

 SHEPHARD

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THE CONCISE GLOBAL INDUSTRY GUIDE

CIVIL AND PARAPUBLIC HELICOPTER

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3 Market analysis

In a comprehensive market overview, *Shephard* examines how the civil helicopter market is slowly recovering from a period of negative activity, looking at growth areas across the various regions and sectors, and how OEMs are positioning themselves for the future.

13 Rotorcraft

Specification data, descriptions and photographs of helicopters and tiltrotors currently being produced and developed for commercial and public service roles.

42 Engines

A selection of helicopter engines, specifying models in production.

48 Integrated mission systems

A selection of integrated mission systems available for integration onto commercial and parapublic helicopters.

63 Sensor payloads

A range of sensors available for installation on commercial and parapublic helicopters.

77 Communications equipment

Featured communications equipment commonly installed in commercial and public service helicopters.

85 Emergency medical service equipment

Air ambulance interiors and related equipment currently available.

94 Fire-fighting equipment

Products such as underslung fire buckets, water and foam delivery and refill systems.

98 Law enforcement equipment

Descriptions of a range of equipment available to aid aerial law enforcement.

102 Search and rescue equipment

A variety of equipment designed to aid SAR professionals.

115 Guide to suppliers

A worldwide listing of companies providing products and services to the public and commercial rotary-wing sector. Companies are listed with full contact details from p129.



COVER: Airbus Helicopters received orders from two North American customers in October 2018 to deliver a total of six helicopters – three H125s and two H130s – for EMS operations. (Photo: Airbus) **ABOVE:** Kopter began flight trials of its latest SH09 prototype number 3 helicopter in November 2018. (Photo: Rino Zigerlig)



FEATURE PIECE

CIVIL HELICOPTER MARKET ANALYSIS

In a comprehensive market overview, Shephard examines how the civil helicopter market is slowly recovering from a period of negative activity, looking at growth areas across the various regions and sectors, and how OEMs are positioning themselves for the future

RotorHub

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ABOVE: In June 2018, Airbus Helicopters delivered the first two of a total of six H145 helicopters to Swiss Air-Rescue Rega. (Photo: Airbus Helicopters)

As we approach the third decade of the 21st Century, the civil helicopter market is slowly recovering from a period of negative growth. Recovery is not even across all sectors, and the effects of new tariffs and trade wars have the potential to dampen the climb out, but growth in the Asian market and China in particular looks to be robust enough to sustain the industry in the short term.

If you don't count licenced or unlicenced efforts, more nations have probably successfully launched their own space programmes than have put an indigenous helicopter design into series production. New entrants are appearing, however, with Switzerland, China, India and Turkey undertaking civil programmes based on indigenous designs. Japan and South Korea are developing new derivatives of Bell and Airbus helicopters under licence. Iran is doing it without such niceties.

There continues to be expectation around the disruptive impact of air taxis, with trials on the horizon in several major cities. However while new air-taxi designs seem to appear every month, manned, unmanned, gas-powered or electric, none have yet flown a paying passenger. For the most part, major helicopter manufacturers are not yet ready to fully embrace this sector, although Airbus

has a demonstrator under construction and Bell has partnered with Uber to develop new technologies.

MARKET OVERVIEW

The world helicopter market began to pick up in 2017 and 2018 after a number of years of decline. According to the General Aviation Manufacturer's Association (GAMA), global helicopter production grew by 4.2% in 2017 after falling 15% in 2016. At the end of Q3 2018 sales of civil rotorcraft had increased by a further 16.4% over the same period in 2017, reaching a billed value of \$2.6 billion.

Lighter helicopters are the market leaders in terms of numbers, if not value. The most-produced helicopter is the Robinson R44 with 161 Cadet and Raven models built in the first nine months of 2018 (compared to 104 in the same period in 2017). Bell's new 505 has been an immediate hit with customers, with the company reporting production of 91 units in the same period (up from 27 in 2017). The H125 is Airbus's best-selling model (125 delivered in 2017, with 86 delivered to Nov 2018), followed by 93 H145s (53 in the first three quarters of 2018).

The Robinson R66, introduced in 2010 was unchallenged in its class until the Bell 505 Jet Ranger X started deliveries in 2017. Bell's

intention was to replace the 206 Jet Ranger with a light machine costing around \$1 million, but the price with common options is closer to 1.5 million. The market price for the R66 is around \$900,000 and sales have not yet shown any effect from the new competition, increasing to 77 in 2017 following a dip from 117 to 63 in 2015-16.

The R66 itself has undergone various improvements in the last year or so, including the addition of a cargo hook, rated at 544kg and has been certified to carry new HDTV camera payloads for newsgathering. The first law enforcement configured 505 was delivered to the Sacramento Police Department in December 2018. It is fitted with a moving map system, loudhailer, EO/IR system and searchlight, role equipment that is likely to become common on many 505s as police and security forces adopt the Jet Ranger X as they did the 206. With a reported cost of \$2.7 million fully equipped for the SPD 505, upgrading from older government surplus machines is a big investment for smaller forces.

MARKET FOCUS - NORTH AMERICA

The US remains the single largest market for commercial helicopters. According to engine-maker Honeywell it accounts for more than 40% of the global civil helicopter fleet.



SPECIFICATIONS

ROTORCRAFT

This section provides a guide to civil helicopters that are in production, under development or subject to major upgrade worldwide.

The specifications listed here are intended to provide a handy reference source for the basic parameters that describe the helicopter's capacity and performance. Manufacturers and their agents can supply more information on request.

All data has been supplied by the manufacturer. The speeds, hover in ground effect (HIGE) and hover out of ground effect (HOGE) figures assume ISA conditions and maximum take-off weight (MTOW) unless otherwise stated. The MTOW is the highest weight at which the aircraft is permitted to fly by regulatory authorities.

Entries are listed alphabetically first by company then by model.

If you think your product should be listed, please contact the team at reference@shephardmedia.com to ensure it appears in the Shephard Plus online database (shephardplus.com) and is included in the next print edition.

ABOVE: A USCG MH-65 Dolphin helicopter is staged at Coast Guard Aviation Training Center Mobile, Alabama, in preparation for Hurricane Michael response operations in October 2018. (Photo: USCG)

Airbus Helicopters ▶ AS365 N3+ Dauphin

Airbus Helicopters developed the AS365 N3+ from the Dauphin series of medium twin-turboshaft rotorcraft. The AS365 N3+ was launched at the 2009 Paris Air Show and was certified in 2010. **Length:** 13.73m **Width:** 3.25m **Rotor diameter:** 11.94m **MTOW:** 4.3t **Empty weight:** 2.37t **Max load on sling:** 1,889kg **Max speed:** 155kt **Cruise speed:** 145kt **Range:** 792km **HOGE:** 3,773ft **HIGE:** 8,596ft **Crew:** 2 **Passengers:** 11

**Airbus Helicopters** ▶ EC145

The EC145 is a light twin-engine helicopter which is certified for single-pilot VFR. Formerly known as the EC145e variant, the aircraft has been developed as the utility version of the family for diverse aerial work missions such as firefighting and internal or external load transport. **Length:** 13m **Width:** 3.12m **MTOW:** 3.59t **Empty weight:** 1.78t **Max speed:** 145kt **Cruise speed:** 133kt **Range:** 855km **HOGE:** 8,750ft **HIGE:** 9,600ft **Crew:** 2 **Passengers:** 10

**Airbus Helicopters** ▶ H125

The H125, designated the AS350 B3e Ecureuil/AStar until March 2015, is the high-performance version of the single-engine Ecureuil family. The H125 is designed for use in hot-and-high and environments. On 14 May 2005, it established a world record for the highest altitude landing and take-off, on Mount Everest at 29,029ft. The aircraft is equipped with a Safran Arriel 2D engine, including triple engine control with a dual-channel FADEC unit and a third independent and automatic back-up channel for automatic start-up sequences and engine handling. This engine is fitted with a data recorder. **Length:** 12.94m **Width:** 2.53m **Height:** 3.14m **Rotor diameter:** 10.69m **MTOW:** 2.8t



Empty weight: 1.24t **Max speed:** 155kt **Cruise speed:** 133kt **Range:** 650km **HOGE:** 9,450ft **HIGE:** 11,650ft **Crew:** 1 **Passengers:** 6

Airbus Helicopters ▶ H130

The H130, designated the EC130 until March 2015, is a light single-engine helicopter in the Ecureuil family, with a modular cabin that can accommodate one pilot and up to six/seven passengers. Its Fenestron tail rotor (H135 type) and automatic variable rotor speed control result in a reduced external sound level. The Safran Arriel 2D turbine engine, which includes a dual-channel FADEC system with a third independent and automatic back-up channel, offers 14% more power and a 30-min take-off power rating for occasional use compared to the previous engine. **Length:** 12.64m **Rotor diameter:** 10.68m **MTOW:** 2.5t **Empty weight:** 1.43t **Max speed:** 155kt **Cruise speed:** 128kt



Range: 616km **HOGE:** 9,700ft **HIGE:** 11,250ft
Crew: 1 **Passengers:** 7



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EQUIPMENT

FIRE-FIGHTING

This section covers products such as underslung fire buckets, water and foam delivery and refill systems for helicopters employed in fire-fighting.

The items listed are examples from each manufacturer's product range. Further details about these products can be obtained by contacting them directly. Entries are listed alphabetically by company.

If you think your product should be listed, please contact the team at reference@shephardmedia.com to ensure it appears in the Shephard Plus online database (shephardplus.com) and is included in the next print edition.

ABOVE: A UH-60 Black Hawk helicopter of the California Army National Guard hovers above Lake Pardee, California, collecting water during wildland fire-fighting training, a cooperative mission with the California Department of Forestry and Fire Protection, in April 2018. (Photo: US Army National Guard)

AERIAL FIRE CONTROL

Water Hog WH 1200 - WH 2000

AFC is the second-largest manufacturer of helicopter fire-fighting buckets in the world. Its Water Hog range of buckets is available in various sizes. The WH 1200 - WH 2000 models feature single or multiple composite valves, composite base, removable stainless-steel rim and stainless-steel PVC-coated certified rigging. The bucket has a multi-drop/variable-drop function as standard and does not have a control head. Submersible pumps are available with this range. Width: 0.8m, 1.1m or 1.25m (Dia) options Power: 24V DC control box Capacity water: 1,200-2,000l

Water Hog WH 2000 - WH 5000

AFC is the second-largest manufacturer of helicopter fire-fighting buckets in the world. Its Water Hog range of buckets is available in various sizes. The WH 2000 - WH 5000 models feature multiple composite valves, composite base options, removable stainless steel or carbon fibre rim and stainless-steel PVC-coated certified rigging. The bucket has a multi-drop/variable-drop function as standard and does not have a control head. Submersible pumps are available with this range. The WH 2000 - WH 5000 buckets can be carried by helicopters such as the UH-60 Black Hawk. Width: 1m, 1.25m, 1.5m, or 1.75m (Dia) options Power: 24V DC control box Capacity water: 2,000-5,000l

Water Hog WH 400 - WH 1100

AFC is the second-largest manufacturer of helicopter fire-fighting buckets in the world. Its Water Hog range of buckets is available in various sizes. The WH 400 - WH 1100 models feature a single composite valve, composite base, removable stainless-steel rim and stainless-steel PVC-coated certified rigging. The bucket has a multi-drop/variable-drop function as standard and does not have a control head. Width: 0.5m (Dia) Power: 24V DC control box Capacity water: 400l-1,100l

Water Hog WH 5000 - WH 8000

AFC is the second-largest manufacturer of helicopter fire-fighting buckets in the world. Its Water Hog range of buckets is available in various sizes. The WH 5000 - WH 8000 models feature multiple composite valves, composite base, removable stainless steel or carbon-fibre rim and stainless-steel PVC-coated certified rigging. The bucket has a multi-drop/variable-drop function as standard and doesn't have a control head. Submersible pumps are available with this range. Buckets in this range can be carried by helicopters such as the CH-47 Chinook. Width: 1.75m or 2m (Dia) Power: 24V DC control box Capacity water: 5,000-8,000l

Water Hog WH 8000 - WH 11000

AFC is the second-largest manufacturer of helicopter fire-fighting buckets in the world. Its Water Hog range of buckets is available in various sizes. The WH 8000 - WH 11000 models feature multiple composite valves, composite base, removable stainless steel or carbon-fibre rim and stainless-steel PVC-coated certified rigging. The bucket has a multi-drop/variable-drop function as standard, and does not have a control head. Submersible pumps are available with this range. Buckets in this range can be carried by helicopters such as the CH-47. Width: 2m (Dia) Power: 24V DC control box Capacity water: 8,000-11,000l

ERICKSON

S-64 Helitanker Fire-fighting Equipment

Erickson's 10,031l tank for the S-64 helitanker drops water, retardant or foam mix at a rate of around 95l/h. Microprocessor-controlled tank doors offer eight individual coverage level options. The ram scoop hydrofoil attachment refills from freshwater or saltwater sources in 30s, and the original 'Hoover Snorkel' design refills in 45s from freshwater sources as shallow as 46cm. Once the fire has been extinguished, the helitanker can deliver stabilising hydroseed for re-vegetation and erosion prevention. Erickson's hydroseed operations are particularly effective on steep slopes and inaccessible areas, according to the company. Erickson has been involved in fire-fighting operations in Australia, Canada, Greece, Italy, Turkey and the US. Refill type: flexible hose snorkel features a high-pressure impeller Water cannon rate: optional 1.136l/min water cannon certified, intended for wild land, urban interface and high-rise structure fire suppression Refill time: <45s Water pick-up depth: >46cm Capacity water: 10,000l

IMS NEW ZEALAND

Cloudburst Fire Buckets

IMS New Zealand manufactures the Cloudburst range of fire-fighting buckets which are available in sizes from 130-5,000l. Custom sizes are also available. Each bucket has a compact design when stowed and handled, and is capable of multi-drops. They have an optional enclosed foam dosing system, fast valve actuation speed and varied options for spread pattern. Operation is via pneumatic or electric valve, and the products are claimed to have tough and durable construction. The self-contained foam injection system is activated by a push button; a pump delivers a foaming agent for a timed period, by a pilot or crew member. Cloudburst fire buckets are manufactured from corrosion-resistant materials designed to withstand high levels of abrasion and enable each system to be filled from the various water sources to fight fires. Each can be dip-filled from freshwater, saltwater and chlorinated swimming pools. In 2016, IMS NZ supplied Cloudburst buckets and associated support equipment to the Colombian armed forces, the Ecuadorian armed forces, the Royal Thai Police and an unspecified operator in Turkey.

ISOLAIR HELICOPTER SYSTEMS

Eliminator II 4600-350B2

The Eliminator II 4600-350B2 is an external belly-mounted fibreglass and aluminium tank for mounting on the aircraft cross tubes of Airbus Helicopters AS350 B1, B2 and H125 models. The tank attaches with quick-release pins for fast and easy installation, says the company. The dump doors are electrically actuated and hydraulically operated. The fail-safe system means that the doors will open with the loss of electrical power. Cyclic control allows the pilot to control loading, mixing, dump volume and drop length. Power: 24V DC Weight: 150kg empty, 1,150kg gross Refill type: electrically driven pump and hose assembly with in-flight emergency release capability Refill time: 50-60s Capacity chemicals foam: 57l Refill rate: 1.022l/min Capacity water: 1,022l



An Isolair system being used from a Sikorsky Firehawk. (Photo: Isolair Helicopter Systems)

Eliminator II Model 4600-205

The Eliminator II Model 4600-205 for Bell 205/201/ UH1-H helicopters is a water and foam dispensing tank with hover fill pump system. The external belly-mounted fibreglass and aluminium tank is mounted to external hardpoints using quick-release pins for fast and easy installation. The dump doors are electrically actuated and hydraulically operated. The fail-safe system means that the doors will open with the loss of electrical power. The door selection switch allows for separate operations of each door for longer drops. Cyclic control allows the pilot to control loading, mixing, dump volume and drop length. Power: 28V DC, 90A Weight: 190kg empty; 1,519kg gross Refill type: electrically driven with in-flight pump and hose assembly emergence release capability Capacity chemicals foam: 103l Refill rate: 1.022l/min max Capacity water: 1,287l

Eliminator II Model 4600-212/412

The Eliminator II Model 4600-212/412 for Bell 212/412 helicopters is a water- and foam-dispensing tank with hover fill pump system. The external belly-mounted fibreglass and aluminium tank is mounted to external hardpoints using quick-release pins for fast and easy installation. The dump doors are electrically actuated and hydraulically operated. The fail-safe system means that the doors will open with the loss of electrical power. The door-selection switch allows for separate operations of each door for longer drops. Cyclic control allows the pilot to control loading, mixing, dump volume and drop length. Power: 28V DC, 90A Weight: 190kg net, 1,519kg gross Refill type: electrically driven with in-flight pump and hose assembly emergence release capability Refill time: 55-75s Capacity chemicals foam: 103l Refill rate: 1.022l/min max Capacity water: 1,287l

Eliminator II Model 4600-S61

The Eliminator II Model 4600-S61 for Sikorsky S61 A- and N-model helicopters is a water- and foam-dispensing tank with hover fill pump system. The tank assembly is an external belly-mounted fibreglass and aluminium tank mounted to external hardpoints with internal chemical tanks. The dump doors are electrically actuated and hydraulically operated. The fail-safe system means that the doors will open with the loss of electrical power. Cyclic control allows the pilot to control dump volume, drop length, mixing and door control. There is a digital readout of tank contents for easy monitoring. Power: 28V DC, 35A Weight: 360kg net, 4,151kg gross Refill type: hydraulically driven assembly with 3.7m refill hose Refill time: 45-55s Capacity chemicals foam: 340l Refill rate: 4,542l/min max Capacity water: 3,785l

SEI INDUSTRIES

Bambi Bucket

The Bambi Bucket is a robust and lightweight aerial fire-fighting bucket that delivers a solid column of water and/or fire-suppressant foam on a wildfire. The product has a single-drop, flexible valve, making it fully collapsible. It is available in model ranges 270-9,800l, supporting almost every helicopter type with an external cargo load capability. The Bambi Bucket offers more than 50 different model configurations compatible with foam-injection and shallow water-filling PowerFill accessory technologies (see separate entry). Capacity chemicals foam: 270-9,800l Capacity water: 270-9,800l

Bambi Max

The Bambi Max features unlimited, multiple-drop valve technology wrapped in the durable Bambi Bucket

shell. The product features lightweight, low-power-draw operation that increases the volume of water capacity per drop through a fuel cycle. The low-maintenance valve gives the ability to pre-select loads at the dip site and over multiple hot spots on the wildfire. The helicopter pilot can choose to 'load-shed' by unloading as many separate water drops as required to adjust for flight parameters based on fuel and other weight on board. Manual load control is standard in every Bambi Max. Auto-load control, split drop and coverage level capabilities are available with the Bambi Max Controller option. The Bambi Max is available with a PowerFill accessory (see separate entry). Power: 3A

PowerFill

PowerFill technology allows helicopter aerial fire-fighting pilots to fill their Bambi Buckets in shallow water sources during hot, dry, fire-season conditions. The robust PowerFill technology can fill in shallow streams and is configured for internal bottom fill in the multi-dump, internal Bambi Max valve or for external side-mounted snorkel fill on the small or medium Bambi and Bambi Max Buckets (see separate entries). Both systems can be retrofitted to any Bambi or Bambi Max Bucket. Applications: allows refills in shallow water Refill time: <1min Water pick-up depth: 45cm Refill rate: 1.700l/min in shallow water

SIMPLEX AEROSPACE

Fire attack systems

All Simplex fire attack systems are manufactured with lightweight, high-strength composite materials to create water tanks that are durable, safe and effective in fire-fighting missions, according to the company. All fire attack systems are capable of hover or ground refill, and both water or foam dispersal. Applications: water tank for fire-fighting Refill type: hover or ground refill

Model 301 Fire Attack

The Model 301 is a belly tank/refill hose system for Airbus Helicopters AS365-series helicopters. Applications: fire-fighting using water and foam Weight: 136kg empty Capacity chemicals foam: 90l Refill rate: 1.212l/min Capacity water: 900l

Model 304 Fire Attack

The Model 304 is a belly tank/refill hose system for Bell UH-1H, 205, 212, 412-series helicopters. It is EASA-certified. Applications: fire-fighting using water and foam Weight: 136kg empty Capacity chemicals foam: 143l Refill rate: 1.212l/min Capacity water: 1,420l

Model 308 Fire Attack

The Model 308 is a belly tank/refill hose system for the Bell 407. Applications: fire-fighting using water and foam Weight: 136kg empty Capacity chemicals foam: 90l Refill rate: 1.212l/min Capacity water: 900l

Model 310 Fire Attack

The Model 310 belly tank/refill hose system for the Airbus Helicopter AS350 and AS355-series comes in three sizes. It is EASA-certified. Applications: fire-fighting using water and foam Weight: 115-136kg empty Capacity chemicals foam: 80l Refill rate: 1.212l/min Capacity water: 900-1,200l

Model 311 Fire Attack

The Model 311 is a belly tank/refill hose system for the BK 117. Applications: fire-fighting using water and foam Weight: 120kg empty Capacity chemicals foam: 167l Refill rate: 1.136l/min Capacity water: 1,102l

Model 316 Fire Attack

The Model 316 is a belly tank/refill hose system for Airbus Helicopters H225 and AS332 L-series helicopters. Applications: fire-fighting using water and foam Weight: 364kg empty Capacity chemicals foam: 91l Refill rate: 3,785l/min Capacity water: 2,270l

Model 323 Fire Attack

The Model 323 is a belly tank/refill hose system for Leonardo AW119 helicopters. Applications: fire-fighting using water and foam Weight: 150kg empty Refill rate: 1,136l/min Capacity water: 1,200l

Model 326 Enhanced Fire Attack

The Model 326 Enhanced belly tank/refill hose system holds 20% more water than the original Model 326, and is approved to fly at speeds up to 150kt without hover pump deployed. The system is mounted on Leonardo AW139s operated by the Los Angeles Fire Department. Applications: fire-fighting using water and foam System name: Model 326 Enhanced Capacity water: 1,893l

Model 327 Fire Attack

The Model 327 is a belly tank/refill hose system designed for the Russian Helicopters Ansat. Applications: fire-fighting using water and foam Weight: 134kg empty Capacity chemicals foam: 22l Capacity water: 85l

Model 328 Fire Attack

The Model 328 is a belly tank/refill hose system designed for the Russian Helicopters Ka-32. Applications: fire-fighting using water and foam Weight: 598kg empty Capacity chemicals foam: 151l Refill rate: 3,028l/min Capacity water: 2,952l

Model 370 Fire Attack

The Model 370 Fire Attack is a belly tank/refill hose system and retractable hover pump for Sikorsky Black Hawks. Applications: fire-fighting using water and foam Capacity chemicals foam: 114l Capacity water: 3,785l

SkyCannon high-rise fire-fighting spray system

The Simplex SkyCannon high-rise fire-fighting spray system consists of a composite belly tank, refill hose system and high-pressure spray boom for installation on Airbus H225s and Russian Helicopters Ka-32s. It is designed for combating fires in urban high-rise buildings. The boom extends 1m outside rotor tips to minimise impact of rotor wash on spray. Applications: high-rise fire-fighting Length: 7.3m boom Coverage options: 40m spray range from end of boom Capacity chemicals foam: 2,270l Capacity water: 2,270l



PRODUCTS

GUIDE TO SUPPLIERS

This section lists key companies supplying goods, services and equipment to the civil and parapublic helicopter industry worldwide.

The section is separated into two listings, by product then by supplier.

Products are listed alphabetically with suppliers and their location under each.

Supplier listings from p129 are shown alphabetically and include:

- Company address
- Email and website addresses
- Telephone and fax numbers
- Contact names

Highlighted listings also include the company's logo and a summary of activity.

To update a listing or submit new information, please contact the team at reference@shephardmedia.com.

ABOVE: Crew from the USCGC Cutter *Munro* (WMSL 755) conduct air operations with an Air Station Barbers Point MH-65 Dolphin helicopter in the central Pacific. (Photo: USCG)

PRODUCTS

Accessories

Aage Christensen (DENMARK)
 Accurate Accessories (USA)
 Advanced Logistics for Aerospace (UK) (UK)
 Aero Facility (JAPAN)
 Aero Products Component Services (USA)
 Aerogulf Services Co (UAE)
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 Alpine Aerotech (CANADA)
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 Professional Aviation Associates (USA)
 Purolator Facet (USA)
 RBI Hawker (UAE)
 REB Technologies (USA)
 Robertson Fuel Systems (USA)

Robinson Helicopter (USA)
 Rolin Industries (USA)
 Russian Helicopters (RUSSIA)
 Safran Electronics & Defense (FRANCE)
 Safran Helicopter Engines (FRANCE)
 Scandinavian Avionics (DENMARK)
 SEI Industries (CANADA)
 Sigtronics (USA)
 Sikorsky Australia (AUSTRALIA)
 Sloane Helicopters (UK)
 Soderberg Manufacturing (USA)
 SpaceAge Control (USA)
 ST Engineering Aerospace Ltd (SINGAPORE)
 StandardAero (USA)
 Switlik Parachute Company (USA)
 Thomas Jacks (UK)
 Tiger Performance Products (USA)
 Tradewind International (USA)
 Transpuot (USA)
 United Rotorcraft (USA)
 Velocity Aerospace (USA)
 Zodiac Parachute & Protection America (USA)

Aerial Application Equipment

Aage Christensen (DENMARK)
 ACSE Airborne Camera Systems Europe (GERMANY)
 Air Methods (USA)
 AmSafe Bridport (UK)
 AVIA Radio (DENMARK)
 Aviall Australia (AUSTRALIA)
 Becker Avionics (USA)
 DynaNav Systems (CANADA)
 Emteq (USA)
 Erickson (USA)
 Heliatica (RUSSIA)
 Helylux Industries (FRANCE)
 Isolair Helicopter Systems (USA)
 Kawak Aviation Technologies (USA)
 Meeker Aviation (USA)
 Newcon Optik (CANADA)
 Oceania Aviation (NEW ZEALAND)
 Onboard Systems International (USA)
 RUAG Aviation (SWITZERLAND)
 Russian Helicopters (Kamov Design Bureau) (RUSSIA)
 Safran Electronics & Defense (FRANCE)
 Simplex Aerospace (USA)
 SkyNet Satellite Communications (AUSTRALIA)
 United Rotorcraft (USA)
Aerial Fire-fighting Equipment
 Aerial Fire Control (AUSTRALIA)
 AeroComputers (USA)
 Air Asia Company (TAIWAN)
 Air Methods (USA)
 Astronics Max-Viz (USA)
 Autogenwerk Spiegel (GERMANY)
 Bruggemann (GERMANY)
 Dallas Avionics (USA)
 ecms Aviation Systems (GERMANY)
 Erickson (USA)
 IMS New Zealand (NEW ZEALAND)
 Isolair Helicopter Systems (USA)
 Kaman Aerospace (USA)
 Kawak Aviation Technologies (USA)
 Meeker Aviation (USA)
 National Interagency Fire Center (USA)
 Pacific Oil Cooler Service (USA)
 Petans (UK)
 PZL-Świdnik (POLAND)
 Rumas Group (CZECH REPUBLIC)
 Russian Helicopters (Kamov Design Bureau) (RUSSIA)
 SEI Industries (CANADA)
 Simplex Aerospace (USA)
 Swanson Group Aviation (USA)
 Turkish Aerospace (TURKEY)
 United Rotorcraft (USA)

Air Conditioning/ Temperature Control

Aero Kool Corporation (USA)
 Aero Specialties (USA)
 Air Comm Corporation (USA)
 Air Methods (USA)
 Alpine Air Support (SWITZERLAND)
 Asia Aviation Services (SINGAPORE)
 AVIA Radio (DENMARK)
 Aviall Airstocks (HONG KONG)
 Aviquito Holland (NETHERLANDS)
 Consolidated Aircraft Supply (USA)
 Donaldson Aerospace & Defense (USA)
 Emteq (USA)
 Essex Industries (USA)
 Hawker Pacific Middle East (UAE)
 Hillsboro Aviation (USA)
 IAI North America (USA)
 Oxford Aviation (UK)
 Pacific Oil Cooler Service (USA)
 Pall (UK)
 Paravion Technology (USA)
 Powervamp (UK)

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