

The Business Daily of the Global Scheduled Airline Industry Since 1939

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AIRLINES

United Warns Up To 2,850 Pilots Of Possible Furloughs Unless PSP Extended

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United Airlines announced plans to furlough up to 2,850 pilots this fall, more than previously expected, unless Congress can agree to extend the Payroll Support Program (PSP) before funding runs out on Oct. 1.

The latest announcement means Chicago-based United will need to send out approximately 600 additional furlough warnings in coming weeks, as the company previously only notified around 2,250 pilots of potential furloughs in late June.

United SVP-flight operations Bryan Quigley told pilots in an Aug. 27 memo, viewed by Aviation Daily, that management decided to increase the scope of pilot furloughs due to “deterioration in travel demand compared to late June.”

Additionally, Quigley said that 250 pilots who previously received furlough warnings with a potential date of Nov. 30 will now see their furloughs moved up to Oct. 30. The latest plan calls for the first 1,747 pilot furloughs to occur on Oct. 1, followed by a further 572 furloughs on Oct. 30, and 531 more on Nov. 30.

“Our numbers are based on the current travel demand for the remainder of the year

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The Daily Memo

What Will The Post-COVID-19 Cabin Look Like?

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The COVID-19 pandemic may have changed just about every aspect of travel already—but aircraft cabin designers believe there may be more long-term shifts to come.

For the relatively few passengers now flying, the onboard experience is already different—masks, limited movements within the cabin and a reduction in onboard services—but interiors specialists are imagining the longer-term alterations to cabin architecture, aesthetics and technology that the pandemic could bring about.

London-based design studio PriestmanGoode—which has worked with the likes of Qatar Airways, Air France and Turkish Airlines—has set out its vision for a post-COVID-19 aircraft cabin. It has dubbed the concept Pure Skies, which it hopes can inform cabin products that will be entering service in around three years’ time.

PriestmanGoode is not the only specialist focusing efforts on

this fast-evolving area.

Germany-based cabin specialist Diehl Aviation has identified three areas that it hopes will help airlines to improve passenger well-being on board: optimizing circulation and disinfecting and purifying cabin air; touchless features for onboard areas, such as the lavatory; and UV-C technology for disinfecting surfaces and water purification.

Diehl already offers items like onboard sanitizer dispensers and hands-free lavatory handles. At the end of June, the company said it was hoping to launch new products related to these areas of focus as soon as possible.

With Pure Skies, the team at PriestmanGoode has undertaken a complete review of business and economy cabins, favoring “rooms and zones” over the traditional classes. The designer sets out how new technologies and materials as well as tech

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and our anticipated flying schedule, which continues to be fluid with the resurgence of COVID-19 in regions across the U.S.” Quigley said.

Reacting to the announcement, the United Master Executive Council (MEC) of the Air Line Pilots Association expressed disappointment that management did not work harder to reduce the scope of furloughs through the use of voluntary leave and early-out packages. “While other airlines have chosen to reduce manpower through voluntary means, it is tragic that United has limited those options for our pilots and instead has chosen to furlough more pilots than ever before in our history,” the United MEC told pilots Aug. 27.

The announcement comes just a few days after both American Airlines and Delta Air Lines previewed their own expected pilot furloughs, with the former expecting to shed 1,605 pilots, and the latter, 1,900—both substantially less than the 2,850 pilots that United plans to let go.

Airline unions have pinned their hopes on Congress extending the PSP before a Sept. 30 deadline, although that prospect has

dimmed following lawmakers’ failure to reach an agreement before taking their planned August recess. There has, however, been a slight uptick in optimism following remarks this week by White House chief of staff Mark Meadows, who said the administration would consider taking executive action to avert layoffs should Congress fail to act.

“If Congress is not going to work, this president is going to get to work ... and hopefully we can help out the airlines and keep some of those employees from being furloughed,” Meadows said in an interview with Politico.

Still, it’s unclear how the White House could extend the PSP on its own, leading some union officials to voice skepticism about how effective such a move would be.

“Executive orders would not put in place a ‘clean extension’ of our PSP with all of the job requirements that will save our jobs and keep our industry intact to serve the American public during this pandemic ... We need Congress to act,” Association of Flight Attendants-CWA Sara Nelson said in a message to members.

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niques such as color psychology could help to reduce passenger anxiety, improve personal space and hygiene, and enable “touch-free” journeys.

For passengers in Pure Skies rooms—the equivalent of business class—the design agency sees fully enclosed personal spaces partitioned with full-height curtains, seats designed with minimal split lines and seam-welded fabrics, antimicrobial materials, personal stowage and an inflight entertainment system fully synchronized with the passenger’s own devices.

Pure Skies zones—or economy—features, among other options, dividing screens every other row for greater separation, staggered seating to maximize the feeling of personal space and the removal of seat back trays in favor of a clip-on meal trays that would come direct from the trolley. “The team focused on how space in economy cabins had become too compromised,” PriestmanGoode said.

Airlines that survive the coronavirus crisis—and the accompanying economic fallout—will be facing severe financial pressures for many years to come; they will need to offer attractive ticket prices to a hesitant and recession-hit traveling public.

In this context, will they have the budget necessary to invest in cabin revamps too? Or, on the flip side, will getting the post-coro-

navirus cabin setup right be a key differentiator for airlines operating in an increasingly competitive sphere?

For those that do want to update their cabins in the coming years, PriestmanGoode’s vision aims to help boost ancillary revenues—another aspect of the business that has been affected by the pandemic.

For example, the design studio’s vision suggests that removing IFE screens opens up the opportunity for passengers who don’t bring their own device on board to hire a screen.

IATA does not see global air traffic recovering to pre-pandemic levels before 2024 and over the coming years airlines across the globe will be relying on a series of factors to help encourage that demand: better and more widescale COVID-19 testing; clearer, less disruptive travel rules in the short-term; and, further down the line, the much hoped-for vaccine.

Even so, in a few years’ time—once the industry has, hopefully, put the worst of the pandemic behind it—the changes in traveler behavior and expectations the coronavirus crisis has already provoked may well mean that some of these cabin developments will be adopted for the longer-term. At that point they will be just one of the tools airlines use to differentiate their services and entice travelers back into the air.

REGULATORY/LEGISLATIVE

EASA Schedules Boeing 737 MAX Test Flights For September

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EASA plans to start Boeing 737 MAX test flights on Sept. 7 in Vancouver, Canada in what is a key milestone for the aircraft to be recertified in Europe.

EASA said Aug. 27 that it has been working with the FAA and Boeing to schedule the flights, but the process has been made more difficult by the COVID-19 travel restrictions between Europe and the U.S. Performing the flights out of Vancouver proved to be a way to get around these limitations. Transport Canada started test flights Aug. 26 from Boeing Field while the FAA completed its test campaign on July 1.

“While Boeing still has some final actions to close off, EASA judges the overall maturity of the re-design process is now sufficient to proceed to flight tests,” the agency said. The flights will be preceded by simulator sessions at London Gatwick beginning Sept. 1 and will be followed by meetings of the Joint Operations Evaluation Board (JOEB) at Gatwick beginning Sept. 14.

The FAA on Aug. 3 issued a notice of proposed rulemaking (NPRM) defining conditions under which it would allow the MAX to return to service. Operators must install flight control computer (FCC) and MAX flight-deck display system (MDS) software that Boeing has been developing and validating for more than a year to address issues spotlighted in two fatal 737-8 accidents. They also must modify wire bundles that do not meet the latest wire-separation standards.

The major changes are installing updated FCC software that modifies the MAX’s maneuvering characteristics augmentation

system (MCAS), and putting pilots through new, updated training. MCAS, implicated in two fatal accidents that led regulators to ban MAX operations in March 2019, commands automatic horizontal stabilizer inputs to help the MAX handle like its 737NG predecessor.

The NPRM and a related FAA summary of its MAX review released at the same time emphasize that work still remains. The largest remaining piece is having regulators and line pilots validate proposed changes to MAX pilot training in the JOEB review. That will be followed by an FAA-led Flight Standardization Board (FSB) report that will establish minimum training curriculum for MAX pilots. Among the major training changes expected to be adopted are mandatory simulator sessions for all prospective MAX pilots. Previously, pilots with 737 type ratings could transition to the MAX following computer-based differences training.

The FAA has been working closely with many regulators throughout the evaluation process. For example, both EASA and Transport Canada flight test and human-factors specialists helped the FAA and Boeing develop scenarios to evaluate flight-crew response to the updated software, the FAA said. Regulatory experts from Brazil, Canada and Europe “are involved with the ongoing review and analysis of the results as validating authorities,” the U.S. agency added.

However, regulators have not agreed on every issue. EASA has been arguing that Boeing should introduce a third synthetic angle of attack sensor on the MAX for further redundancy to largely mirror the design set-up of the Airbus A320 family, which has three physical sensors as opposed to the MAX’s two. EASA has said that the MAX could be introduced back into airline service without the third sensor but that it could require Boeing to add it at a later time. EASA said it had no further comment on the MAX course of action at this time.

SUPPLIERS

Rolls-Royce Targets Disposals As COVID-19 Ravages Revenues

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LONDON—Aero-engine manufacturer Rolls-Royce is looking to sell off assets as the impact of the coronavirus crisis on the travel industry bites deep into the company’s finances.

The British engine-maker said it has identified “a number of potential disposals” that would allow the company to generate proceeds of £2 billion (\$3 billion), including Spanish aero-engine firm ITP Aero.

Rolls made pre-tax losses of £5.3 billion for the first six

months (H1) of 2020 through June, the company announced Aug. 27. This included write-offs of £1.1 billion and £2.6 billion from foreign exchange hedging contracts. The company made an operating loss of £1.7 billion compared to a profit of £200 million the same time last year.

Most of the losses were a direct result of the impact of COVID-19 on the company’s civil aviation business, which has led to reductions in flying hours, maintenance revenues and new engine orders.

Rolls CEO Warren East said the pandemic had “significantly affected our 2020 performance,” and that the company was now

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REGULATORY/LEGISLATIVE

CAAC Approves Avic MA60 Commuter Operator

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BEIJING—A commuter operator of Avic MA60 turboprop aircraft will soon begin flying after receiving approvals from the Civil Aviation Administration of China (CAAC).

The carrier, Express Airline, will “rely on” the fleet of Okay Airways in running short-haul services, according to municipal media in Changsha, the south-central Chinese city that will be the center of its network. The exact relationship between the companies was not explained.

Express Airline says on its website that it will use MA60s, under Part 135 of China’s civil aviation regulations, which cover commuter and on-demand services. The fleet of MA60s, designed to carry up to 60 passengers in scheduled service, will all be fitted with 30 business class seats each, according to the Sanhu Dushi newspaper. The number of aircraft is not stated.

Okay Airways formerly operated MA60s but in 2016 transferred them to affiliate Joy Air, which now has 23 aircraft of the type according to Aviation Week Intelligence Network Fleet Data. That fleet will presumably be the source of MA60s for Express Airline.

The Hunan Daily said the CAAC had granted preliminary approvals “at Changsha,” implying that the city will be the base of Express Airline. The soon-to-be-opened routes will link Changsha Huanghua (CSX) with Huaihua (HJJ), Tongren (TEN) and Zhangjiajie (DYG), said the Sanhu Dushi. Flights to Hanoi, 1,080 km (670 mi.) from Changsha, are also planned.

The CAAC, while reluctant to permit the establishment of new mainline scheduled carriers, encourages the development of regional airlines and general aviation. It also supports airlines that use Chinese aircraft, such as the MA60.

The provincial government of Hunan aims to establish air services centered on its capital, Changsha, and linking at least 13 other cities in the province.

FUEL WATCH

Global Jet Fuel Prices (Midpoint)*

As of August 27, 2020, compared with previous week and previous year

	Cts/Gal.	Previous Week	Previous Year
New York Barges	115.82	-1.28	-58.50
Chicago Jet	115.77	3.17	-68.30
West Coast (LA) Jet	115.72	2.62	-66.77
Europe: Rotterdam Jet (Barges)	105.00	-1.00	-77.00
Asia/Pacific (Singapore Kero)	104.00	0.00	-71.00

All data, except for Asia/Pacific, represent latest spot price data as of Wednesday. Asia/Pacific data represent latest spot price data as of Thursday. *All prices in cts/gal.

Source: Platts (Subsequent use of these data in index-format or in derived financial instruments requires a licensing agreement with Platts. For related questions contact Gerald_Bueshel@platts.com)



AIRLINES

U.S. Domestic Fares Sunk In July As Demand Recovery Stalled

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Fares for domestic U.S. air travel hit their lowest level since April in July, caused by a resurgence in COVID-19 that plateaued demand at around 25-30% of 2019's level, a report from Bloomberg Intelligence shows.

Domestic leisure fares fell 35% in July from a year ago, on par with April's lows and a setback from being down 26% year-over-year in June, according to the analysis of Airline Reporting Company (ARC) data by Bloomberg Intelligence analysts George Ferguson and Francois Duflot.

International fares were down less than domestic in July, owing to lower capacity and less competition on long-haul routes. Trips to Europe were just 6% cheaper in July from a year ago, while travel to Asia was 26% more expensive.

U.S. carriers lowered their domestic fares in July after scheduling more capacity than needed in June, spurred by competition to capture the small but growing pockets of leisure demand that helped produce nearly 10 consecutive weeks of climbing passenger numbers during the 2020 second quarter. Fares could see a slight boost in August, the analysts predicted, citing a recent uptick in total transactions during the week ended Aug. 16.

"Supported by CARES Act funds through [the 2020 third quarter], airlines can lower fares to pump up leisure demand and partially offset the effects of a resurgence of COVID-19 cases," Ferguson and Duflot wrote.

Airlines have reported weak forward bookings for the post-Labor Day period, leading them to repeatedly trim their third quarter (Q3) schedules in recent weeks from earlier plans. American Airlines, for example, now plans to fly less than half its original fourth-quarter schedule, with long-haul international capacity reduced to just 25% of 2019 levels.

Southwest also recently cut its estimated Q3 capacity to a range of down 30-35% from 2019, compared to previous estimates of a 20-30% decrease.

"It has become increasingly clear there is a ceiling to the demand recovery until there is either a successful treatment, a vaccine in place or acceptance of COVID-19 as a new reality," Cowen analyst Helene Becker wrote in a recent client note.

U.S. passenger throughput tracked by the U.S. Transportation Security Administration (TSA) has been mostly stagnant in recent weeks.

However, on Sunday Aug. 16 more than 865,000 people were processed by TSA—the most in a single day since the pandemic reached North America in mid-March. Less encouraging was Tuesday, Aug. 25, on which only around 523,000 people took to the skies, making it the weakest day since June 30.

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taking steps to increase liquidity.

"In light of ongoing uncertainty in the civil aviation sector, we are continuing to assess additional options to strengthen our balance sheet to enable us to emerge from the pandemic well placed to capitalize on the long-term opportunities in all our markets," East said.

East said a restructuring of the company's Civil Aerospace business was making "significant progress," with the aim of reducing the civil aerospace business' headcount by 8,000 along with another 1,000 personnel from the company's central functions.

Some 4,000 people had already left the company in 2020 by Aug. 27, with the remaining 5,000 expected to have left by the end of the year.

The changes also include the consolidation of widebody engine assembly and testing from three sites in the UK to one, at Derby, England. Trent fan blade production currently performed in Barnoldswick, England and in Singapore will be consolidated to the company's Singapore site. Advanced disc and turbine

blade machining will be focused on the UK. Blisk (blade integrated disks) production will transfer from the current three sites to two, in Derby and Oberursel, Germany.

Rolls also confirmed the impending departure of its CFO Stephen Daintith, who resigned to take up another opportunity. Daintith will remain in the role to support an orderly transition to oversee £1 billion of cost-cutting.

The engine-maker said it is on target to deliver around 250 engines during 2020, having delivered 137 engines in H1, but noted that flying hours from those engines under long-term service agreements had been reduced by 47%, although business jet and regional flights were less severely impacted. In its outlook, the company said there will be a gradual recovery in flying activity to 70% of 2019 levels by 2021 and around 90% by 2022. Rolls said this was its base case scenario "where there is assumed to be no second wave."

Large engine deliveries will remain at around 250 a year through to 2022, with the company optimistic about returning to positive cash generation in 2022.

TECHNOLOGY

Startup Tackles Infrastructure Barrier To Decarbonizing With Hydrogen

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Former Airbus and United Technologies chief technology officer Paul Eremenko has launched a venture to build the infrastructure for hydrogen-powered commercial aviation.

To kick-start the market, startup Universal Hydrogen plans to convert ATR 42 and De Havilland Canada Dash 8-300 regional aircraft to hydrogen fuel-cell propulsion to pump-prime demand. But Eremenko's goal is to prove out the company's hydrogen infrastructure before Airbus and Boeing make technical decisions on the next generation of single-aisles in the latter half of the 2020s.

Hydrogen is gaining attention as a means to deeply decarbonize aviation, with Airbus looking at the fuel as one way to meet its stated commitment to bring an aircraft with net-zero carbon emissions to market by 2035. But previous efforts to bring hydrogen to aviation have stumbled over the high cost barrier of the infrastructure required for production and distribution.

"If we want hydrogen aviation to happen, we need a much more capital-light approach," Eremenko said. "Our goal is to produce a minimally capital-intensive approach to building a hydrogen infrastructure that is scalable to global scale."

Universal Hydrogen is developing a lightweight, modular capsules—"think of them as batteries," Eremenko said—that can be transported via the existing global intermodal container network and loaded with existing airport equipment into aircraft that have been minimally modified to operate on hydrogen.

"What we are trying to do is connect production to consumption and allow them to take place in geographically disparate areas at temporally disparate times," Eremenko said. "We are not especially keen to do either production or play long-term in the consumption business, but we may have to do a little bit of both in order to get the aviation hydrogen market going."

Universal Hydrogen is developing both 850-bar high-pressure gas and liquid hydrogen capsules in the same interchangeable form factor so an airline can choose between them for each flight. "For the Dash 8-300 with the gaseous capsules, we get 400 nm range. With the liquid capsules, we get 550 nm," Eremenko said. "The fleet-wide average stage length for these aircraft is about 300 nm. So even with the gaseous solution you're going to be able to perform 75-80% of all missions flown."

"Airbus and Boeing seem likely to make decisions on the technology base for the single-aisle in the mid- to late-2020s ... We would like to de-risk the decision for them ... to go with hydrogen."

—PAUL EREKENKO, UNIVERSAL HYDROGEN

The capsule is a cylinder with rounded ends, for more efficient packaging during transport and storage in the aircraft, Universal Hydrogen chief technology officer JP Clarke said. One pair of capsules is mounted in a frame that provides structural support, plumbing and other systems. These two-cylinder modules are then transported as dry freight in cargo containers by road, rail or sea. At the airport, they are loaded onto the aircraft using existing ground handling equipment—or a forklift at more austere locations, Eremenko said.

Insulated but uncooled, the liquid capsule has a maximum 40-hr. dwell time between production and consumption because overpressure builds up as the hydrogen evaporates. "As a result of that, and because liquefaction is a more energy-intensive process than compression, an airline would pay more for the liquid capsule. But they'd get a slightly better range," Eremenko said.

In the case of the Dash-300 retrofit, up to three modules— or six capsules—are slotted into the rear fuselage forward of the cargo area, which would be untouched. The service door is widened slightly as part of the supplemental type certificate modification. The hydrogen is plumbed through the dorsal fin, external to the fuselage pressure vessel, into the nacelles.

In each nacelle is a 2-megawatt hydrogen fuel-cell stack powering an electric motor—either a single motor of about 2 megawatts or around 1.6 megawatts, plus a smaller motor for auxiliary power. The existing propeller and controller are retained. A small lithium-ion battery handles throttle transients.

A fuel-cell's only emissions are warm air and water vapor. A thermal-management system including a P-51 Mustang-style zero-drag radiator on the nacelle cools the fuel-cell and motor. The water is collected in the outer-wing fuel tanks and dumped at flight conditions when no contrails are produced.

"We've designed the retrofit so that it meets or exceeds the nominal aircraft performance, other than the change in range capability," Eremenko said. "We lose two rows of seats in the back. And we relocate the rear galley to the front, which causes us to lose two rear-facing seats in the front. So we lose a total of 10 seats and the Q300 goes from a 50-passenger to a 40-passenger airplane."

Despite the loss of seats, operating economics in 2025—in terms cost per available seat mile—are estimated to be roughly equal between the modified and unmodified Dash 8. Hydrogen is projected to be more expensive than jet fuel in 2025, but that

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REGULATORY/LEGISLATIVE

Nigeria To Restart International Flights Aug. 29

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Nigerian aviation minister Hadi Sirika has announced that international flights will resume on Aug. 29, following a lengthy suspension because of the COVID-19 crisis.

Speaking via his Twitter account, Sirika said Lagos and Abuja will be the first airports to reopen for international flights, mirroring the process used to resume domestic flights from July 8. Sirika made it clear that he expects other countries to grant reciprocal access.

Lagos Airport confirmed the planned reopening via its Twitter feed.

As of late July, Nigeria had already inspected and cleared 14

of its airports for resumed operations, including Abuja, Benin, Birnin Kebbi, Calabar, Jos, Kaduna, Kano, Lagos, Maiduguri, Owerri, Port Harcourt, Sokoto, Uyo and Yola.

COVID-prevention measures at these airports include temperature checks, disinfection of shoes and baggage, mandatory face masks and social-distancing measures.

"Protocols and procedures [for international flights] will be announced in due course," Sirika said.

Nigerian carrier Dana Air resumed domestic flights on July 8 and is gradually ramping up capacity.

"While July load factors were in the 30s, August should end up about 50%," Dana Air COO Obi Mbanuzuo told Aviation Daily on Aug. 24. "So [these are] still difficult times, but people are getting more confident with flying and international traffic should help as well."

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cost is expected to come down over time, he said.

"There will be a growing cost advantage to hydrogen. On top of that, the maintenance and overhaul costs for a fuel-cell-electric powertrain are quite a bit lower than for a turboprop engine. Our estimates for maintenance and overhaul costs suggest at least a 25% improvement," Eremenko said.

Universal Hydrogen is working with partners to lighten a proven terrestrial fuel-cell and develop the motor. "These are fundamentally off-the-shelf technologies. I don't want to understate the challenge, but we think our plan is attainable on a three-year timescale," he said. "We're allowing some margin with a 2024 entry into service."

The startup has also engaged the regional airframers. De Havilland Canada has been "an exceptional partner to us thus far," Eremenko said. "ATR, which is starting to think about hydrogen, has also been positive toward the effort."

What would regional carriers have to pay in exchange for going green?

"The value proposition that we offer is that we would subsidize the conversion to hydrogen for them, up to offering it as a no-cost conversion in exchange for a long-term hydrogen fuel contract," he said. The established renewable-energy project finance market would then be tapped to pay for the conversions.

"The regional aircraft fuel market is about \$2 billion/year. So we might create a billion-dollar business by supplying the regional market if we get really good penetration," Eremenko said. "The huge opportunity in the 2030s is the single-aisle. And both Airbus and Boeing seem likely to make decisions on the technology base for the single-aisle in the mid- to late-2020s, for an entry

into service in the early 2030s. And we would like to de-risk the decision for them, as much as we can, to go with hydrogen."

Universal Hydrogen is six months into the initial design phase, self-funded to the tune of about \$3-5 million if partner efforts are included, he said.

"We're going into detailed design in the next month or two. And, by this time next year, we would expect to have an iron bird of the powertrain as well as an end-to-end demonstration of the full-scale capsule technology."

Experimental flight testing will follow, with one side of the aircraft converted to fuel-cell propulsion and the other left unmodified for safety of flight. "After experimental flight, we would go into certification flight test. And alongside that, we would mature the hydrogen logistics network and develop a low-rate initial production system for the capsules and the modules," he said. "To get us to market, we need an equity raise of about \$300 million."

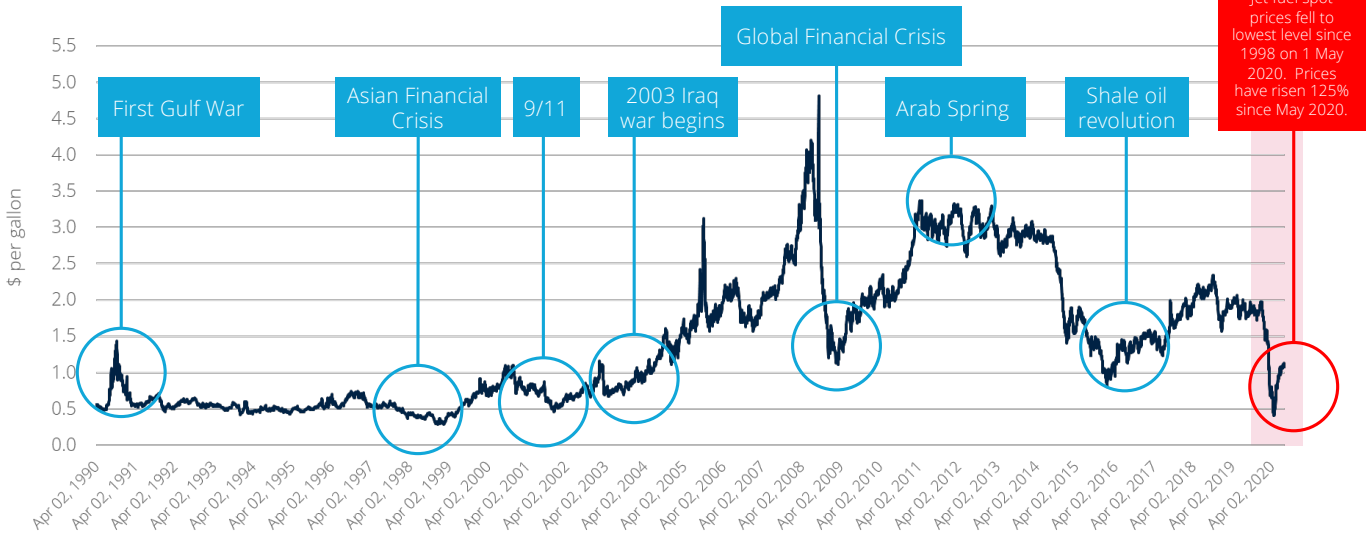
After kick-starting demand with its ATR and Dash 8 conversions, the startup plans to release its modification as an open-source reference design that can be customized by developers of commuter aircraft, single-engine turboprops or urban air mobility vehicles—Eremenko's eyes are firmly on decarbonizing the single-aisle sector.

Universal Hydrogen is already in discussions with both Airbus and Boeing. "They're both receptive and learning more about our approach and technology," he said. "But the proof will be when we are actually in operation at scale from 2024 onwards showing that we have solved the infrastructure and logistics problem for hydrogen for them."

Industry Data

COVID KPIs: Jet Fuel Spot Price

Price Of Jet Fuel From 1990 To 2020 As Of August 3, 2020

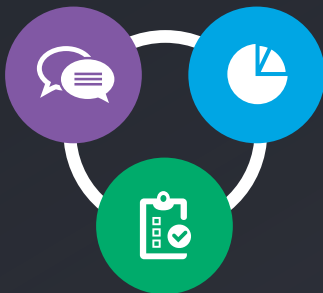


Source: US EIA, U.S. Gulf Coast Kerosene-Type Jet Fuel Spot Price FOB



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Industry Data

All Nationals Fuel Cost (Scheduled Service) 2019/2020

Year	Month	Domestic			International			Total		
		Consumption	Cost	Cost per Gallon	Consumption	Cost	Cost per Gallon	Consumption	Cost	Cost per Gallon
		(million gallons)	(million dollars)	(dollars)	(million gallons)	(million dollars)	(dollars)	(million gallons)	(million dollars)	(dollars)
2019	January	5.1	10.3	2.00	8.2	16.6	2.02	13.3	26.9	2.01
2019	February	5.0	10.3	2.07	8.4	18.0	2.15	13.4	28.3	2.12
2019	March	6.0	12.7	2.13	10.4	23.7	2.29	16.3	36.4	2.23
2019	April	5.6	12.0	2.12	9.0	20.1	2.23	14.6	32.0	2.19
2019	May	5.8	12.8	2.19	8.7	20.3	2.33	14.5	33.0	2.27
2019	June	7.0	14.2	2.03	8.3	18.7	2.24	15.3	32.9	2.15
2019	July	5.6	11.7	2.09	8.9	19.7	2.22	14.5	31.3	2.17
2019	August	7.5	15.2	2.03	8.5	18.8	2.21	16.0	34.0	2.13
2019	September	5.7	11.8	2.05	7.4	15.7	2.11	13.2	27.5	2.09
2019	October	6.3	13.1	2.08	8.6	18.1	2.12	14.8	31.2	2.11
2019	November	6.4	13.3	2.08	8.6	18.1	2.09	15.0	31.3	2.09
2019	December	7.5	15.3	2.05	9.5	20.0	2.10	17.0	35.3	2.08
2019 Total		73.5	152.5	2.07	104.4	227.7	2.18	177.9	380.2	2.14
2020	January	6.2	10.4	1.68	10.3	21.2	2.05	16.5	31.6	1.91
2020	February	5.8	10.3	1.80	9.2	19.2	2.08	15.0	29.6	1.97
2020	March	5.8	8.7	1.49	11.1	19.3	1.74	17.0	28.0	1.65
2020	April	3.0	2.7	0.92	9.4	12.3	1.31	12.4	15.0	1.21
2020	May	3.8	3.2	0.84	9.3	10.2	1.09	13.1	13.4	1.02
2020	June	5.0	5.9	1.19	9.8	12.7	1.30	14.7	18.6	1.26
2020 YTD		29.6	41.3	1.4	59.2	94.9	1.6	88.8	136.2	1.5
% Chg over 2019 YTD		-14.46%	-42.82%	-33.15%	11.82%	-19.07%	-27.62%	1.45%	-28.12%	-29.14%

Source: Bureau of Transportation Statistics F41 Schedule P12A