

Wing aspect ratio	2.4
Length overall	18.92 m (62 ft 1 in)
Height overall	5.08 m (16 ft 8 in)
Tail span: horizontal surfaces	8.84 m (29 ft 0 in)
vertical surfaces	5.97 m (19 ft 7 in)
Wheelbase	6.04 m (19 ft 9 in)
Weapon bay ground clearance	0.94 m (3 ft 1 in)

AREAS:

Wings, gross	78.0 m ² (840.0 sq ft)
Leading-edge flaps (total)	4.76 m ² (51.20 sq ft)
Flaperons (total)	5.10 m ² (55.00 sq ft)
Ailerons (total)	1.98 m ² (21.40 sq ft)
Vertical tails (total)	16.54 m ² (178.00 sq ft)
Rudders/speedbrakes (total)	5.09 m ² (54.80 sq ft)
Stabilators (total)	12.63 m ² (136.00 sq ft)

WEIGHTS AND LOADINGS (estimated):

Weight empty (target)	14,365 kg (31,670 lb)
Max T-O weight	almost 27,216 kg (60,000 lb)
Max wing loading	348.7 kg/m ² (71.43 lb/sq ft)
Max power loading	87 kg/kN (0.86 lb/lb st)

PERFORMANCE (YF-22, demonstrated):

Max level speed: supercruise	M1.58
with afterburning	M1.7 at 9,150 m (30,000 ft)
Ceiling	15,240 m (50,000 ft)
g limit	+7.9

PERFORMANCE (F/A-22A, design target, estimated):

Max level speed at S/L	800 kt (1,482 km/h; 921 mph)
g limit	+9

UPDATED

LOCKHEED MARTIN 382U/V HERCULES

US Air Force designations: C-, CC-, EC-, WC-130J

US Coast Guard designation: HC-130J

US Marine Corps designation: KC-130J

RAF designations: Hercules C. Mk 4 (C-130J-30);

Hercules C. Mk 5 (C-130J)

TYPE: Medium transport/multirole.

PROGRAMME: US Air Force specification issued 1951, leading to first-generation Hercules (Allison T56 turboprops); first production contract for C-130A to Lockheed September 1952; first flight 23 August 1954; two YC-130 prototypes, 231 C-130As, 230 C-130Bs, 491 C-130Es, 1,089 C-130Hs and 113 L-100s manufactured before introduction of C-130J and commercial L-100J equivalent. Official total of 2,156 (including prototypes) delivered by January 1998, when final C-130H handed over.

Privately funded development and flight test programme for next-generation version began in 1991 as Hercules II, but now known as C-130J Hercules, or L-100J in equivalent civilian form.

Initial British delivery accomplished on 24 August 1998; aircraft involved was ZH865, which arrived at Boscombe Down on 26 August for start of clearance trials by UK Defence Evaluation Research Agency (DERA). First aircraft ferried to RAF transport force at Lyneham was ZH878 on 21 November 1999. Final RAF aircraft flown from Marietta to Cambridge in late May 2000; final delivery to RAF on 21 June 2001.

First 'operational' mission accomplished by Lockheed Martin test crew in late November 1998, when C-130J completed three sorties from Marietta and airlifted 37,650 kg (83,000 lb) of hurricane relief supplies to Tegucigalpa, Honduras. Subsequently, 1999 witnessed start of deliveries to US Air Force Reserve Command and Air National Guard, as well as to operating units in Australia and the UK. Entire fleet had accumulated 30,000 flight hours by February 2002; by 24 July 2002, this had risen to 50,000 hours. Roll-out of the 100th C-130J – an aircraft for delivery to the US Coast Guard – took place on 17 February 2003.

Block 5.3 software configuration available from third quarter 2001 is standard equipment for latest deliveries and was retrofitted to existing aircraft by end of 2002; Block 5.3 offers ability to fly integrated precision radar approaches, gives enhanced navigation capabilities and



Royal Air Force Lockheed Martin C-130J Hercules C. Mk 5 (Paul Jackson)

NEW/0552708

permits fully automatic formation flying using co-ordinated aircraft positioning system (CAPS). Next version will be Block 5.4, which will be introduced in about FY05-06; new features include an AN/APX-119 IFF transponder and 8.33 kHz VHF radios. A Block 6.0 configuration is expected to follow and will be a phased upgrade programme allied to implementation of the civil global air traffic management system.

CURRENT VERSIONS:

C-130J: Baseline version. Dimensionally similar to preceding C-130H, but incorporating new equipment and features as subsequently described. Subject of initial order for two from USAF in FY94, with subsequent contract for two in FY96; these initially earmarked for trials and eventually to Air Force Reserve Command (AFRC), while further eight funded in FY97 and FY98 assigned to Air National Guard's 135th Airlift Squadron at Warfield ANGB, Martin State Airport, Baltimore, Maryland, which fully equipped by mid-July 2000. Initial aircraft delivered to AFRC 403rd Wing at Keesler AFB, Mississippi, on 31 March 1999 for training. Description applies mainly to baseline C-130J except where indicated.

C-130J-30: Stretched version of current production C-130; fuselage lengthened by 4.57 m (15 ft 0 in), offering increases in capability of between 31 and 50 per cent, dependent upon mission and configuration (see accompanying diagram). Orders received from Australia, Denmark, Italy, UK and USA.

CC-130J: Designation allocated to C-130J-30 aircraft in USAF service. First three funded in FY99, with two more in FY00 and five in FY02. Initial deliveries to ANG units in Rhode Island and California; FY02 aircraft to be assigned to 146th AW (two aircraft), 143rd AW (one), 403rd Wing (one) and a new USAF C-130J training unit that will be established at Little Rock AFB, Arkansas (one); all five to be delivered in 2004. In March 2003, USAF concluded contract for multiyear procurement of 40 CC-130Js, at rate of eight per year from FY04 up to and including FY08.

EC-130J: 'Commando Solo' psychological warfare version; first two funded in FY98 budget, with first (99-1933) handed over on 17 October 1999; after flight testing, it moved to Palmdale, California, in July 2000 for fitting out before being delivered to the 193rd Special Operations Squadron, Air National Guard, at Harrisburg IAP, Pennsylvania. IOC was expected by the end of 2003, but is likely to slip into 2004 because of problems encountered in integrating a new switchable 60/90 kVA generator with the broadcast system; this has caused delay in delivery of fully equipped aircraft to the 193rd SOS. Additional procurement comprises third example in FY99 budget, fourth in FY00 and fifth in FY01.

HC-130J: Replacement for earlier US Coast Guard HC-130s; funding for initial six contained in FY01 budget. First example handed over shortly before end of 2002.

KC-130J: Tanker/transport version for US Marine Corps, which has requirement for 79 to replace KC-130F, KC-130R and KC-130T variants. Fitted with two Flight Refuelling Mk32B-901E hose-and-drogue wing-mounted refuelling pods; three aircraft funded in FY97 budget, two in FY98, two in FY99, one in FY00, three in FY01 and two in FY02. Further 20 aircraft for USMC covered by multiyear procurement contract concluded in March 2003; this comprises initial batch of four in FY03, with additional aircraft at rate of four per year during FY05 to FY08. First contract for five USMC conversions (to be accomplished by end of 2000) announced 21 July 1998. Final assembly of first KC-130J (165735) began 22 March 1999, with first flight on 9 June 2000; total of three aircraft assigned to test programme at Patuxent River in latter half of 2000; first drogue engagement accomplished by Navy F/A-18 Hornet on 30 August 2000; initial trials revealed that aft fairing of pod was unsatisfactory, with cracks appearing in hose/drogue coupling; redesign of fairing in 2000-01 cleared way for further testing in second quarter of 2001, which confirmed much improved performance in areas of flying quality and durability. On completion of trials, all three test aircraft assigned to USMC tanker/transport squadron VMGR-252 at MCAS Cherry Point, North Carolina, which took delivery at beginning of September 2001; total of seven handed over by end 2001. Pod refuelling rate (each) 1,136 litres (300 US gallons; 250 Imp gallons) per minute; total offload capability is 32,005 litres (8,455 US gallons; 7,040 Imp gallons) using only wing and external tanks. Provisions for installation of refuelling probe incorporated in basic aircraft. Additional fuel in underwing and cargo hold tanks; see Power Plant.

MC-X Combat Talon 3: Potential new variant for USAF Special Operations Command, which has requirement for up to 54 aircraft, with procurement likely to begin in 2006. This will almost certainly be based on the C-130J. The same organisation is also contemplating acquisition of a new AC-X gunship that could utilise the C-130J airframe.

WC-130J: Weather reconnaissance version to be equipped with aerial reconnaissance weather officer console, dropsonde system operator console and dropsonde launch tube; initial batch of four included in FY96 budget, with three more in FY97, two in FY98 and one in FY99; for 53rd WRS, Air Force Reserve Command at Keesler AFB, Mississippi. US\$46.9 million contract for modification of first six, with option for further four, signed 18 September 1998; deliveries began on 30 September 1999; formal acceptance 12 October 1999.

CUSTOMERS: See tables. Total of 178 ordered by March 2003. First customer was RAF, which ordered 25 in December 1994; of these, 15 are stretched C-130J-30, designated C. Mk 4, with final 10 as standard C-130Js, designated Hercules C. Mk 5. Delivery of first example to the trials unit at Boscombe Down was due in November 1996, but was delayed until 26 August 1998. First service recipient was J Conversion Flight of No. 57 (Reserve) Squadron, followed by No. 24 and then No. 30 Squadrons at RAF Lyneham. Deliveries to Lyneham began on 21 November 1999, when C. Mk 4 ZH878 arrived for duty as temporary ground procedures trainer; two days later, on 23 November, C. Mk 4 ZH875 was formally handed over in official ceremony at Lyneham. Completion of deliveries occurred on 21 June 2001; operational service with RAF began 14 November 2000, when No.24 Squadron flew scheduled mission to Puerto Rico. No.30 Squadron attained operational status in June 2002. In mid-2002, it appeared likely that some RAF C. Mk 5 aircraft would be fitted with in-flight refuelling systems identical to those of the USMC KC-130J.

Second order covered two C-130Js for evaluation by the USAF and was finalised on 13 October 1995, one week before the first was rolled out at Marietta. Further two funded in FY96, four in FY97 and four in FY98 for Air Force Reserve Command and Air National Guard units; first ANG squadron was 135th AS at Martin State Airport, Baltimore. Further orders began FY99 with contract for three CC-130J aircraft, with FY01 procurement including two more CC-130Js for USAF and initial batch of six C-130Js for long-range SAR duties with US Coast Guard;



Lockheed Martin CC-130J of Rhode Island Air National Guard

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Flight deck of the C-130J, showing HUDs and EFIS

0075954

US C-130J PROCUREMENT
(To March 2003)

FY	C-130J	CC-130J	EC-130J	HC-130J	KC-130J	WC-130J	Total
94	2						2
96	2					4	6
97	4				3	3	10
98	4				2	2	10
99		3	1		2	1	7
00			1		1		2
01		2	1	6	3		12
02		5			2		7
03-08		40			20		60
Total	12	50	5	6	33	10	116

Note: FY03-08 procurement covered by multiyear contract, with initial tranche of four KC-130Js funded in FY03. USAF plans to acquire eight CC-130Js per year during FY04 to FY08, with USMC obtaining four KC-130Js per year during FY05 to FY08. Additional aircraft are likely to be purchased for Air National Guard and Air Force Reserve Command

five more CC-130Js in FY02 budget. First CC-130J rolled out 25 January 2001; following testing, this delivered to 143rd AW, Rhode Island ANG, on 2 December 2001. Two more CC-130Js to 143rd AW by end 2001, with next two for 146th AW, California ANG, which received its first example on 2 June 2002.

Second order received in 1995 was from Australia, for 12 C-130J-30s to replace C-130Es of No. 37 Squadron at Richmond, at total cost of US\$660 million. Order placed on 21 December 1995 and included options for an additional 24 aircraft, plus eight options for New Zealand, which was guaranteed pricing based on Australia's larger order; options have not been converted to firm orders and appear unlikely to be. First Australian C-130J (A97-440/N130JQ, c/n 5440) flew on 15 February 1997; delivery began 7 September 1999, when A97-464 arrived at Richmond; last of initial batch handed over on 1 June 2000, with operational status achieved in December 2001.

Third overseas customer was Italy, which initially ordered 18 C-130Js, subsequently adding two more in January 2000 and another two in March 2000; last four were stretched C-130J-30 version. At same time as placing final order, Italy revised overall procurement plan and will now receive 12 C-130Js and 10 C-130J-30s. First aircraft rolled out at Marietta on 11 July 2000. Italian military certification also awarded in July 2000, with first C-130J delivery (actually second aircraft, MM 62176, c/n 5497) to 2° Gruppo, 46° Aerobrigata at Pisa departing USA on 16 August; formal acceptance 21 September 2000. All will be tanker-capable and configured to receive fuel, although only six likely to be operated as such at any one time. Two of the original aircraft are to be adapted as signal platforms by 2006, with antennae fitted to removable panels; reconfiguration from basic transport role to specialised signal mission would require maximum of 24 hours; equipment is to include 12 workstations, a communications suite and secure datalinks. C-130J-30 version assigned to 50° Gruppo, 46° Aerobrigata, from third quarter of 2002. Newest export customer is Denmark, which ordered three C-130J-30s, with option on fourth, in December 2000.

Other potential customers reported to be in discussion with Lockheed Martin include Bahrain, Canada, Egypt, Israel, Kuwait and Portugal. Norway has expressed interest in obtaining six as replacements for its current fleet of six C-130Hs, while Saudi Arabia reported to have requirement for up to 24 aircraft.

MILITARY/GOVERNMENT C-130J SALES
(To March 2003, excluding USA)

Country	J	J-30	Total
Australia		12	12
Denmark		3	3
Italy	12	10	22
UK	10	15	25
Total	22	40	62

Note: Options not included

COSTS: US\$55 million programme unit cost (Australia) (1995). Italian order of November 1997 valued at US\$1.2 billion. Baseline price of C-130J-30 quoted as US\$67 million in early 2002. Multiyear procurement of 40 CC-130Js for USAF and 20 KC-130Js for US Marine Corps valued at US\$4.05 billion (unit price US\$67.5 million). FY03 contract for one CC-130J for Air Force Reserve Command worth US\$70.5 million.

DESIGN FEATURES: Archetypal tactical transport: upswept rear fuselage for ramp access; high wing for propeller ground clearance despite low floor height; latter provided by panner-mounted landing gear, which obviates long mainwheel legs stowed in wings. Can deliver loads and parachutists over open ramp and parachutists through side doors; cargo hold pressurised.

Significant changes introduced with C-130J, which optimised for economical operation, justifying customers' substitution for earlier C-130s on 30 year lifetime savings alone. Entirely revised flight deck reduces LRUs by half and wire assemblies by 53 per cent, with wire terminations

cut by 81 per cent; has four MFDs, plus HUD for both pilots; lighting compatible with NVGs. Most systems have digital interfaces with the main mission computer to include unmodified mechanical systems like the hydraulics, which are largely unaltered from those of C-130H; provision for integrated self-defence suite (RWR, MAW, chaff/flare dispensers and IR jammers). Propulsion system provides 29 per cent more take-off thrust and is 15 per cent more efficient; fuel efficiencies obviate requirement for external tanks on most types of mission; propeller has 50 per cent fewer parts and weighs 15 per cent less. Manpower requirements of typical 16-aircraft squadron cut by 38 per cent compared with earlier versions of C-130, as result of reduced flight crew and 50 per cent better maintainability. Comprehensive computerised maintenance system employs a hand-held data module as interface between aircraft's BITE and operating base's central technical records.

Wing section NACA 64A318 at root and NACA 64A412 at tip; dihedral 2° 30'; incidence 3° at root, 0° at tip.

FLYING CONTROLS: All flying controls integrated with digital autopilot/flight director and comprise control surfaces boosted by dual hydraulic units; trim tabs on ailerons, both elevators and rudder; elevator tabs have AC main supply and DC standby; Lockheed-Fowler composites trailing-edge flaps.

STRUCTURE: All-metal two-spar wing with integrally stiffened taper-machined skin panels up to 14.63 m (48 ft 0 in) long. Incorporates carbon fibre composites materials for flaps and 32 graphite-epoxy trailing-edge panels.

LANDING GEAR: Hydraulically retractable tricycle type. Each main unit has two wheels in tandem, retracting into fairing built on to fuselage side. Nose unit has twin wheels and is steerable ±60°. Mainwheels 20.00-20 (26 ply) tubeless; nose 12.50-16 (12 ply) tubed or tubeless. Oleo shock-absorbers. Minimum ground turning radius: C-130J, 11.28 m (37 ft) about nosewheel and 25.91 m (85 ft) about wingtip; C-130J-30/CC-130J 14.33 m (47 ft) about nosewheel and 27.43 m (90 ft) about wingtip.

POWER PLANT: Four Rolls-Royce AE 2100D3 turboprops, flat rated to 3,424 kW (4,591 shp) (manufacturer's rating 3,458 kW; 4,637 shp at ISA + 25°C), fitted with Dowty Aerospace R391 six-blade composites propellers and Lucas Aerospace FADEC. Automatic thrust control system (ATCs) and autofeather systems, plus engine monitoring system (EMS) which is incorporated into aircraft's integrated diagnostic system (IDS).

Total internal fuel capacity of 25,552 litres (6,750 US gallons; 5,621 Imp gallons) without foam and 24,363 litres (6,436 US gallons; 5,359 Imp gallons) with foam. Provisions only for two optional underwing pylon tanks, each with capacity of 5,220 litres (1,379 US gallons; 1,148 Imp gallons) without foam and 4,883 litres (1,290 US gallons; 1,074 Imp gallons) with foam. Total fuel capacity 35,992 litres (9,508 US gallons; 7,917 Imp gallons) without foam and 34,129 litres (9,016 US gallons; 7,507 Imp gallons) with foam. Tanker versions can carry cargo hold tank with additional 13,578 litres (3,587 US gallons; 2,987 Imp gallons). Single pressure refuelling point and overwing gravity fuelling. In-flight refuelling probe fitted as standard on port side of RAF aircraft; optional for all others, with Italian aircraft currently unique in being configured as receiver/tankers.

ACCOMMODATION: Crew of two on flight deck, comprising pilot and co-pilot, with provisions for optional third workstation. Ergonomic problems suffered by short pilots necessitated a number of alterations to cockpit, including redesign of seat and seat track, HUD and main control yoke, with throttle quadrant also modified. Two crew bunks, with lower incorporating three additional seats and harnesses for relief crew/flight deck passengers. Galley. Separate loadmaster's station in cargo hold, including folding desk, is standard equipment on RAF aircraft; optional for all others. Flight deck and main cabin pressurised and air conditioned.

Standard complements for C-130J are as follows: 92 troops, 64 paratroopers, 74 litter patients plus two attendants, 54 passengers on palletised airline seating. Corresponding data for C-130J-30/CC-130J are 128 troops, 92 paratroopers, 97 litter patients plus four attendants and 79 passengers on palletised airline seating. Airdrop loads comparable to C-130H/H-30 and include light armoured vehicles. Light and medium towed artillery pieces, wheeled and tracked vehicles and 463L palletised loads (five in C-130J and seven in C-130J-30/CC-130J, plus one on ramp in each model) are transportable. Hydraulically operated (with dual actuators) main loading door and ramp at rear of hold; can be opened in flight at up to 250 kt (463 km/h; 288 mph). Crew door on port forward fuselage side. Paratroop door on each side aft of landing gear fairing. Two emergency exit doors standard. Optional cargo handling system ordered by the USAF includes flush-mounted winch; in-ramp towplate for airdrop operations; low-profile rails and electric locks; flip-over rollers with covers; container delivery system centre vertical restraint rails. Capable of automatic preprogrammed cargo drops.

SYSTEMS: Lucas generator. Environmental control system in starboard undercarriage fairing is similar to that of the C-130H, incorporating dual air cycle machines, but with



Lockheed Martin C-130J-30 in Royal Australian Air Force service (Paul Jackson)

NEW/0552872

30 per cent greater cooling capacity and a digital electronic control system. Honeywell GTCP85-185L(A) auxiliary power unit in port undercarriage fairing furnishes ground electrical power and bleed air for environmental control system. MIL-STD-1553B digital databus architecture. Integrated diagnostic system (IDS) incorporating fault detection/isolation subsystem with BIT (built-in test) facility. Goodrich pneumatic fin anti-icing system.

AVIONICS: Comms: Honeywell com/nav/ident management system, with Intel 80960 processor. AN/ARC-222 VHF, HF/UHF radio, intercom and IFF, with provisions for satcom system. All communication radios have secure features. AN/APX-119 IFF to be included on Block 5.4 and subsequent aircraft.

Radar: Northrop Grumman AN/APN-241 low-power colour radar incorporates Doppler beam-sharpening ground mapping mode, air-to-air skin paint mode and protective windshear mode as well as conventional colour weather radar.

Flight: HG-9550 radar altimeter, AN/ARN-153(V) Tacan, digital autopilot/flight director (DA/FD), dual Honeywell laser INS with embedded GPS receivers, Doppler velocity sensor, VOR, ILS, marker beacon receiver, UHF/VHF DF, ADF, E-TCAS, ground collision avoidance system (GCAS), global digital map display units and provision for microwave landing system.

Instrumentation: 'Dark cockpit' concept. Flight Dynamics HUD as certified primary flight instrument at pilot and co-pilot positions, four 152 x 203 mm (6 x 8 in) Avionics Display Corporation active matrix liquid-crystal display (AMLCD) colour multipurpose display systems (CMDSS) which are NVG-compatible for flight instrumentation, navigation and engine information and five Avionics Display Corporation 58 x 76 mm (2.3 x 3 in) monochrome AMLCDs for digital selector panels.

Mission: Sierra Technologies AN/APN-243(V) station-keeping equipment. Provision for secure voice communication system.

Self-defence: Provisions for Lockheed Martin AN/AAR-47 missile warning system, Sanders AN/ALQ-157 IR countermeasures system, BAE Systems AN/ALE-47 chaff/flare dispensing systems and AN/ALR-56M radar warning receiver or AN/ALR-69 enhanced radar warning system. RAF aircraft originally ordered with US-supplied systems, but RWR and countermeasures dispensing systems now subject to bidding from UK defence sector, with formal contest beginning early 1998. Northrop Grumman Large Aircraft Infra-Red Countermeasures (LAIRCIM) system to be installed on Air Mobility Command CC-130J, following successful conclusion of EMD testing in 2002-04.

EQUIPMENT: USMC KC-130Js and Italian C-130Js have Flight Refuelling Mk 32B-901E hose pods underwing. Latest CC-130Js for Air National Guard's 146th AW are equipped with Airborne Fire Fighting System (AFFS), which allows them to drop up to 15,142 litres (4,000 US gallons; 3,331 Imp gallons) of fire retardant in a single pass. Italian C-130J configured to operate with Special Avionics Mission Strap-on-Now (SAMSON) C-130 Open Skies System (COPS) in support of international arms control verification efforts.

DIMENSIONS, EXTERNAL:

Wing span	40.41 m (132 ft 7 in)
Wing aspect ratio	10.1
Length overall: C-130J	29.79 m (97 ft 9 in)
C-130J-30/CC-130J	34.37 m (112 ft 9 in)
Height overall: C-130J	11.84 m (38 ft 10 in)
C-130J-30/CC-130J	11.81 m (38 ft 9 in)
Tailplane span	16.05 m (52 ft 8 in)
Wheel track	4.34 m (14 ft 3 in)
Propeller diameter	4.11 m (13 ft 6 in)
Main cargo door (rear of cabin):	
Height	2.77 m (9 ft 1 in)
Width	3.12 m (10 ft 3 in)
Height to sill	1.03 m (3 ft 5 in)
Paratroop doors (each): Height	1.83 m (6 ft 0 in)
Width	0.91 m (3 ft 0 in)
Height to sill	1.03 m (3 ft 5 in)
Emergency exits (each): Height	1.22 m (4 ft 0 in)
Width	0.71 m (2 ft 4 in)

DIMENSIONS, INTERNAL:

Cabin, excl flight deck:	
Length excl ramp: C-130J	12.19 m (40 ft 0 in)
C-130J-30/CC-130J	16.76 m (55 ft 0 in)
Length incl ramp: C-130J	15.32 m (50 ft 3 in)
C-130J-30/CC-130J	19.89 m (65 ft 3 in)
Max width	3.12 m (10 ft 3 in)
Max height	2.74 m (9 ft 0 in)
Total usable volume: C-130J	128.9 m³ (4,551 cu ft)
C-130J-30/CC-130J	170.5 m³ (6,022 cu ft)

AREAS:

Wings, gross	162.12 m² (1,745.0 sq ft)
Ailerons (total)	10.22 m² (110.00 sq ft)
Trailing-edge flaps (total)	31.77 m² (342.00 sq ft)
Fin	20.90 m² (225.00 sq ft)
Rudder, incl tab	6.97 m² (75.00 sq ft)
Tailplane	35.40 m² (381.00 sq ft)
Elevators, incl tabs	14.40 m² (155.00 sq ft)

WEIGHTS AND LOADINGS (internal fuel only, except where specified):

Operating weight empty:	
C-130J	34,274 kg (75,562 lb)
C-130J-30/CC-130J	35,966 kg (79,291 lb)
Max fuel weight: internal	20,819 kg (45,900 lb)
external (optional)	8,506 kg (18,754 lb)
Max payload, 2.5 g: C-130J	18,955 kg (41,790 lb)
C-130J-30/CC-130J	17,264 kg (38,061 lb)
Max normal T-O weight	70,305 kg (155,000 lb)
Max overload T-O weight:	
C-130J, C. Mk 4	79,380 kg (175,000 lb)
Max normal landing weight	58,965 kg (130,000 lb)
Max overload landing weight	70,305 kg (155,000 lb)
Max zero-fuel weight, 2.5 g	53,230 kg (117,350 lb)
Max wing loading (normal)	433.7 kg/m² (88.83 lb/sq ft)
Max power loading (normal)	5.14 kg/kW (8.44 lb/shp)

PERFORMANCE (C-130J except where indicated):

Never-exceed speed (VNE) at 3,050 m (10,000 ft)	
C. Mk 4	378 kt (700 km/h; 435 mph)
Max cruising speed:	
C-130J	348 kt (645 km/h; 400 mph)
C. Mk 4 at 7,620 m (25,000 ft)	
	356 kt (659 km/h; 410 mph)
Econ cruising speed	339 kt (628 km/h; 390 mph)
Stalling speed	100 kt (185 km/h; 115 mph)
Max rate of climb at S/L	640 m (2,100 ft)/min
Time to 6,100 m (20,000 ft)	14 min
Cruising altitude	8,535 m (28,000 ft)
Service ceiling at 66,680 kg (147,000 lb) A/UW	
	9,315 m (30,560 ft)
Service ceiling, OEI, at 66,680 kg (147,000 lb) A/UW	
	6,955 m (22,820 ft)

T-O run	930 m (3,050 ft)
T-O to 15 m (50 ft)	1,433 m (4,700 ft)
T-O run using max effort procedures	549 m (1,800 ft)
Landing from 15 m (50 ft) at 58,967 kg (130,000 lb)	
A/UW	777 m (2,550 ft)
Landing run at 58,967 kg (130,000 lb) A/UW	
	427 m (1,400 ft)
Runway LCN: asphalt	37
concrete	42
Range with 18,144 kg (40,000 lb) payload and Mil-C-5011A reserves	2,835 n miles (5,250 km; 3,262 miles)

UPDATED

LOCKHEED MARTIN ADVANCED MOBILITY AIRCRAFT (AMA)

TYPE: Medium transport/multirole.

PROGRAMME: Studies under way since early 1995; initially known as 'World Airlifter' and New Strategic Aircraft (NSA). Lockheed Martin's primary objective was to develop a replacement for Boeing KC-135 Stratotanker in-flight refuelling aircraft, Lockheed C-141 StarLifter strategic transport and tanker/transport types such as the Lockheed L-1011 TriStar and McDonnell Douglas KC-10 Extender, although it is also intended to offer commercial freighter versions as well as special mission aircraft configured for AEW and battlefield surveillance tasks.

Lockheed Martin is proposing to develop the AMA as a private venture and is seeking two or three risk-sharing international partners to form a consortium; past discussions took place with several potential partners, including Aerospatiale Matra, DaimlerChrysler Aerospace and BAE Systems.

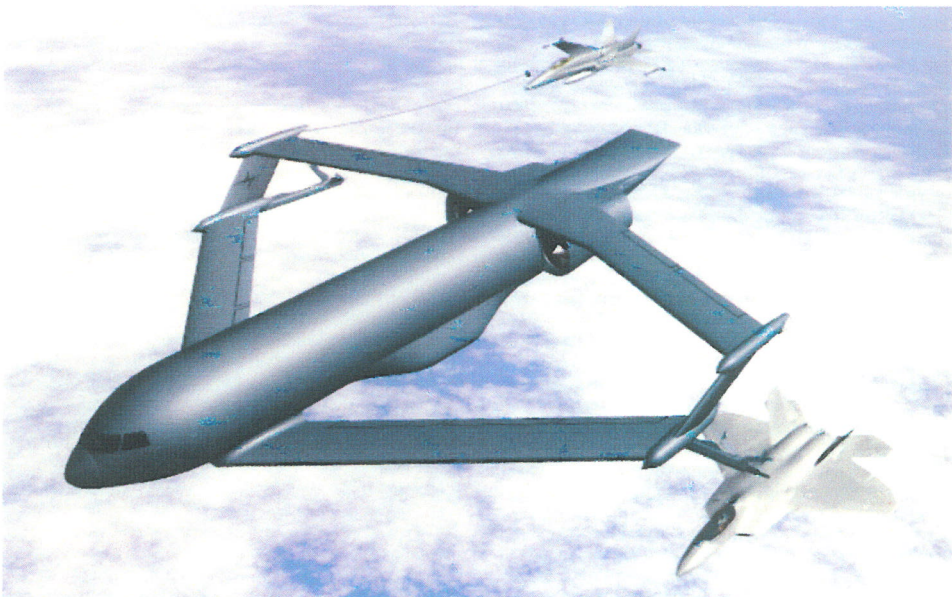
Recent studies envisage a twin-engined design with high bypass turbofans in the 267 to 311 kN (60,000 to 70,000 lb st) class, an M0.85 cruise speed, with 30 per cent greater fuel offload than the KC-135R/T Stratotanker. In the cargo role, AMA will carry a payload of 45,360 to 54,430 kg (100,000 to 120,000 lb) over 4,000 n miles (7,408 km; 4,603 miles).

Over 40 advanced aircraft designs examined, leading to further study of four basic concepts, all of which feature modular design using common basic structure and systems to reduce initial manufacturing costs and facilitate airframe upgrades during service life. Modular systems and avionics bus architecture will easily accommodate mission-orientated equipment for specific roles. Configurations studied include a conventional high-wing aircraft; a blended wing/body aircraft; a box-wing aircraft with two refuelling booms and two hose-and-drogue assemblies; and a global transport with an unrefuelled range of 12,000 n miles (22,220 km; 13,810 miles).

Design effort directed to the box-wing aircraft concept during 1997-2000, by virtue of aerodynamic and structural efficiency, combined with greatly reduced aircraft size. As recently envisaged, it will have two flight deck crew, plus advanced refuelling and loadmaster workstations; incorporate roll-on/roll-off cargo handling capability and be compatible with 20 and 40 ft ISO containers; and embody fly-by-light/power-by-wire flight control systems. Testing of a radio-controlled scale model began on 7 March 1997, this exhibiting excellent flight characteristics and meeting, or surpassing, test objectives during a total of 18 sorties.

Current planning expects AMA development effort to reach a peak during 2004-13, with resultant production aircraft ready for delivery from 2013; however, USAF purchase seems less likely in view of decision to acquire Boeing KC-767 tanker on lease. No recent news received.

UPDATED



Computer-generated image of Lockheed Martin box-wing tanker/transport design

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