

GMCS

Ground Maneuvering Camera System

The Ground Maneuvering Camera System (GMCS) was developed for large air transport aircraft, and is standard equipment aboard all Boeing 777-300 aircraft. It provides pilots with real-time views of the landing gear, ground conditions and proximity to the pavement edge during taxi maneuvers using cameras mounted behind the nose gear and in both leading edges of the horizontal stabilizer. The images appear on a three-way, split screen, flight deck video display. The basic system is comprised of three cameras and a Taxi Camera Interface Unit (TCIU).

GMCS cameras operate in light levels ranging from bright sun and snow to full moon, night-flight conditions. The ECIU can provide fixed views, or can be preprogrammed for dynamic video switching.

The environmentally sealed cameras have been designed and certified for the rugged external aircraft environment.

- Standard equipment aboard Boeing 777-300 aircraft
- High reliability, electronic shutter and iris control
- Automatic/Manual electronic viewing angle adjustment - No moving parts
- Excellent anti-blooming control - no bright "hot spots"

- Situational awareness for taxi maneuvers
- Expanded dynamic range - operates in low-light to full sunlight conditions
- Fully developed, installed and certified

ADDITIONAL APPLICATIONS

Because of its open architecture and modular design, GMCS can be modified to accommodate a variety of uses. Derivative configurations enable flight crews to monitor a wide range of aircraft systems on flight-deck video displays. Internal and external cameras can provide many views of aircraft systems, including:

- Landing Gear
- Engines
- Control Surfaces
- Cabin and Cargo Areas
- Electronic Equipment Bays





Specifications — Ground Maneuvering Camera System

Video display	Spirit screen or single camera image
Video image	Color
Video output	NTSC
Cameras required	Variable from 1 to 5 (3 standard with GMCS)
Resolution	768 horizontal pixels x 494 vertical pixels
Minimum light sensitivity	0.5 lux, scene of illumination, full video output
Electronic shutter dynamic range	Greater than 100,000 to 1
Power	28 Vdc standard, 3.75 amps maximum current for a 3-camera system with interface unit (115V, 400 Hz optional)

LRU Weights

Taxi Camera Interface Unit (TCIU)	4.75 lb (2.14 kg)
Nose Gear Taxi Camera	2.17 lb(0.98 kg)
Main Gear Taxi Camera	1.58 lb (0.71 kg) each, two used
Total LRU weight	10.08 lb (4.54 kg)
Interface unit size	2MCU
Camera housing	Aluminum, environmentally sealed, aerodynamic low drag
MTBF	Camera: 35,567 hours /TCIU: 49,163 hours
Environmental	Meets RTCA DO-160



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