

BY MIKE MCELLHINEY

Our flight from JFK to LAX had been fairly uneventful: a smooth ride in the Airbus 320 at 38,000 feet, with a cruise speed of Mach 0.78. We had, however, endured a long six-hour ride with fairly strong headwinds (265 degrees at 138 knots). One hour from our destination, my first officer dutifully retrieved the LAX arrival ATIS from our ACARS (Aircraft Communications Addressing and Reporting System), and we both reviewed it with some surprise: The new special ATIS revealed that the ceilings and visibility had dropped significantly—we would need to brief for a CAT IIIB autoland approach.

My "new" first officer was in the middle of his IOE (initial operating experience) and seemed pretty upbeat and excited to experience a "for real" near-zero-visibility approach and autoland. Our airline requires that the captain be at the controls for the autoland approaches and that the first officer be vigilant and watchful for any signs of malfunction that would inhibit an autoland. I prebriefed the arrival and approach, and verified that the correct approach was selected in our FMS (or, as Airbus refers to it, the MCDU, multifunction control and display unit). Our cockpits are equipped with NavAero Class II EFBs, and I easily thumbed through the approach plates, R11VR2 arrival and the CAT II/III ILS to 24L. This arrival and approach has multiple step-downs and altitude constraints, but would be no problem given the advanced level of automation available to us on the Airbus.

I've always been a great fan of CRM



Phil Denver Jr.

# Cirrus: A Mini Airbus?

THE **SR22** AND **A320** HAVE MORE IN COMMON THAN YOU MIGHT THINK

(cockpit/crew resource management); I'm a firm believer that CRM and the many tools provided by the practice have contributed to the sharp decline in commercial hull losses in the last 10 years. I've written curriculum and facilitated many courses for general aviation, the military and commercial carriers. The specific CRM core topics that I teach and stress are communication, conflict management, situational awareness (broken down into task management and automation) and decision-making.

As we switched over to the approach controller, we were immediately cleared to 15,000 feet, cleared for the RIVR2 arrival and cleared for the ILS to 24L. The controller also added that CAT III operations were in progress. Descending through 18,000 feet, we completed the approach checklist and I selected 4,000 feet on the flight control panel, essentially putting the autopilot in a managed descent mode. In this mode, the autopilot will maintain a preselected airspeed of 280 knots, then slow to 250 knots approaching 10,000 feet, descend to meet all of the altitude constraints on the arrival and approach plates, and level off at the lowest selected altitude. To throw a curve ball in my demonstration of the Airbus' amazing automation, ATC issued us an airspeed of 210 knots so that they could vector an Asiana Airlines B777 ahead of us. I could have selected the speed on the flight control panel, but I chose to enter the airspeed in the MCDU, thus keeping the automation completely managed. This was also a good demonstration for the FNG (that's airline speak for the fine new guy).

We smoothly leveled off at 4,000 feet. I could see on the PFD that the glideslope was above us, and I engaged the approach mode and selected the second autopilot (required for all coupled ILS approaches). The autopilot captured the localizer right away, and the glideslope went into an armed mode. As the glideslope and our altitude intersected, the aircraft descended dutifully on the ILS to 24L. I requested the flaps and gear on schedule as the aircraft slowed to a 138-knot final approach speed. At 400 feet, the airplane went into LAND mode (as annunciated on the PFD). As the radar altimeter verbalized the altitudes—50, 40, 30, 10—the aircraft firmly touched down on the runway and the autobrakes engaged, slowing the aircraft. Because the autobrakes worked smoothly, I used very little reverse thrust. The runway centerline lights were faintly visible. I dis-

engaged the autobrakes by a gentle tap of the brakes and, at 60 knots, disengaged the autopilot and cleared the runway. "Wow" was all the first officer could manage to say with a huge grin on his face.

Taxiing to the gate, I reflected on the approach. I literally had pushed or engaged a sum total of three buttons from 20,000 feet all the way down to an autoland and nearly complete stop on the runway. Yes, I'll admit that I'm a button-pushing airline pilot, but the level of automation that we enjoy on the Airbus A320 truly contributes to flight safety. Coupled with good CRM skills and a keen understanding and command of the automation tools available, contemporary airline pilots flying

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new and modern commercial aircraft should continue to accumulate thousands of accident-free flying hours.

My wife and I keep our 2003 Cirrus SR22 hangared near our home in north Mississippi. (Thanks to my FedEx brothers and sisters, I easily can commute/jump-seat one leg to my SFO base from MEM). I frequently refer to the SR22 as a miniature Airbus. Even though the side stick on the Cirrus isn't fly-by-wire (yet), it does allow unobstructed access to the other automation controls, just like the Airbus. The Avidyne avionics suite, consisting of the PFD and MFD, compares closely to the A320's glass cockpit in terms of functionality. Newer SR22 models even have a flight director. I'm a huge fan of the Garmin radios; our plane is equipped with the 420/430 combination. (If I could get Airbus to add a couple Garmin radios to the A320, I'd be the happiest airline pilot on the planet.) Like the TCAS systems on com-

mmercial jet liners, our GA airplane is equipped with a SkyWatch traffic avoidance system. Traffic avoidance technology is a lifesaver and a vital part of the automation systems on both planes. The SR22's S-TEC 55X autopilot allows pilots to easily "manage" instrument arrivals and approaches to even the busiest airports. With TKS icing protection, Stormscope, XM Satellite Weather, CMax (much like my EFB) and terrain avoidance equipment, my SR22 has nearly all of the bells and whistles of the Airbus. The icing on the cake for me and my family is the brilliantly designed CAPS parachute system, which gives me an added layer of safety and peace of mind as I transport loved ones around the country.

Many airlines have an automation policy. Basically, this consists of guidelines on the use of automation and how it's employed by the flight crew. The most common policy, and one which I personally adopt, is that pilots should use the highest degree of automation available. At any time, however, if the automation isn't matching the intended input, the automation should be disengaged. I also follow this policy when I fly the SR22, and I feel strongly that GA operators with new-generation glass cockpits should also adopt this policy.

Thanks to task management, glass cockpits and the other aforementioned automation features, managing the cockpit should be easier than ever. Pilots, however, should be careful not to be lulled into a false sense of security. Always monitor the automation for uncommanded changes or failures. Also, always be prepared for worst-case scenarios (i.e., know how to task-manage if there's an automation failure). I prepare for this with my SR22 by flying approaches with partial panel and a simulated failure of the autopilot—all under the hood with a safety pilot.

While I don't expect Airbus to install an extra-large parachute system, I do expect it (and my airline) to always improve in technology. There are some tremendous improvements coming in advanced cockpit displays for both the airlines and general aviation. The future looks exciting; I can't wait to be part of it. P&P

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