IHS™ Jane's®
All the World's Aircraft
Development & Production

2013-2014

Editor-in-Chief: Paul Jackson FRAeS
Deputy Editor: Kenneth Munson AMRAeS
Assistant Editor: Lindsay Peacock
Compilers: Susan Bushell & David Willis

ISBN 978 0 7106 3040 7 - All the World's Aircraft Development & Production
ISBN 978 0 7106 3041 4 - All the World's Aircraft In Service
ISBN 978 0 7106 3043 8 - All the World's Aircraft Unmanned
ISBN 978 0 7106 3077 3 - All the World's Aircraft Full Set

MIX
Paper from responsible sources
FSC® C006021
www.fsc.org

This book was produced using FSC® certified paper
Printed and bound in the UK
by Polestar Wheatons

Contents

*Compiled by Bill Gunston, OBE, FRAeS

AIRCRAFT

Argentina

Cicaré

Cicaré Helicopteros SA

Tte Gral Juan D Perón 1642, Piso 3º, Of 33, Buenos Aires
e-mail: info@cicare.com.ar
Web (1): www.cicare.com.ar
Web (2): www.cicare-europe.com
Technical Director: Augusto U Cicaré
President: Fernando Cicaré

Cicaré Helicopteros formed 6 October 1993 to exploit the work of prolific helicopter-, engine- and pump designer, Augusto Cicaré, whose CH-1 had first flown in 1958. CH-7 is marketed by Helisport of Italy, while Argentine company's initial success was with SVH-3 helicopter simulator, first tested in October 1994. CH-11 single-seat helicopter with contrarotating rotors, powered by a 55.9 kW (76 hp) Rotax 618 two-stroke, flew in 1998 and remains under development, currently in CH-11C form.

CH-14 was evaluated in 2007 by Argentine Army Aviation; continued to be promoted in 2012. In addition, Cicaré is working with AAA on developing two other helicopters: side-by-side two-seater; and five-seat CH-16 for training, liaison, transport and rescue.

At Aero '11, Friedrichshafen, 13 to 16 April 2011, Cicaré Europe was launched, initially to market CH-7B Spirit, CH-12 and SVH-3 in collaboration with Aeris Naviter of Spain (*which see*). Under this arrangement, Cicaré providing technical assistance with latter's helicopter programmes. Cicaré also has agents in Brazil and Australia/New Zealand.

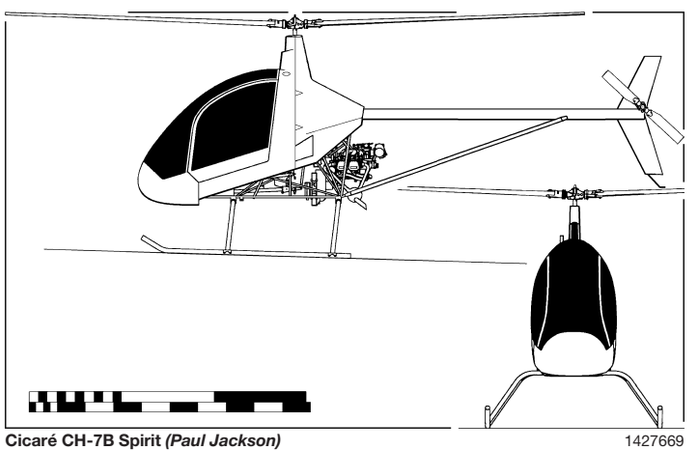
Cicaré CH-7B Spirit

Type: Single-seat ultralight helicopter/kitbuilt.
Programme: Prototype (LV-X413) revealed at Argentine EAA Convention, 18 to 24 March 2010. Production started in August 2010. Department of Aeronautical Certification of National Argentine Civil Aviation Administration issued authorisation letter for the CH-7B kit version on 21 March 2011. European marketing began, and name announced, at Aero '11, Friedrichshafen, 13 to 16 April 2011.
Customers: Some 20 sold by April 2011 to customers in Argentina, Australia (five by end of 2011), Brazil, New Zealand and elsewhere.
Costs: Flyaway EUR74,995; kit includes engine EUR69,995; plus tax (2011).
Design Features: Sport helicopter; evolved from CH-6 and CH-7 Angel, offering improved performance and visibility from cockpit.

Pod-and-boom configuration, latter braced by V struts and supporting empennage of fin, underfin and starboard half-tailplane.

Structure: Chassis of welded tubular 4130 steel; skids of 4130 steel and aluminium; composites main- and tail-rotor blades; aluminium empennage; composites nacelle and fuel tank.
Landing Gear: Skid type; fixed.
Power Plant: One 73.5 kW (98.6 hp) Rotax 912 ULS flat-four. Fuel tank behind cockpit; filler cap port side.

Production example of Cicaré CH-7B Spirit 1449001



Cicaré CH-7B Spirit *(Paul Jackson)* 1427669

Accommodation: Door each side.
Equipment: Navigation and conspicuity lights.

CH-7B Spirit

Dimensions, External	
Overall	
length, rotors turning	7.15 m (23 ft 5½ in)
height	2.48 m (8 ft 1¾ in)
Fuselage	
length, tail rotor turning	5.67 m (18 ft 7¼ in)
width	0.83 m (2 ft 8¾ in)
Skids, skid track	1.77 m (5 ft 9¾ in)
Rotors, rotor diameter	6.28 m (20 ft 7¼ in)
Tail rotor, tail rotor diameter	1.01 m (3 ft 3¾ in)
Areas	
Rotor disc	30.97 m² (333.4 sq ft)
Weights and Loadings	
Weight	
Weight empty	265 kg (584 lb)
Max T-O weight	430 kg (948 lb)
Performance	
Climb	
Rate of climb, max, at S/L	420 m/min (1,378 ft/min)
Altitude, Service ceiling	3,000 m (9,840 ft)
Speed	
Never-exceed speed	104 kt (194 km/h; 120 mph)
Cruising speed, normal	81 kt (150 km/h; 93 mph)
Endurance	2 hr 30 min

Cicaré CH-12

Type: Two-seat helicopter.
Programme: Proof-of-concept CH-2002 flew in September 2001 as unenclosed air vehicle with 127 kW (170 shp) Labala GFL-2000 turboshaft. Turbine power not proceeded with, however; developed as CH-12, of which prototype (LV-X412) revealed at Argentine EAA Convention, 18 to 24 March 2010. European marketing began at Aero '11, Friedrichshafen, 13 to 16 April 2011.

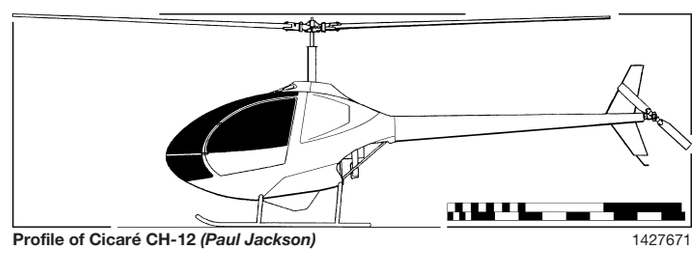
Agreement announced 10 October 2012 for CH-12 to be manufactured by FAdeA in Argentina.

Design Features: Pod-and-boom configuration, latter cantilever and supporting empennage of fin, underfin and starboard half-tailplane.
Structure: Chassis of welded tubular 4130 steel; skids of 4130 steel and aluminium; composites main- and tail rotor blades; aluminium empennage; composites nacelle and fuel tanks.
Landing Gear: Skid type; fixed.
Power Plant: One 134 kW (180 hp) Lycoming HIO-360-G1A flat-four.
Accommodation: Two persons, side by side, with dual controls; door each side.

CH-12

Dimensions, External	
Overall	
length, rotors turning	8.66 m (28 ft 5 in)
height	2.71 m (8 ft 10¾ in)
to fintip	2.10 m (6 ft 10¾ in)

Prototype Cicaré CH-12 1427670



Profile of Cicaré CH-12 *(Paul Jackson)* 1427671

H-4

Dimensions, External	
Overall	
length	1.475 m (4 ft 10 in)
height	
to rotor head	2.44 m (8 ft 0 in)
rotors turning	2.505 m (8 ft 2½ in)
Wheels	
wheel track	
outer rims, front	1.02 m (3 ft 4¼ in)
outer rims, rear	1.92 m (6 ft 3½ in)
Rotors	
rotor diameter, each	4.00 m (13 ft 1½ in)
Areas	
Rotor disc, each	12.57 m² (135.3 sq ft)
Weights and Loadings	
Weight	
Weight empty	70 kg (154 lb)
Max T-O weight	180 kg (396 lb)
Performance	
Altitude, Service ceiling	2,000 m (6,560 ft) (est)
Speed	
Never-exceed speed	48 kt (90 km/h; 55 mph)
Cruising speed	22 kt (41 km/h; 25 mph)
Endurance	1 hr (est)

Hirobo

Hirobo Ltd

530-214 Motoyama-cho, Fuchu-shi, Hiroshima 726-8614
Tel: (+81 847) 41 67 80
Fax: (+81 847) 41 89 02
e-mail: model-ms@hirobo.co.jp
Web: www.hirobo.co.jp
President: Kotaro Matsusaka

After earlier existence (1949-77) in the textiles industry, Hirobo transformed its business in November 1988 into producing radio-controlled scale-model helicopters. It currently produces a range of these, including designs by Eurocopter, Bell and other companies. Its first full-size machine, the HX-1, was unveiled in 2012.

Hirobo HX-1

Type: Single-seat ultralight helicopter.
Programme: Unveiled at Japan International Aerospace show in October 2012, at which time tethered hover tests said to have already been undertaken; first free flight was then planned for early 2013. May be used in optionally piloted guise for rescue of persons from inaccessible places.
Design Features: Two two-blade coaxial, contra-rotating rotors; exoskelitor airframe; four-legged fixed landing gear. Said to have 30-minute endurance and range of 48 n miles (90 km; 56 miles), but no other specification data given.
Power Plant: Electric motor, powered by lithium-ion batteries.

Hirobo HX-1 single-seat helicopter 1478723

JADC

Japan Aircraft Development Corporation

Hibiya Kokusai Building/7F, 2-2-3 Uchisaiwai-cho, Chiyoda-ku, Tokyo 100-0011
Tel: (+81 3) 35 03 32 25
Fax: (+81 3) 35 04 03 68
Web: www.jadc.or.jp
Chairman: Ikuo Mori
Vice-Chairman: Yukio Kitazume
Senior Managing Director: Kiyota Ichimaru
Managing Directors:
Kenichiro Usuki
Ichiro Mii
Senior General Managers:
Koji Tagawa (Commercial Airplane Group)
Toshihiko Azuma (High Speed Transport Programme Group)
Takashi Ugai (Marketing Group)
Takeshi Yukawa (787 Business Group)

Known as CTDC (Civil Transport Development Corporation) from 30 March 1973 until 27 December 1982, JADC is a non-profit consortium established by airframe manufacturers Mitsubishi, Kawasaki and Fuji to promote commercial aircraft business; members now also include Nippi and ShinMaywa.

Currently a partner in Boeing 787 Dreamliner; also executing design and feasibility studies for regional transport project; research programmes for high-speed transport studies; market research for commercial aircraft.

JAXA

Japan Aerospace Exploration Agency, Aviation Program Group

7-44-1 Jindaiji Higashi-machi, Chofu-shi, Tokyo 182-8522, Japan
Tel: (+81 4) 22 40 30 00
Fax: (+81 4) 22 40 32 81
Web: www.apg.jaxa.jp
Executive Director: Kazuhiro Nakahashi
APG Programme Director: Toshiyuki Iwamiya
APG Public Relations: Azumi Ishii

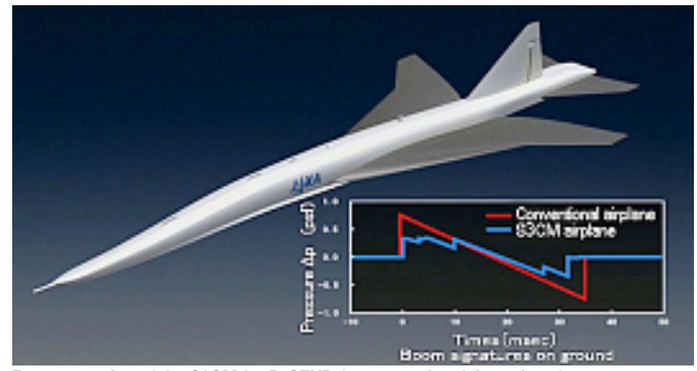
JAXA was created on 1 October 2003 by amalgamation of Japan's National Aerospace Laboratory (NAL), Institute of Space and Astronautical Science (ISAS) and National Space Development Agency (NASDA). It has taken part in several international research collaborations with NASA (US), ONERA (France) and Germany's DLR.

The Aviation Programme Group (APG) has seven main research teams, devoted to: (1) Environmentally Compatible Airframe Technology; (2) Environmentally Compatible Engine Technology; (3) Supersonic Transport; (4) D-SEND project; (5) Operation and Safety Technology; (6) DREAMS project; (7) Unmanned Aircraft Systems Applications Technology. JAXA has been a research partner in Franco-Japanese industry collaboration, including a three-year, USD5.4 million agreement signed with EADS on 14 June 2005 for development research into a 300-passenger supersonic transport able to fly from New York to Tokyo in 6 hours. The current D-SEND project (see entry for JAXA SST) was launched in 2010 to validate JAXA's original design concept to reduce the sonic boom of supersonic aircraft. Second stage of D-SEND was due to take place in 2013.

A single-seat, electric-powered research aircraft was in the early development stages by the Innovative Aircraft team in 2011. A prototype electric motor developing 20 kW (26.8 hp) has been produced,

JAXA SST

Type: Supersonic airliner.
Programme: Begun as indigenous project in 1997 by National Aerospace Laboratory of Japan; continues towards development of future supersonic transport for service entry in 2015 to 2020 time frame. Main objectives are to improve environmental impact by minimising sonic boom and reducing engine noise during take-off and landing; and to increase economic viability by reducing airframe weight and air drag, and improving engine efficiency. Research phase (development of design approach), involving NEXST-1 (National Experimental Supersonic Transport-1) flight test project, has been superseded by D-SEND programme (see below). Flight test demonstrations, as one of the D-SEND project's key technologies to validate the low sonic boom design concept, are planned to continue from 2010 to 2013.
Current Versions: ***NEXST-1:*** Subscale flight demonstrator for low-drag design concept, with natural laminar flow wing section. Is newly developed design concept for application to a large-scale (300 passenger) SST. First flight test was attempted 14 July 2002, using the NEXST-1 model launched by solid-fuel booster rocket, but failed when model detached prematurely and crashed. Second test flight, with 11.5 m (37.7 ft) long unpowered NEXST-1 model, made from Woomera Test Range in Australia 10 October 2005, was successful. Model separated from rocket at about 19,000 m (62,340 ft) and glide-flew at M2.0 for 15 minutes 22 seconds before descending by parachute. Results of this flight test were published at October 2006 conference.



Representation of the S3CM for D-SEND 2 tests, and anticipated performance results 1449472

Medway SLA 100 Clipper ***(Paul Jackson)*** 1449591

SLA 80, SLA 95i, SLA 100

Weights and Loadings	
Weight	
Weight empty	268 kg (590 lb)
Max T-O weight	450 kg (992 lb)
Performance	
Climb	
Rate of climb, max, at S/L	259 m/min (850 ft/min)
Speed	
Never-exceed speed	107 kt (198 km/h; 123 mph)
Max level speed	82 kt (152 km/h; 94 mph)
Cruising speed, at 4800 rpm	70 kt (130 km/h; 81 mph)
Stalling speed, flaps down	33 kt (62 km/h; 38 mph)
***g* limits**	+4/–2

Reality

Reality Aircraft Ltd

Unit 7, The Centurion Centre, Castlegate Business Park, Old Sarum, Salisbury, SP4 6QX
Tel: (+44 17 22) 42 16 12
e-mail: info@realityaircraft.com
Web: www.realityaircraft.com
Managing Director: Terry Francis
Director: Kate Mather

Reality previously marketed the Easy Raider, for which it has world rights, except in the USA. By early 2012, nine Easy Raiders had flown in UK (one subsequently written off) and further two under construction. US partner, Just AirCraft LLC, developed the Escapade for which it previously supplied components to the UK until indigenous sourcing was achieved in 2005. Escapade was, briefly, marketed separately by Escapade Aircraft but, on 23 March 2010 Reality Aircraft Ltd announced it was, once again, responsible for UK production of the Escapade aeroplane. Airweld Ltd of Crawley, Hampshire, produces new airframes and The Light Aeroplane Company (TLAC) of Little Snoring, Norfolk, supplies CNC precision-cut parts and Oratex covering.

Escapade aeroplane is based on Just AirCraft Escapade/Highlander, designed and built in US, although Highlander version is not available in Europe. Accordingly, refer to Just AirCraft for a description.

Reality Escapade Kid and One

Type: Single-seat ultralight/kitbuilt.
Programme: Launched at Sport & Leisure Aviation Show at Birmingham, UK, 29 to 30 November 2008, when prototype G-OKID displayed, having been registered four days earlier. By early 2011, development work had been completed, including installation and testing of different engines; fitting of an optional ballistic parachute recovery system; and addition of fin fillet.
Current Versions: ***Escapade Kid:*** Flyaway or kit. *As described.*
Escapade One: Non-SSDR version; similar to Kid, but allowing empty weight above 115 kg. Available as kit only, as demanded by BCAR Section S.
Customers: First built aircraft had been completed by 2011.
Costs: Complete kit GBP19,999 with F33 and Oratex fabric, or GBP21,999 with Aero 40 engine; flyaway GBP24,999 with F33 or GBP26,999 with Aero 40; all plus tax (2012).
Design Features: Originally for sub-115 kg (253 lb empty weight) single-seat deregulated (SSDR) class. Despite name, is not directly related to Escapade, but appears to be derivative of Flying K Sky Raider, which was predecessor of Reality's Easy Raider.
High wing with two tubular main- and two auxiliary bracing struts each side. Mutually braced empennage; wire above tailplane and V struts below; empennage surfaces non-aerofoil. Wings foldable for storage, remaining horizontal.
Flying Controls: Conventional and manual. Flaps. Balanced ailerons. Tab on starboard elevator. Cable actuation.
Structure: Fabric-covered, welded steel tube. Wing built on two tubular spars, one forming leading-edge. Composites engine cowling. Flyaway version has Oratex UL600 covering.
Landing Gear: Tailwheel type; fixed. Two faired-in side Vs hinged to lower longerons, with bungee-spring half-axles braced to compression frame. Hydraulic mainwheel brakes. Mainwheel tyres 4.00-6; solid tailwheel.
Power Plant: One 18.1 kW (24 hp) Hirth F33 single-cylinder, two-stroke piston engine driving a Powerfin two-blade, ground-adjustable pitch propeller. Optional 29.8 kW (40 hp) Aero 40 rotary engine or Newton propeller. Fuel tank in starboard wingroot. Standard fuel capacity 20 litres (503 US gallons; 4.4 Imp gallons); optional tank of similar size, port.
Equipment: Optional ballistic recovery parachute.

Reality Escapade Kid ***(Paul Jackson)*** 1449145

Aerospace Systems

1 Space Park, Redondo Beach, California 90278
Tel: (+1 310) 812 43 21
Web: www.as.northropgrumman.com
Corporate Vice-President and President, Aerospace Systems: Gary W Ervin
Sector Vice-President, Communications: Cynthia W Curiel

Aerospace Systems functions as prime contractor for the B-2A Spirit stealth bomber and the E-8C Joint STARS airborne targeting and battlefield management system, in addition to developing the E-2D Advanced Hawkeye for the US Navy. Serves as principal subcontractor for the F/A-18 (see Boeing) and is teamed with Lockheed Martin on the F-35 Lightning II JSF programme. Other work includes modification and support of the EA-6B Prowler, F-5 Tiger II and Fairchild A-10 Thunderbolt II. Also engaged in production and support of UAVs, including Global Hawk, Fire Scout and UCAS-D, for reconnaissance, surveillance and deception as well as aerial target systems.

Operating elements are organised into business areas, as below. Workforce totalled approximately 23,000 at beginning of 2012.

Military Aircraft Systems
Vice-President and General Manager: Patricia McMahon

Space Systems
Vice-President and General Manager: Jeffrey D Grant

Unmanned Systems
Vice-President and General Manager: Gerard A Duke Dufresne

Advanced Programs and Technology
Vice-President and General Manager: Paul K Meyer

Northrop Grumman E-2 Hawkeye

Type: Airborne early warning and control system.
Programme:

Development Milestones

E-2A	
First flight	21 Oct 60
First delivery	19 Jan 64
Subsequent versions	
E-2C	
First flight	20 Jan 71
First flight, production	23 Sep 72
Entered service (US Navy)	Nov 73
E-2D	
Official go-ahead (SDD contract award)	Aug 04
First flight	3 Aug 07
First delivery (pilot production aircraft)	29 Jul 10

First flight of first of three prototypes 21 October 1960; total 59 production E-2As, of which 51 updated to E-2B by end 1971 apart from two TE-2A trainers and two converted to E-2C prototypes; first flight of E-2C prototype 20 January 1971; production started mid-1971; first flight production aircraft 23 September 1972; 217 of all E-2C versions produced (including 36 for export), with final example delivered (to US Navy) on 21 September 2009. Flying hours exceeded one million by the end of 2006.

Current Versions: ***E-2C:*** Current service version (*as detailed*). Baseline aircraft (65 built) had AN/APS-120 or AN/APS-125 radar; replaced in production by 'Group 0' version (35 built) with AN/APS-138 radar. In closing stages of 2004, US Navy possessed only four active 'Group 0' aircraft; assigned to VAW-77 at Atlanta, Georgia, these have since been retired from service.

AN/APS-139 and Allison T56-A-427 engines formed **Group I** update; first operational aircraft (163538) delivered to VAW-112 on 8 August 1989; 18 built; AN/APS-139 could detect cruise missiles at ranges exceeding 100 n miles (185 km; 115 miles); also monitored maritime traffic; radar coverage extended by AN/ALR-73 passive detection system (PDS), detecting electronic emitters at twice radar detection range. All Group I aircraft subsequently modified to either TE-2C or Group II standard. AN/APS-145 in **Group II** aircraft from December 1991; other enhancements gave Group II version 96 per cent expansion in radar volume, 400 per cent extra target tracking capability, 40 per cent more radar and identification range and 960 per cent increase in numbers of targets displayed. Group II added JTIDS in 1993–94; also has GPS. Final Group II aircraft for US Navy delivered in mid-2001; one since modified to TE-2C configuration. Retrofit with eight-blade propellers was due to start in 2001, with first operational example expected in fourth quarter; however, vibration problems encountered in testing caused delay and new propeller did not enter service until mid-2004. On 15 August 2005, Northrop Grumman announced completion of Group II Mission Computer Replacement Program (MCRP), whereby approximately 48 aircraft were upgraded; this involved installation of new processor and open systems, Commercial Off-The-Shelf (COTS) hardware. Benefits included predicted MTBF in excess of 8,000 hours for mission computer; reduced hardware weight from 318 kg (700 lb) to 48 kg (105 lb); lowered heat dissipation from 1,700 W to 80 W; and reduced central processing unit load time to below 30 seconds (previously in excess of 2.5 minutes).

New glass cockpit and upgraded navigation system installed on VX-20 E-2C (163849) for evaluation; following modification, this made first flight from Patuxent River, Maryland on 13 August 2008. Revised systems are part of Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) enhancement which makes use of satellite-based technology to improve communication and navigation, while simultaneously offering increased levels of safety through more effective and efficient use of assigned airspace. Evaluation of CNS/ATM continuing, including shore-based catapult launch and arrested landing assessment in late 2008/early 2009, before carrier qualification in second quarter of 2009.

TE-2C: Training model, based on E-2C; two conversions (158639, 158648) originally undertaken, of which one (158639) was later assigned to JTIDS development with Northrop Grumman. At least four further conversions (159105, 163029, 163848, 164110) subsequently made for training purposes with VAW-120 at Norfolk, Virginia. Three new-build examples acquired in FY04–07, with these lacking radar, but including wiring and hardware systems to facilitate future conversion; first new-build TE-2C (166503) delivered to US Navy in 2006, with remaining two following in 2008 and 2009. Contract valued at USD11.88 million awarded to Northrop Grumman on 23 December 2010 for conversion of two TE-2Cs to E-2C standard by September 2012.

E-2T: Originally reported to be conversion of E-2B for Taiwan, but new-build aircraft equivalent to E-2C Group I actually supplied; AN/APS-138 radar and electronic warfare upgrades. Delivery began in 1995, with further two obtained following agreement in July 1999; these to Hawkeye 2000E standard, with AN/APS-145 radar, but lacking CEC and satcom equipment. Delivery of first accomplished in USA 10 August 2004, with second following by end of year; both subsequently shipped to Taiwan, arriving there 19 May 2005. Original four aircraft to be upgraded to Hawkeye 2000E standard by June 2013, following request by Taiwan in October 2008; first two for upgrade returned to US by sea in June 2010 and redelivered in December 2011, with final two shipped to US in November 2011 for upgrade. Alternative, unofficial, designation of latest Taiwanese aircraft is **E-2K**, derived from Hawkeye 2000 (E-2C 2K).

Hawkeye 2000: In December 1994, company received USD155 million contract to redefine E-2C as the Hawkeye 2000. Key element was mission computer upgrade (MCU), with new equipment based on Raytheon's Model 940.

Initial trials of upgraded mission computer installed on second Group II aircraft (164109) began with first flight on 24 January 1997 and were completed in July 1997, at which time authorisation given for low-rate initial production of new mission computer. However, early flight trials revealed software problems that delayed production of new mission computer by about a year. More ambitious technical and operational evaluations undertaken with five modified aircraft in 1999–2001. All were Group II aircraft fitted with MCU and ACIS (see below) elements of proposed Hawkeye 2000; first two delivered to Patuxent River for initial evaluation by May 1999. At least four to Point Mugu from August 1999, joining VAW-117 for operational evaluation from October, with latter phase including deployed duty aboard a carrier for full battlegroup operations. In meantime, another E-2C (163849) used as testbed for satcom, vapour-cycle cooling upgrade and Navy's USG-3 co-operative engagement capability (CEC) package, following first flight in April 1998; latter resulted in addition of 1.37 m (4 ft 6 in) antenna dish under belly containing omnidirectional transceiver that connects with command centres on parent aircraft carrier and surface combatant warships; provision of satcom evident through addition of cone-shaped fairing on top of rotodome.

New mission computer was less than half the weight of L-304, one-third of volume, and offered 15 times the processing power; other improvements for Hawkeye 2000 included government-furnished advanced control indicator set (ACIS), satellite-based voice and data communications capability, a new Honeywell vapour-cycle cooling system, air-to-air refuelling capability (if required) and inclusion of equipment and systems that formed part of Navy CEC package. MCU and ACIS made use of commercial off-the-shelf technology incorporating open architecture.

In April 1999, contract awarded for 24 aircraft for US Navy (21 Hawkeye 2000s) as five-year procurement package, Taiwan (two Hawkeye 2000Es) and France (one Group II Hawkeye); in early 2003, US Navy announced intention to award second multiyear procurement contract, for total of eight aircraft (including some TE-2Cs) to be acquired at rate of two per year during FY04 to FY07, with first delivery accomplished in 2006 and last (final E-2C) on 21 September 2009. First deployment of Hawkeye 2000 with VAW-117 squadron in 2003. Export-configured Hawkeye 2000s lack CEC and satcom facilities.

First production Northrop Grumman E-2D Advanced Hawkeye (167929) landing on USS *Dwight D Eisenhower* during trials by VX-1 in September 2011 *(MCS Sm Albert Jones, USN)* 1449407