When the need for security cannot be compromised, a PROVEN solution must be selected.

With increasing and evolving global threats, precise use of POWER provides security.

In a confusing and rapidly-changing environment, PRECISION and SKILL are force multipliers for peace.

These are the moments and missions where failure is not an option.

Now is when special operations forces (SOF) are called upon to PROTECT your today and your tomorrows.

There is one solution that fully supports all special missions needs, offering versatility, endurance, command and control, surveillance and protection.


It is the world’s ultimate special missions asset.

INTRODUCING THE C-130J-SOF.
THE NEWEST MEMBER OF THE SUPER HERCULES FAMILY.
The C-130J-SOF provides specialized intelligence, surveillance, and reconnaissance (ISR) support, along with infiltration, exfiltration, and re-supply of special operations forces (SOF) and equipment in hostile or denied territory. With added special mission equipment options, the C-130J-SOF may be configured to execute armed overwatch, precision strike, helicopter and vertical lift aerial refueling, psychological operations, high-speed/low-signature airdrop resupply, personnel recovery, forward area refueling point (FARP) operations, and humanitarian/rescue operations.
C-130J-SOF MISSIONS

ARMED ISR, CLOSE AIR SUPPORT, TROOPS IN CONTACT

Armored reconnaissance is fought with the primary purpose of locating and attacking targets of opportunity (i.e., enemy material, personnel and facilities) in assigned or general areas. Close air support (CAS) provides direct action against hostile targets that are in close proximity to friendly forces or troops in contact (CTIC) with limited collateral damage. Air interdiction destroys, neutralizes or delays the enemy’s potential before it can be brought to bear effectively against friendly forces.

HELCIOTER, VERTICAL LIFT, FIGHTER AERIAL REFUELING

Aerial refueling helicopters, vertical lift and fighter aircraft is conducted utilizing a podded hose and drogue system. Aerial refueling allows the receiving aircraft to extend its range and time-on-station. Due to its enhanced propulsion systems, the C-130J-SOF offers aerial refueling at speeds 15 kts faster than previous versions—a benefit to fighter refueling.

INFLTRATION/EXFILTRATION

Through the use of an advanced flight management system (FMS) with integrated inertial navigational system (INS) and Global Positioning System (GPS), the C-130J-SOF can conduct precision low-level navigation infiltration/exfiltration of special operations forces via high/low-altitude airdrop or air-land operations utilizing austere airfields.

FORWARD AREA REFUELING POINT (FARP)

A FARP is a temporary facility that is organized, equipped and deployed by an aviation commander. It is normally located in the main battle area closer to the area where operations are being conducted to provide fuel and ammunition necessary for the employment of aviation maneuver units in combat. FARP operations with the C-130J-SOF enable combat aircraft and ground vehicles to rapidly refuel and re-arm simultaneously. FARP supports deep attack or special operations forces when distance covered exceeds the normal aircraft range.

IN-FLIGHT REFUELING

In-flight refueling employs either the aerial refueling probe installation system (ARPIS) or universal aerial refueling receptacle slipway installation (UARRSI) system to allow the receiving aircraft to extend its range or increase loiter time.

HIGH ALTITUDE MILITARY FREE FALL (MFF)

High-altitude MFF is a C-130J combat-tested method of delivering military personnel, equipment and supplies from a transport aircraft via free-fall parachute insertion. The C-130J-SOF is capable of both HALO (high altitude – low opening) and HAHO (high altitude – high opening) operations.

C-130J-SOF FEATURES

The standard C-130J-SOF configuration features an EO/IR Imaging System for ISR upgraded 60/90 KVA Generators and 400 AMP regulated transformer rectifier units (RTRU) that doubles the electrical capacity of a baseline C-130J to support future mission requirements by providing growth provisions for tanker/receiver refueling and armed ISR capabilities. Changes to the baseline C-130J include the addition of an armor protection system and lower fuselage protection for survivability; added crew position stations for a combat system operator (CSO) and scanner, automatic dependent surveillance-broadcast (ADS-B) out; microvanes for increased fuel efficiency; and external fuel tanks for increased range/loiter time.

ARMED ISR

The armed ISR C-130J-SOF builds upon standard configuration provisions to increase effectiveness and lethality. It features a two-man CSO station and/or mission system roll-on/roll-off (RORO) pallet, a 30mm gun system, Hellfire air-to-surface missile system, ARPS for extended range and loiter operations, satellite communication (SATCOM) system and VHF omnidirectional range (VOR) data link for enhanced command and control.

Additional options include defensive systems such as directed infrared countermeasures (DIRCM), the UARRSI boom capable in-flight refueling system, Block 8.1 upgrades, fighter, helicopter and vertical lift aerial refueling probe and drogue system, the enhanced cargo handling system (ECHS) and increased usage for extended range/loiter.

GENERAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Design take-off weight (2.5g)</td>
<td>164,000 lb/74,389 kg</td>
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<tr>
<td>Max take-off weight (2.25g)</td>
<td>175,000 lb/79,379 kg</td>
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<tr>
<td>Operating weight empty</td>
<td>39,733 lb/18,023 kg</td>
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<tr>
<td>Landing distance (135,000 lbs)</td>
<td>3,100 ft/945 m</td>
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<tr>
<td>Range (30,000 lb payload)</td>
<td>2,060 nm/3,815 km</td>
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<tr>
<td>Maximum cruise speed</td>
<td>60/90 Generator (One per Engine)</td>
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**Microvanes**

Microvanes are small 3D-printed, adhesively bonded devices, approximately 10 inches long and one inch tall, that reduce the drag penalty associated with upsweped aft fuselages present on military transport aircraft like the C-130. Flight testing has proven these devices reduce drag significantly and can provide a four percent fuel savings at cruise conditions with no impact on air drop or cargo handling.

**Scanner Seats**

Two 9g crashworthy seats located at the left and right paratroop doors with a design weight limit of 275 lbs. person with gear. The seats are aft-facing for increased survivability and improved field-of-view (FOV) for the aft observers during refueling and ISR missions. They allow for comfortable viewing positions for all personnel from 5 percent female to 95 percent male and includes a zippered back for gear/parachute and an adjustable footrest. The seats can be stowed or deployed in less than 15 seconds and not interfere with the C-130 cargo envelope when stowed.

**Lower Fuselage Protection System (LFPS)**

The lower fuselage protection system protects the aircraft from damage on the lower fuselage for C-130J operators that are frequently operating in rugged conditions. This system includes a combination of guards, covers, and removable specialized protective material to prevent damage to the aircraft paint, fuselage skin, antennas and other critical systems. The system improves the resistance to corrosion and reduces downtime for repairs.

**EO/IR Imaging System**

The EO/IR Imaging System is a chin-mounted turret at the nose of the aircraft that provides day and night enhanced imagery to improve situational awareness and targeting capability. The turret sensors are capable of 360 degree field of regard in azimuth and +30 to –120 degrees field of regard in the horizontal plane. Displays are mounted in the CSO station and the pilot front panel.

**Advanced C-130J-SOF Cockpit**

Large display for mission situation awareness with color, digital moving map and multi-mode color radar:
- Ground Collision Avoidance System (GCAS)
- Traffic Collision and Avoidance System (TCAS)
- Terrain Awareness and Warning System (TAWS)
- Computer monitored aircraft system
- Flight Management System (FMS)
- Inertial Navigation System (INS)
- Dual Global Positioning System (GPS) systems
- Low-noise interphone system

**30mm Gun**

The GAU-23 Bushmaster® Automatic Cannon is a next-generation Chain Gun® weapon available and in use today. It continues the Bushmaster tradition of excellence with its design simplicity, external power, positive round control, ease of maintenance, and constant velocity ammunition feed. It incorporates all of the battle-proven features of the 25mm M242 and Mk44 Bushmaster cannons, with significant system commonality for low-risk, proven performance.

**Missile System Pallet**

Orbital ATK has developed a roll-on/roll-off (RORO) pallet and weapons mount that integrates with the GAU-23 cannon. The resulting weapons package allows the C-130J-SOF the ability to install the system in less than four hours.

**Aerial Refueling Probe Installation System (ARPIS)**

The ARPS modification provides the capability for receiving fuel from hose and drogue tanker aircraft for added mission performance capability. This system can be used to extend the effective range and the effective time-on-station and/or fuel off-load of the C-130J-SOF aircraft.

**Refueling Probe and Drogue**

The C-130J-SOF is capable of refueling tactical aircraft, helicopters and tilt-rotors. The refueling pods have been designed to provide Single Point Refueling receptacles to expedite ground refueling operations.

**Armour Protection System (APS)**

The APS is the first line of protection against conventional ballistic threats. The system protects the aircrew in the cockpit, the under-deck area of the cockpit, the Augmented Crew Station (ACS) area on the flight deck, the loadmaster station, and the liquid oxygen (LOX) converter. APS is designed to protect against a 7.62mm x 54R LPS projectile and small arms fire.

**SOF ARMED ISR CAPABILITIES**

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ADDITIONAL SOF OPTIONS

DIRCM

The directional infrared countermeasure (DIRCM) defensive system suite uses a combination of baseline components (ALR-56M, ALE-47) and the Terma Defensive Aids Controller (DAC) and Cassidian AAR-60 Missile Warning System. This configuration supports the Eletronica DIRCM configuration, which uses the ELT-572 configuration to provide the aircraft protection against infrared guided missiles. Export requires approval from the U.S. government.

UARRSI

The universal aerial refueling receptacle slipway installation (UARRSI) consists of a receptacle in the top of the aircraft which allows the aircraft to receive fuel from a boom-type tanker aircraft. The UARRSI system can be used to extend the effective range of the Special Mission airlift aircraft. Additionally, it can be used to extend the effective time-on-station and/or fuel off-load of the C-130J-SOF.

BLOCK 8.1

Block 8.1 provides the following Operational and Mission Performance Enhancements:
- Enhanced Communication/Navigation/Surveillance – Air Traffic Management (CNS/ATM)
- New ground power modes to power only selected systems and reduce wear
- Enhanced intercommunication system (ICS) and improved public address (PA) system
- Covert infrared (IR) Loading Lights aft of the ramp

COMBAT SYSTEM OPERATOR STATION

The standard configuration comes with a single combat system operator (CSO) station on the flight deck. An additional CSO station can be added as missions dictate. C-130J-SOF CSO Station allows a third or fourth crew member to perform important mission functions, freeing the pilots to fly the airplane. These functions include monitoring and controlling the operation of the EO/IR and radar systems, Defensive Systems, and Fuel Operations. The functions at the CSO Station includes ICS, color multipurpose display units (with moving map and NAV radar pages), radar cursor control, EO/IR system operations with a widescreen display for enhanced viewing of the EO/IR image and the common operator picture.

PERFORMANCE

SINGLE REPLACEABLE BLADE (SRB)

The single replaceable blade propeller system (SRB) is a new propeller option designated by Dowty Propellers as the R432 propeller system. It will allow for the exchange of a single blade on wing in the event of propeller damage or need for repair. This capability is being developed by Dowty/Lockheed Martin for commercial use and will be initially certified by Dowty to EASA/FAA standards under its type certificate as the propeller OEM. Designed to have identical performance and interface requirements, users will be able to mix propellers on wing if required to support a fleet retrofit program. Users of this system will see a reduction in overall provisioning costs driven by the capability to provision for blades and hubs separately, additionally there will be recurring cost savings throughout the life of the system driven by reduced shipping costs.

ENHANCED CARGO HANDLING SYSTEM (ECHS)

The enhanced cargo handling system (ECHS) provides increased levels of safety, greater air drop precision, and faster cargo bay reconfiguration times. Cargo pallets and ground handling equipment remain common.

Primary Components
- Electrically-actuated locks and vertical restraints
- Flip-to-stow roller conveyors
- Under floor variable speed winch
- Loadmaster console with multi-function control display unit (MCDU)
- Cargo ramp and door opening at 250 knots
- Cargo door dual uplocks and actuators
- Integral container delivery system center rails
- Recessed tow plate

INCREASED INTERNAL FUEL CAPABILITY

The ability to carry additional internal fuel in the wings can be accomplished by reducing the excess air gap (ullage). This provides improved mission capability by adding 4,924 pounds of fuel while providing maintainability and life cycle cost reductions. Depending upon the mission, this additional fuel can provide one-to-one-and-a-half hours of additional time on station or 300-400 nautical miles of additional range. For aircraft that offload fuel to other platforms, additional fuel capability translates directly to increased offload capability.

TERRAIN FOLLOWING (TF)

Lockheed Martin Advanced Development Programs (ADP) has demonstrated passive terrain following (TF) for low-level flight enabled by TERPROM®. The solution provides low probability of intercept/detection (LPI/LPD) passive TF vertical guidance, status and alerts to the head up and head down primary flight displays. This TF solution provides tactical functionality to enhance situational awareness, safety and platform capability by utilizing aircraft navigation data with the stored digital terrain elevation, obstruction and wire data.
WE’RE ENGINEERING A BETTER TOMORROW

C-130J-SOF
INTERNATIONAL SPECIAL OPERATIONS FORCES CONFIGURATIONS