



DAC - MDC - Boeing Retirees of
California

HEADQUARTERS: P.O. BOX 5482, FULLERTON, CA, 92838, (714) 522-6122

Roundup

Ron Beeler- Editor (562) 296-8958

Newsletter No. 192

www.macdacwestretirees.org

May 2020

Jim's Corner

Well, isn't this a fine kettle of fish we find ourselves in? Now I suppose we could allow ourselves to get mired down in being "self-quarantined" but let's look at the opportunities we have in front of us. I am sure that like me, you have many, many of those "one of these days" projects around the house you can get at. So.....get at them. It will make for good conversation at our next opportunity to meet to discuss what you accomplished during the "stay at home, self-quarantine". At the same time our prayers go out to the many families affected by this COVID-19 virus.

It is going to be a very interesting tale to see how the economy gets started back up and what kind of traction it can get. There is certainly a big concern for the industry we were all associated with and the uphill fight that is in their future. Will airline travel pick up again? I believe it will, but with what kind of velocity? There is now clearly an oversupply of lift. Think about getting 300 or so MAX's delivered and into service and the reports that Airbus is trying to deliver A320s at almost a rate of 60 a month! New aircraft sales and keeping firms sold will be a real task for sales teams of Boeing and Airbus. There are some real challenges out there and it seems strange now just being a spectator and not in the fight!

Hopefully by our next Retiree Luncheon in October the virus will be contained, and we can freely move about and be able to meet. I am sure there will be new norms to observe and protocols to follow. We are working on plans for that gathering and have a wide range of speaker possibilities ranging from Flying Cars to a speaker from Boeing to say where things are headed and getting the MAX back into service.

In the meantime stay home (by the time you read this I hope this has passed), stay healthy, keep in contact with family and friends – and love them up.

Looking forward to seeing many of you on October 6th. Who knows? This could be the first big outing for many of us!

Jim Phillips, President, DAC/MDC/Boeing Retirees Association

March 2020 Luncheon Speaker By Bill Rickard



As promised, our topic for the March luncheon was the Orbis Flying Eye Hospital (FEH) 3 and the speaker was Jack McHale. That number "3" gives away the fact that Orbis is now on their third airplane: #1 was a DC-8-21, followed by a DC-10-10, and now an MD-10-30F that was placed in service recently.



Jack started with a time-lapse video that started with the MD-10 in FedEx colors landing and ended with the converted airplane taking off in Orbis colors. A lot of action took place between the two events, and we had to watch really fast for 48 seconds to keep up. He then switched subjects and talked about the mission of Orbis.

It was clear he was passionate about the mission, even more than the airplane. The mission of ORBIS is to prevent and treat blindness by providing quality eye care to transform lives. Mounting the hospital in an airplane allows Orbis to take the facility to poor nations that have limited physical resources, limited ability to provide treatment, and limited numbers of trained professionals. They fly to those locations, invite patients for treatment, and invite professionals for training. When done, they leave behind treated patients, trained professionals, and supplies and equipment for treatment.

There are about 250 million people with visual impairment worldwide, of whom about 40 million are blind, and about 80% is avoidable or treatable, and 90% of those are in developing nations. One cause of blindness is trachiasis, which is caused by a waterborne bacteria, which is treated with an antibiotic called Zithromax. Another is cataracts, treated by a surgical procedure.

In the advanced economies, these are both easily treated and not a serious concern. In the developing world, treatment is rare to non-existent, and as a result many children and adults go blind. Each airplane has been a tremendous improvement in capability, building on experience with the previous airplane. Jack walked us through a number of breakthroughs achieved. Previously, all of the hospital items were installed directly to the airframe, as seats, lavatories, and galleys are installed in passenger airplanes.

For #3, Jack had the brilliant idea of mounting the interior items on pallets, like cargo, and thus they did not have to be certified as interior items. This also expedites the annual maintenance and inspections done on the airplane and equipment, and makes upgrades easier.

This was possible because #3, unlike #2, was a freighter with a large forward cargo door. Orbis depends on the generosity of companies and

individuals for its work. Jack listed for us the many companies that donated time and materials for the construction of the FEH, from the FedEx MD-10 airframe to the equipment in the hospital suite, to the exterior treatment. Another set of donors, people like us, donate time and money to pay the expenses of flying and operating abroad. We hope you consider making a donation.

Thanks to Bill Rickard for photos of our friends at the March Luncheon! If I didn't include you or yours, please go to our website and view the entire set of photos (MacDacWestRetirees.org), look for the March Luncheon and click on photos.

Coronavirus Impact on Boeing is Major

Whew! What a wild ride we have been on since the last time many of us met for lunch in early March!

For one thing, as we were planning our spring and summer activities, purchases, events and travels, all of that came to a screeching halt in the middle of March. From graduations to weddings to vacations, car shows, even funerals, the worldwide coronavirus pandemic has resulted in cancellation of those events and most of us being confined to quarters as they would say in the military.

Just as in other major crises to hit the country, the national resolve to defeat the virus enemy was remarkable. Who could have imagined everyone in face masks and observing social distancing just a few months ago?

I was asked to update everyone on developments at Boeing during the emergency. It's hard to really know where to begin but let's start with what has happened in industries directly affecting Boeing.

Due to its worldwide impact and the highly contagious nature of the coronavirus, discretionary travel has nearly ceased. Business travel also has been seriously curtailed. The cruise lines, hotels and airlines have been hit particularly hard. As a result, the airlines have cut way back on their available capacity and many jetliners remain parked.

Oil production increases by Russia and Saudi Arabia coupled with world-leading U.S. production and reduced demand due to business slowdowns from the pandemic have resulted in an oil glut and price war. The lower oil prices are a mixed blessing. They help consumers in all sectors, including airlines, but they decrease the urgency for airlines to replace less efficient aircraft with more efficient newer models.

The direct result has been a plunge in world demand for new aircraft which just a few months ago looked robust. Boeing CEO Dave Calhoun said in a letter to employees on April 29, "The demand for commercial airline travel has fallen off a cliff, with U.S. passenger volumes down more than 95% compared to last year. Globally, commercial airline revenue is expected to drop by \$314 billion this year."

As a result, Boeing is cutting its total workforce by roughly 10% (~16,000) through a combination of voluntary layoffs, natural turnover and involuntary layoffs as necessary, with deeper reductions of more than 15% across the commercial airplanes and services businesses, as well as corporate functions.

Production rates will be adjusted accordingly. Boeing expects to resume 737 MAX production at low rates in 2020, gradually increasing to 31 planes per month during 2021, with gradual increases to correspond to market demand. The 787 production rates will drop to 10 per month in 2020 and to 7 per month by 2022, with continuing evaluation of rates after that. Combined 777 / 777X production rate will drop to 3 per month in 2021 and with a measured approach to the 777X rate ramp. The 767 and 747 production rates will remain unchanged.

Boeing has been working hard to get the 737 Max recertified and thus qualified for delivery. A mid-2020 timeframe was predicted for resumption of delivery and service just in time for the busy summer travel season in the northern hemisphere. We were looking forward to the nearly 400 737 Max airplanes that have been built but not yet delivered coming into fleets worldwide and for Boeing to get the revenue from delivery of these planes. Recertification has been delayed by effects from the virus. When it occurs, some of the struggling airlines would just as soon not go forward with the deliveries at this time.

Other coincidental issues affecting the KC-46 tanker program and new CST-100 Starliner space capsule

being designed and built for service to the space station also were impacting Boeing. It reported a \$641 million 1st Q loss, with losses in Commercial and Defense and Space segments partially offset by positive earnings in Global Services. Still, total backlog was \$439 billion, including over 5,000 commercial airplanes

In anticipation of recertification of the 737 Max Boeing was planning to resume 737 Max production in May. But the state of Washington was one of the first areas in the U.S. to be hit with the coronavirus. When some Boeing employees tested positive for the virus, Boeing shut down much of its Puget Sound area production which affected about 30,000 of its 70,000 employees in the region. Puget Sound operations resumed on April 21 and 787 work at the Charleston, S.C. plant, closed since April 8, will resume on May 3 and May 4.

When the coronavirus crisis escalated Boeing was one of the hardest hit companies. Besides the human toll, it took a huge reduction in value of its stock, which stood at \$340 as recently as mid-February but plunged to \$90 in mid-March. Some of us, thinking it had hit bottom, bought stock when it was below \$100. Time will tell if that was a good move.

During the worst of the pandemic and stock market decline Calhoun called for the federal government to offer financial assistance to the airlines and aircraft sector. Four U.S. aid packages were passed by Congress and the Federal Reserve introduced more liquidity into the financial system to promote credit. The \$2.2 trillion federal CARES Act was passed in late March with funding to help hard-hit airlines and many others businesses.

On April 14 CNBC reported that airlines including American, Delta, United, Southwest, Spirit, JetBlue and Alaska, applied for portions of \$25 billion in payroll grants included in the CARES Act to help airlines. It is airlines' largest ever government aid package and requires airlines not to furlough or cut the pay rates of employees through Sept. 30. U.S. airlines employ some 750,000 people.

Calhoun said Boeing has sufficient cash available and it would explore other finance options, rather than accept a possible government equity stake in the company as a condition for financial aid. On April 30 Boeing began selling \$25 billion in corporate bonds

to raise cash. As of this writing Boeing had not requested direct government aid. But the company has eliminated stock buy backs and dividend payments. It also terminated its \$4.2 billion Master Transaction Agreement (MTA) with Embraer, where the parties had planned to create a joint venture comprising Embraer's commercial aviation business and a second joint venture to develop new markets for the C-390 Millennium medium airlift and air mobility aircraft.

Another aspect of the CARES Act that has not been well publicized is that those who are required to take minimum distributions from their tax deferred accounts will be allowed to skip those withdrawals in 2020 to avoid both removing the funds from their accounts when they are at low value and getting taxed on the distributions as ordinary income.

Meanwhile, in direct response to the coronavirus emergency Boeing volunteered its 3D printer capability at numerous facilities around the country to manufacture clear high-quality face shields for medical professionals that can handle rigorous disinfectants. Collectively they plan to produce and donate several thousand of these shields per week. The company volunteered its Dreamlifter cargo airplane to deliver them where they are most needed. And, on April 26 the Boeing Dreamlifter brought 1.5 million medical-grade face masks from Hong Kong



to the United States for healthcare professionals at Prisma Health in South Carolina, which is near Boeing's Charleston plant.

No one is sure when the virus will have run its course and effective treatments and vaccines against it will be available. Nor can anyone predict when life will return to normal. As travel habits resume we can hope that Boeing will be ready for an uptick in business. Our experience after the 9/11 attacks can serve as a partial guide. However, nothing has happened like this pandemic in more than 100 years and old business models may not apply.

The brain power being allied against this worldwide problem will have great benefits in the long run. As an example, one senior Ford Motor Company executive interviewed after his company partnered with another firm to make ventilators using their design, said Ford could produce a sizable number. Ventilators are fairly complex and they cost about as much as a family car. The Ford exec added that upon analysis of the original design and ventilator function Ford was able to use its own design and production capability to produce a much simpler ventilator faster and supply up to 50,000 ventilators by July.

Non-traditional collaboration of individuals and temporarily partnered companies will have many benefits going forward. We have seen examples of that in Long Beach when assembly line workers were on strike and engineers and employees from other groups temporarily performed duties in the factory. When the strike ended they had many suggestions for possible process improvements resulting from their experiences on the assembly line.

Among the likely changes resulting from the coronavirus pandemic are supply chain alterations, improved pandemic readiness, government cooperation at all levels, more streamlined distribution methods and perhaps improved and less costly medical devices.

Elayne Bendel, V.P. Secretary

BOEING 777-9X UPDATE Submitted by Mike Bottonfield



Everett, Washington (CNN) — The world's longest and largest twin-engine airliner, the Boeing 777-9X, has finally taken to the skies for its maiden flight, offering a ray of hope for the troubled US aviation company following months of grim headlines. After days of abysmal weather, airplane WH-001 took off from Paine Field, home of Boeing's wide-body factory, north of Seattle, on a January morning.

The flight had been postponed twice earlier in the week because of poor conditions, but as the aircraft taxied past the press viewing area, a rainbow appeared. When the moment did finally arrive, WH-001 was greeted by a light 8 knot tailwind, 6 miles visibility, and broken clouds at 3,000 feet as it rocketed down runway 34. Left at 9:08 a.m. local time. After a takeoff roll of just 30 seconds, the behemoth rotated gracefully into the skies. Relieved and excited crowd erupted into thunderous applause.

Long road to certification

Designed to carry up to 425 passengers on routes of 7,600 nautical miles -- a distance that would cover most long-haul routes -- the 777-9X is expected to become one of Boeing's key aircraft in the future.

Once airborne on Saturday, the first 777X was swallowed into the clouds as it headed north out of unpopulated areas and the Washington Coast on a flight path chosen for safety reasons. It climbed to an altitude of 14,000 feet and turned back east where it entered patterns over central Washington State, beginning the first of many test flights on the road to certification and eventually passenger service over the next 18 months. The day before, with cloud ceilings down to 2,000 feet, pelting rain, and winds gusting up to 29 knots, over 10,000 disappointed employees, journalists, and VIPs shivered for nearly five hours while the enormous 777-9X sat tantalizingly just off the runway, waiting for clearance to take off.

Appalling conditions

It wasn't meant to be. At 1:30 p.m. Friday with conditions not improving and the flight window closing, her first sortie was scrubbed. It's almost tradition that Boeing first flights occur in abysmal conditions, but this is the first time in memory that a flight had to be canceled due to elements.

Yesterday: It's back to the barn. The #777XFF officially scrubbed for 2nd day in a row due to poor weather. Tail winds for takeoff can't exceed 10 mph for 1st flight of a new aircraft type. Flight has to be routed over unpopulated areas on departure. Try again tomorrow. In normal times, a first flight of a new airliner is a cause for celebration. Events like these happen maybe twice a decade.

But for Boeing, these are anything but normal times. Following two fatal crashes of the 737MAX, the continued grounding of Boeing's most important aircraft -- which is reportedly responsible for 40% of the company's profit -- has prompted one of the 104-year-old airframer's biggest ever crises.

Though there is continued speculation of a new Boeing airplane to replace the 757/767 as a middle of the market airliner or the 737MAX with the future small airliner, Boeing has no entirely new models announced beyond the 777X. Bringing an entirely new aircraft to market takes at least 5 to 7 years.

The 777X, a program launched in November 2013, is the successor to the most successful wide-body airliner ever built: the 777, which first entered service nearly 25 years ago. The 777X is chock full of superlatives.

At 251 feet long, the 777-9 variant is the longest commercial airliner ever built. With a fuselage stretch of 9.4 feet over its predecessor 777-300ER, the 777-9 is able to accommodate up to three additional rows of economy seats 10 abreast, for a total of up to 426 passengers in a typical two class configuration. An increased range of 7,285 nautical miles -- 220 miles more than the airplane it replaces.

Record breaker

With the A380 and 747-8 Intercontinental ending their runs, the 777-9 stands alone as the largest airliner by passenger capacity being built in the world. Its main competition, Airbus' A350-1000, is proportioned more like the smaller 777-300ER.

To lift the maximum takeoff weight of this 775,000 lb. beast into the air, Boeing has built a new carbon-fiber-reinforced polymer wing with a wingspan of just over 233 feet, with raked wingtips. Each wing is the largest single composite structure in the world.

To fit on the same gates, taxiways and runways as the current 777-300ERs, Boeing has designed distinctive 11-foot folding wingtips that deploy just before takeoff and retract upon landing. Though this is common on Navy fighter aircraft built for landing on an aircraft carrier, folding wingtips on an airliner are a commercial first.

Under the wings are the largest, most powerful engines ever mounted on a commercial airliner: General Electric GE9X. These develop an incredible 105,000 lb. of thrust apiece while reducing fuel burn by 10% from their predecessor GE90 engine. The engines' diameters are as wide as a 737 fuselage. In spite of or because of their cutting-edge design and immense power demands, design flaws in the engine compressor have been a significant contributing factor to delaying the first flight of the 777X from 2018 to early 2019 and then to January 2020.

That said, this isn't an unusually lengthy gestation in the recent history of new airliner programs. In an era of flight shaming and airlines' increased emphasis on eco-friendliness and efficiency, the 777X is claimed by Boeing to deliver a net efficiency gain of 13% on a cost per seat basis compared to the 365-seat 777-300ER with a 29% reduction in emissions. Boeing says its newest flagship is 22% more efficient than the world's largest airliner, the A380.

"The operating economics of previous generation 777s, which could carry nearly as many people as the 777X with just two engines were already considerably better than those of the A380," said airline analyst Seth Kaplan. "Considering the 777X will be even more efficient, there's long-term hope for this airplane program even though the market reception hasn't been great so far."

Economics, engineering, and efficiency aside, the 777X is being designed to improve the passenger flying experience and not just in the premium cabin section of the plane. Borrowing from its pioneering stablemate, the 787 Dreamliner, Boeing's newest 777X has larger windows and a wider cabin for wider seats (especially in economy

A lower cabin altitude of 5,000 feet versus the typical airliner's 8,000 feet reduces the effects of fatigue and jet lag. The 777X also has higher levels of humidity to abate dehydration, cleaner air, less cabin noise, and smoother ride technology.

How and when can passengers expect to find themselves sitting aboard a new 777-9? Even with the increased scrutiny and testing for certification, Boeing projects a service entry in late 2021 with Lufthansa. Emirates, Etihad, Qatar, British Airways, Cathay Pacific, and ANA round out the customer list.

Boeing has 308 firm orders and 300 options of these \$440-million aircraft (at list prices, though discounts can reduce cost by half). But the stability of these orders is uncertain with Gulf carriers and Lufthansa reportedly re-negotiating and lowering order their commitments, partially due to economic weakness.

Though the 777-300ER is immensely successful in the Americas, North American orders are yet to emerge. As the replacement cycle for A380s and 777 Classics accelerates, Boeing expects the 777X order book to bulge by the middle of the decade.

But many analysts question whether this jumbo twin is now too large for the market as smaller Airbus A350s and Boeing 787s have attracted far more orders partially due to the rise of hub by-passing nonstop point-to-point service. "The 777X is an intelligent derivative of the 777, but I'm not sure if the 777X will be a raging success for Boeing as orders remain tepid, in part due to the delay of the GE engines, because the smaller 787 Dreamliner is such a good aircraft," Hartevelde says. "The 777X is the younger kid whose older siblings are overachievers. "I think the 777X will have a slow burn as an aircraft where its success may come over time, once the 777X has proven itself as a reliable aircraft that meets or beats Boeing's performance specifications."

In an email to the Boeing worldwide team, Boeing Commercial Airplanes President and CEO Stan Deal wrote: "I am incredibly proud of all our teammates who meticulously designed, assembled and supported the 777X. This day is ours to celebrate, and proof that if we work together we can achieve big things that make a difference in the world." The first flight was intended to last nearly 4 hours, but for reasons not immediately clear, it was cut short. As the aircraft descended, its landing lights penetrated the 700-foot cloud deck and the crowd gasped with



anticipation. At precisely, 2 p.m. local time, the 777-9X kissed rain soaked runway 15Right at Seattle's Boeing Field, after 3 hrs. 51 min. aloft.

The airplane's pilots describe the debut flight as "emotional." The scale of the airplane was apparent as it rolled past, with wingtips automatically retracting to their 90-degree locked state at 60 mph just as intended.

In keeping with the current climate, this first flight event was more low-key than previous similar events, but the crowd was no less appreciative. Boeing employees needed a morale boost and they got it. The two pilots Van G. Chaney and Craig Bomben alighted to thunderous applause and embracing hugs from their families and co-workers. Addressing reporters, they could barely contain their enthusiasm. "It was so much fun," said Chaney, the pilot-in-command and 777/777X chief test pilot. "The moment we rotated and saw the chase plane go by, it was very emotional."

Boeing Max Return at Risk in Major Work-From-Home Challenge -- Bloomberg

April 2, 2020 (Bloomberg) -- Of all the twists that have complicated the un-grounding of Boeing's 737 Max, this one might be the strangest: A global pandemic is keeping regulators from being in the same room. With airlines flying a fraction of their pre-virus schedules and production at many of Boeing's own facilities suspended, a small Boeing team has continued testing the latest software changes on the Max. The planes are wiped down and sealed between flights.

Boeing is sticking to its estimate of a mid-year return to service. But to do so, Boeing will have to pull off the ultimate work-from-home challenge: certifying an airplane with regulators who are self-isolating on different continents. One analyst predicted that with the logistical hurdles, the Max's return is at risk of slipping one to three months. "It is now difficult, if not impossible, for various global regulatory staff to get into the country, and the FAA's task list now includes many immense challenges related to Covid-19". A delay would add to the breathtaking challenges confronting Dave Calhoun, Boeing's new chief executive officer, and further squeeze Boeing's cash. The company faces plunging demand for its wide-body aircraft, and at least \$19 billion in costs

from the fallout of two fatal Max accidents that led to a global grounding more than a year ago.

Last month, Boeing drew down a \$13.8 billion loan to bolster reserves. Calhoun had hoped to put an end to incremental delays that frustrated investors and suppliers by laying out the mid-year timetable soon after he took over from the fired Dennis Muilenburg, saying the new timeline included a buffer.

But the spread of Covid-19 caused an unprecedented shutdown of economies worldwide and buffeted Boeing and the aviation industry, which lobbied for a share of the \$2 trillion rescue package Congress approved. The FAA said in a statement that it "is engaging with Boeing as the company continued to make progress on demonstrating that the 737 Max complies with certification standards."

A spokeswoman for the European Union Aviation Safety Agency said in an email response to questions that it's still "working hard" on the Max, and "the situation has caused no noticeable delay in the certification process so far." "There could however be an impact if the situation extends for more than a few weeks, making it impossible to travel to participate in simulator sessions or flight tests." What's more "There are still a number of open items for certification, and we are working on a road map with the FAA and Boeing to close all those items."

Social Distancing in the U.S measures are in place in many states until April 30. FAA Administrator Stephen Dickson, a former airline pilot, has declared he will take the Max training course and fly the plane himself before the agency approves it. But Dickson has been in self-imposed isolation after shaking hands with a member of Congress who tested positive for Covid-19. His isolation should end this week, but it shows how quickly seemingly simple actions can upend the process.

The Seattle area was an early epicenter of the virus, and Boeing suspended production at its giant manufacturing plants there for two weeks starting March 25 after one worker died and dozens of others fell sick. (As of March 31, the company counted 88 cases among its global workforce.) The shutdown includes a facility in eastern Washington State where the grounded Max planes are parked and maintained.

"Our teams are managing through the Covid-19

outbreak like many others by working virtually where we can, while taking precautions to ensure a safe environment for all of us,” Boeing said. “We are continuing to make progress on our certification efforts and are collaborating with regulators to address their requirements. Our estimate remains a mid-year start to returning the 737 Max fleet to service.”

Big Milestone

The next big milestone -- certification flights flown by the regulators’ own pilots to validate software that Boeing redesigned after the tragedies -- could still happen before the end of April. The timing remains unclear, however, and no such flights have been scheduled. Regulators are still figuring out how they’ll navigate quarantines and closed borders for the final test flights.

Canadian regulators don’t see their flights taking place until May at the earliest, said a spokeswoman for Transport Canada. The department “will make a decision close to the planned travel date”. Work at the Canadian regulator continues on addressing the remaining issues with the Max in spite of the virus-related restrictions. A “significant portion” involves technical reviews that don’t require travel to Seattle and can be carried out via documents, video conferences and phone calls.

The virus coverage has taken some of the pressure off Boeing and FAA staffers after a year of scrutiny. As they adapt to the challenges of being homebound, there are some benefits -- like being able to problem-solve with less worry about leaks to the media. Boeing pilots still take Max jets bristling with equipment out on regular runs to fine-tune the revamped flight-control software. On the ground, their colleagues are carrying out testing in flight simulators known as e-cabs.

Three Feet Apart

Last week, as U.S. carriers were paring flight schedules and pleading for aid, Boeing pilots were simulating daily airline service by using Max 7, 8 and 9 models to fan out from Seattle to California and North Dakota. Pilots and engineers are careful to keep their distance while in simulators or on board. The toughest challenge is the cockpit: the pilots sit about three feet apart. Typically there is also a test

director, perched behind the pilots, who sometimes leans forward to flip switches to begin tests. Boeing is still working to gain FAA sign-off for a plan to fix wiring on the Max that doesn’t meet safety regulations. Then there’s the question of how to convene international pilots who will assess the revisions to the Max. That session hasn’t been scheduled and probably is still weeks or months away.

Airlines who are fighting for their commercial lives may welcome yet another delay to the Max’s comeback. It would allow them to put off the elaborate campaigns needed to reassure cabin crews and travelers the jet is safe. For Boeing, another slip would have ramifications for both the restart of 737 production and the cash it collects once deliveries of the jets resume. Production of the Max was halted in January. Boeing has said it would restart the assembly lines about two months before regulators clear the plane. If the mid-year target holds, the factory in Renton, Washington, would rumble back to life this month or sometime in May, said a person familiar with the planning. However, this timing could also shift due to the pandemic.

The manufacturer is almost certain to deliver fewer of the 400 or so previously built Max jets sitting in storage this year than it and Wall Street analysts had expected. That could also shrink the cash it had hoped to reap by getting these aircraft to customers. Every 10 delivered Max planes generate about \$250 million in cash. “You want to find a way to keep the suppliers fed and the cash flowing,” said an analyst. Of the Max planes, he added, “The longer they sit, the more expensive it is to get them back in service.”

WELCOME NEW MEMBERS

Carol A. Denso, C1, Electrical Engineering
Kayoomars “Q” Balbas, Seal Beach, Com’l Av.Svcs.
Paul Buron, Seal Beach, Service Engineering
John G. Elliott, Seal Beach, Customer Svc.,
Electrical Systems
Clyde Huizinga, C1, Financial Planning
Christopher L. Haughey, C1, Flight Test, Product Support
Frances Kelley, C1, Systems & Equipment
Jack McHale, C1, Marketing
Marie Von Zabern, C1, Mod. Interior Project Mgr.
Branko Sarh, A3, Sr. Tech. Automated Assembly.

Barbara Callaghan, V.P. Membership