus; Enterococcus; Streptococcus; Clostridia vegetative rods
	Easy to kill	Viruses with lipid envelopes	 Influenza; HBV; HCV; HIV; RSV; Coronavirus; CMV; HSV; Measles, Mumps; Rubella; VZV (Varicella-Zoster) Shingles/ Chickenpox



Hep A • 1-100 virus CFU ID* C. diff • 5-100 bacterial CFU ID TB • 10 CFU ID
 Measles • 1-100 virus CFU ID Norovirus • 10-100 CFU ID
 5-25 ID enveloped viruses

*CFU ID = Colony Forming Units in a minimum Infectious Dose of specified pathogen.



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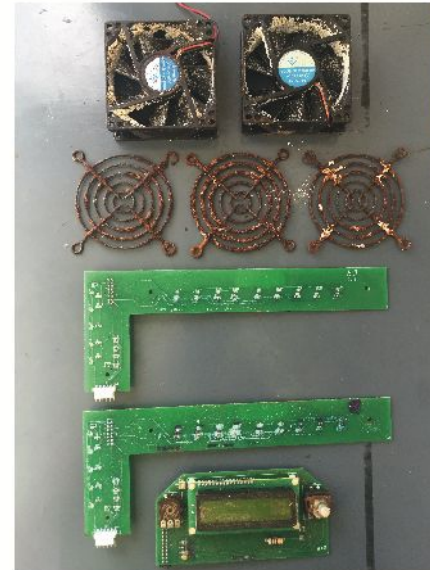


The Residue Conundrum CURIS[®]

Is it Safe?



Is it Corrosive?

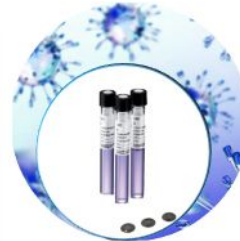




Liability release: Prove your efforts 99.9999%

- ▣ Reduce Liability
- ▣ Create Confidence
- ▣ Enable Safety of Workplace & Space


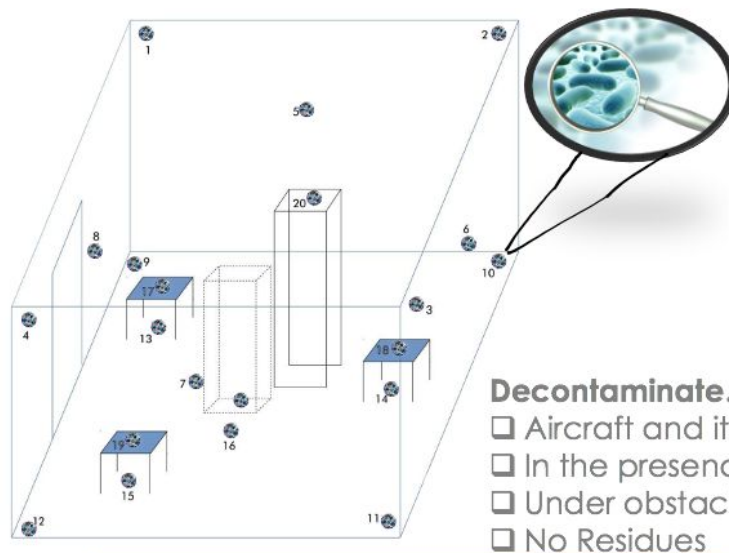
- Complete Decontamination
- Federally Regulated
- Science Driven Validation
- Event Autonomous Reporting



FDA and EPA Reliable method of testing:
Geobacillus Stearothermophilus – bacterial spore
99.9999% (six log reduction coupon)



Complete decontamination: 6 log reduction & proof with each cycle



Decontaminate...

- Aircraft and its contents
- In the presence of soil load
- Under obstacles
- No Residues

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