

## M-28 Skytruck: A Marvellous STOL Aircraft

**W**ITH A robust airframe, responsive low-speed handling, and extreme Short Takeoff and Landing (STOL) performance, the Sikorsky Mielec M28 has proven its value in forward-deployed airlift operations. The US Air Force used the military-qualified C-145A version to fly Special Operations Forces to and from small, semi-prepared landing zones in Afghanistan. "It's a simple, tough airplane that doesn't need much support to keep flying," explains M28 Chief Designer Mariusz Kubryn. "When you've got to move people or cargo into short, unpaved strips in regions with austere facilities, the M28 is a highly productive solution." Sikorsky Mielec has also adapted the same highly productive twin turboprop platform to maritime patrol, antisubmarine warfare, and Search-And-Rescue (SAR) roles.

Sikorsky Aircraft acquired Poland's largest aircraft manufacturer, PZL Mielec, in 2007, and with it the M28 aircraft family including versions with and without an integrated "glass" cockpit. The Mielec factory has delivered more than 100 M28 aircraft so far. Sikorsky modernized M28 production and completions with computer design tools and today supports the hard-working fleet with a global logistics network. Civil-certified M28s routinely carry passengers and cargo for commercial and government operators from Colombia to Nepal.

The US Air Force Special Operations Command uses the glass-cockpit C-145A to provide Aviation Foreign Internal Defense training for allied nations and to give light air mobility resources to US Special Operations theatre commands. The rugged STOL transports have been deployed to Afghanistan and Eastern Africa. The Polish Navy and Border Guard meanwhile fly the M28B Bryza 1R R and 1RMBis versions with integrated antisubmarine warfare/maritime patrol systems. "The platform has the power and payload to fly very different mission profiles in India," notes Kubryn.

### SHORT FIELDS, LONG ENDURANCE

With its high-lift wing, ample power, thrust-reversing propellers, and fixed tricycle landing gear including low-pressure tires and anti-skid brakes, the M28 takes-off and lands on rough strips less than 1,000 (345 m) ft long. The mature, 1,100 shp (820 kW) Pratt & Whitney Canada PT6-65B turboprops are protected by inlet particle separators and provide responsive power with 6,000 hours operation between



overhauls. Healthy power margins make One Engine Inoperative emergencies safer even in extremely hot or icing conditions with an OEI rate of climb of 450 fpm (138 m/min) on a Standard day. The 16,500 lb (7,500 kg) M28 hauls 5,000 lb (2,300 kg) over 225 nm (450 km). It can cruise at speeds to 192 kt (356 km/hr) and stalls at just 53 kt with engines idling and flaps extended. Service altitude is up to 25,000 ft with crew oxygen. The M28 has been certificated by EASA and the US FAA for flight into known icing conditions.

Sikorsky Mielec now builds the M28 for passenger, VIP, cargo, paratroop, medical, SAR, and maritime patrol missions. "Good endurance and great low-speed handling characteristics are especially powerful advantages in surveillance missions," says Kubryn. Polish aircraft operating over the Baltic and North Seas fly missions up to eight hours duration at patrol altitudes around 5,000 ft (1,500 m). They carry a 360-degree Inverse Synthetic Aperture radar, high-definition infrared/electro-optical sensors, the Automatic Identification System, an infrared/ultraviolet pollution detector, and secure data link. Polish Border Guard aircraft have two cabin operator stations while Navy aircraft with ASW sonobuoy launcher and Magnetic Anomaly Detector have up to four. "The aircraft have been extremely effective in environmental and fisheries protection, SAR, and other maritime patrol missions," adds Kubryn. "They can overlay ship identities on radar displays and downlink a complete tactical picture to law enforcement."

As a flexible, quick-change air lifter, the basic M28 accommodates two crew and up to 19 passengers or 10 combat-equipped paratroops. The 485 cu ft (148m<sup>3</sup>) cabin has a full-width raftdoor to paradrop cargo, and it can be outfitted with a movable roller floor, optional cargo hoist, and heavy cargo restraints to speed loading and unloading. "One loadmaster can load and unload cargo at Forward Operating Locations," says Kubryn. "The cabin also lends itself to mixed missions with passenger seats and cargo rollers." An alternative Casualty Evacuation (CASEVAC) kit secures up to six litters and leaves room to seat seven medical staff or walking patients. An internal 553 US gal (2,090 L) internal tank can ferry fuel to remote locations or feed a spray rig for counter-narcotics operations. An optional under-fuselage container provides another 46 cu ft (14 m<sup>3</sup>) for baggage or mission equipment.

The M28B/PT cockpit is built around a Honeywell Bendix/King Electronic Flight Information System (EFIS) with integrated weather radar, Enhanced Ground Proximity Warning System and Traffic Collision Advisory System. The standard aircraft has a modern VFR/IFR avionics suite including VOR, GPS, and ADF navigation aids. Sikorsky Mielec is integrating more capable electro-optical payloads and other new mission systems. "I think we're just beginning to see the potential of the M28 in Intelligence, Surveillance, and Reconnaissance roles," says Kubryn. "It's a smart, rugged workhorse." ■