

September 14, 2017
China Helicopter Expo
第四届中国天津国际直升机博览会

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中航传媒 国际航空
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2017年9月13日，由中国航空工业集团公司和天津市人民政府共同主办，航空工业直升机公司承办的“2017中国直升机发展论坛”在天津空港经济区举行。

本届论坛以“‘军民融合、一带一路’引领通航产业大发展”为主题，其中中国航空工业集团公司副总经理陈元在开幕式上致辞时表示，航空工业具有天然的军民融合属性，也是“一带一路”国际合作的重要领域，特别是在直升机领域，我们以产品制造为核心，以通航运营为推手，形成了系列化的军、民用直升机产品谱系，建立起了较为完备的科研生产、市场营销和维护保障体系，取得了明显成效。

对此，来自政府、通航公司和直升机制造商的各位嘉宾围绕论坛主题，共同研讨直升机行业和通航产业在“军民融合、一带一路”的时代背景下的发展趋势和广阔前景，以及如何在军民融合国家战略和“一带一路”建设过程中发挥重要作用，共享发展的成果。

我国紧急医疗救援直升机市场需求日益旺盛 Air Ambulance Takes Off in China

Demand for air ambulance services is fueling a boom in helicopter sales into China.

It might be a boost, though it's not yet the helicopter boom everyone is expecting, says Leonardo Helicopters. But Bell Helicopter disagrees: "Yes, it's the beginning of the boom. It's coming."

Manufacturers are holding commitments from Chinese customers for more than 500 helicopters for delivery within the next 10 years, many for emergency medical services.



Leonardo Helicopters is supplying rotorcraft for the China's first nationwide air ambulance service, with 25 AW119Kx types already delivered.

Air Ambulance helicopters are at the forefront at this year's China Helicopter Exposition.

近年来，我国对紧急医疗救援直升机的巨大需求推动了直升机在中国的销售热潮。对此，莱昂纳多直升机表示：尽管巨大的需求推动了直升机市场的发展，但目前距离真正的直升机市场大繁荣还有很远。相反，贝尔直升机则表示直升机市场的繁荣时代已经来临。据预测，未来10年内将有500多架直升机交付中国，其中紧急医疗救援直升机占很大一部分，因此各大直升机制造商都在跃跃欲试，试图分得一杯羹。

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ShowNews is published at China Helicopter Exposition
by China Aviation Publishing & Media Co. Ltd.and Penton
Media Inc.

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Printing & Distribution Managed by:
She Miao, Yu Sheng

Printed in China by:
China(Tian Jin) Railway Materials Printing Co. Ltd.

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Army Embraces China Helicopter Expo 陆军首次以军种参加直博会



The Chinese military is making its debut at this year's China Helicopter Exposition a host of the show, an upgrade from its previous status as an exhibitor. This much greater—and officially endorsed—involvement allows the show to bill itself as “the only helicopter show in China approved by the Government.”

Hosting the show with the Land Aviation Department of

the People's Liberation Army are the Tianjin People's Government, and Aviation Industry Corp. of China (AVIC), whose Avicopter helicopter business is based In Tianjin.

The Expo had already become the world's second largest professional helicopter show, and the only one with a flying display program.

Stars of this year's flying display will again be the PLA Army's Feiling helicopter demonstration team, who perform an awe-inspiring aerial ballet with six WZ10 attack helicopters. The display will also feature flying by Avicopter's entire product line, firefighting demonstrations by an AC313, and a simulated rescue by a Bell 429 air ambulance operated by Beijing Huabin Star General Aviation Co.

The organizers anticipate 10% more exhibitors than in the 2015 event from 22 countries and regions, 25,000 trade visitors and 98 helicopters and drones including 26 in the flying display.

第四届中国天津国际直升机博览会是陆军领导机构成立后，陆军首次与地方政府、军工集团共同举办的一项国际性展会。

本届直博会军用直升机的参展品种较往届有所增加，涵盖武装、运输、勤务三个系列，配套展示了机载武器弹药、专用保障装备和勤务装备，首次展示陆军地面主战装备和陆航无人机系统，增加了室内展馆的模拟飞行体验区，参展形式包括直升机飞行表演、室外静态展示、室内多

媒体展等。

飞行表演主要展示国产直升机装备良好的操控性和先进的技战术性能；室外静态展主要展示陆军各兵种的现役主战装备，包括地面突击、空中突击、火力打击、防空反导、侦察指控等装备；室内多媒体展主要通过图片、视频等形式，在展示陆军装备建设成果的同时，展现陆军光荣传统和优良作风。





Avicopter Looks to the Future

中国直升机产业砥砺奋进的五年



Qu Jingwen, Chairman of AVICOPTER.

Avicopter is steadily building a customer base and a reputation in China for its current civil helicopters as it strives to bring a next-generation product line to market.

近几年来国际军事冲突频繁爆发，局势异常严峻。航空工业直升机公司作为国家的军工企业，首要职责就是完成军机领域的全产业链发展。与此同时，国内民用直升机领域也迎来了高速发展。

2012年以来，航空工业直升机在适应复杂多变形势、积极应对行业竞争、全面完成科研生产任务、保障经济稳定运行，以及全力推进直升机产业转型升级等方面都取得丰硕成果。

在军用直升机方面，实现“10机定型”、“18机鉴定”、“17机首飞”，基本形成了“二代为主体”、“三代为骨干”的航空武器装备体系，并向“第四代”迈进。直8/AC313直升机正式列装森林武警部队，在“国际军事比赛-2017”“航空飞镖”竞赛当中，直10K机

It now claims a 10% share of China's domestic market for turbine-engine helicopters, with some 40 rotorcraft in service. Meanwhile it is working toward certification of the top-of-the-line 16-passenger AC352 version of the jointly-developed Airbus Helicopter H175, for which it builds the airframes for both companies. It is modernizing the four-ton AC312 series which traces its origins to license production of the Aerospatiale Dauphin, and it is working on a new light twin, the AC322.

The Tianjin-based company's current products are the AC311,

AC312, the three-engine AC313, and the Y-12 fixed-wing utility aircraft. In the last five years it has signed orders for 43 civil helicopters, of which it has delivered 42, and 40 civil aircraft.

Avicopter's activities in general aviation continue to expand, with revenues from aerial forest protection, marine monitoring, aerial mineral prospecting and aerial photography, artificial weather modification and other business reaching nearly 1 billion yuan. Today it holds a 30% market share in aerial forest protection.

In military helicopters,

Avicopter says the last five years have seen the finalizing of design of 10 helicopters; 18 versions have been certified, and the maiden flights of 17 achieved.

Third-generation helicopters are in service and fourth-generation helicopters are on the way, Avicopter says, adding that the Z-10 attack helicopter has to be improved continuously and the Z-19 needs to win more exports.

The company adds that its production capacity is now 150 aircraft a year, and its Tianjin facility has two production lines that can turn out 70 a year AC312, AC301 and AC311 civil helicopters.

组获得武装直升机组第一名。

在军用直升机保障方面，2015年阅兵日上，公司军用直升机主力阵容悉数亮相，并组成“70”字样代表抗战胜利70周年，受阅直升机总数达120架；而在今年的建军90周年阅兵式上，17架直19组成“八一”标志和24架直升机（11架直10、13架直19）组成“90”字样来纪念建军节，之后由多架直10、直8等直升机协同进行的演习任务顺利完成。

在民用直升机方面，五年来也取得了多项重大成就，AC系列民用直升机国内涡轴直升机新增市场的占有率达10%。五年间，公司累计签署民机订单95架，其中直升机43架。累计实现民机交付83架，其中直升机42架。

在通航运营方面，公司平均年飞行小时位

居全国同行业前列，其航空护林、海洋监测、航空探矿和摄影、人工影响天气等业务总收入近10亿元。其中公司在航空护林市场占有率达30%，在飞行培训领域中成功培训各类飞行员410名，完成警航办39名学员培训的项目。

在科研与生产方面，公司科研突破多项关键技术，实现了直升机复合材料100%国产化，研发水平大幅提升，整机生产能力从“十一五”初的年产不到50架提升至目前的年产150架。

这五年的发展经验表明，航空工业直升机公司必须坚决贯彻集团公司战略，明确企业基于市场经济条件下的生存发展之道，民机业务必须得到大力发展，直升机板块的整体作用必须得到充分发挥，直升机公司才能最终成为具有较强核心竞争力的现代直升机制造企业。

China's Helicopter Boom Gets Underway

中国直升机市场正在扩大

Don't be surprised if there are no big orders at this year's show. They have already been placed.

Airbus Helicopters, Bell Helicopter and Leonardo Helicopters are together sitting on orders and commitments for more than 500 aircraft to be delivered to Chinese customers over the next 10 years. That's 50 helicopters a year already booked compared to China's potential to absorb at least 100 helicopters a year, according to Airbus Helicopters' Vincent Dufour, vice president-commercial for China.

China has now become Airbus Helicopters' single largest market, knocking the U.S. from the No.1 position, he notes.

The orders and commitments are:

- Airbus Helicopters' sale to a Chinese consortium of 100 twin-engine H135 helicopters over 10 years that will be assembled in China in Qingdao.

- A commitment from CM International Financial Leasing Corp., part of China Minsheng Investment, for 100 single-engine Airbus Helicopter H125 Ecureuil and H130 single-engine helicopters under a 100-aircraft deal signed at the 2015 China Heli Expo. Some 20 have been delivered.

- Bell Helicopter and Shaanxi Aviation Industry Development Co. Ltd., a subsidiary of Shaanxi Energy Group, and Xi'an Helicopter Company Ltd., agreed last November to the purchase of 100 Bell 407GXPs over five

years for air ambulance, law enforcement and other missions, and to consider setting up a final assembly line in China.

- Bell Helicopter has publicly acknowledged commitments for more than 75 of its Bell 505 JetRanger X to Chinese customers, including 60 to Reignwood Investment, Ltd. The first delivery to China is expected early next year.

- Deals by Leonardo Helicopters with its China distributor, Sino-US Intercontinental of Shanghai, for 80 helicopters of all types. Leonardo says it has sold 180 helicopters to Chinese customers; some 47 were active on the civil register at the end of 2016 according to Hong Kong consultants Asian Sky Group (**Hall 2, Booth A803**).

- Enstrom Helicopter's owner Chongqing General Aviation won orders in June for 10 four-passenger turbine-powered 480B helicopters for a customer in Inner Mongolia, and for three 480Bs for a low-altitude tourism company in Sichuan.

China's civil helicopter fleet has been



China's skies will be filled with helicopters when the boom takes off.

growing at 15-20% a year and is expected to continue that path. Mainland China had a fleet of 492 turbine helicopters at the end of 2016, and Greater China 540, Asian Sky Group reported in its annual survey.

Light piston-engined helicopters are extremely popular, with about 380 in service, according to the Website Rotorspot. Some 300 of these are Robinson R22 and R44s. **-John Morris**

空客直升机、贝尔直升机和莱昂纳多直升机公司已拥有500多架直升机的确认和意向订单，将在未来十年内将向中国客户交付。根据空客直升机公司中国商业副总裁Vincent Dufour的说法，中国一年订购了50架，而中国每年可吸纳至少100架直升机订单。

中国现在已经超越美国，成为空客直升机公司最大的单一市场。

确认和意向订单如下：

- 空客直升机公司将在今后十多年来在青岛组装并向中国客户出售100架双发H135直升机。

- 中国民生银行旗下的CM国际金融租赁公司在2015年中国直升机博览会上与空客直升机公司签署了100架H125和H130单发直升机的意向订单。约20架直升机已经交付。

- 贝尔直升机公司和陕西能源集团下属的陕西航空工业发展有限公司以及西安直升机有限公司于去年11月达成购买协议，在5年内购买了100架贝尔407GXP直升机，用于空中救护、执法等任务并考虑在中国设立最终装配线。

- 贝尔直升机公司已公开宣布多位中国客户签署了75架贝尔505

JetRanger X直升机的意向订单，其中包括华彬集团的60架。预计第一架直升机在明年年初交付中国。

- 莱昂纳多直升机公司与其中国经销商上海中美洲际航空公司共同出售了80架各类直升机。莱昂纳多表示已向中国客户出售了180架直升机；据亚翔集团的报告，截至2016年年底，还有47架莱昂纳多直升机在中国民航局注册在役。

- 恩斯特罗姆直升机所有者重庆通用航空公司在今年6月从一位内蒙古客户那里获得了10架四座级涡轮动力的480B直升机订单，四川省

的一家低空旅游公司则订购了3架480B直升机。

中国民用直升机机队每年以15%~20%的速度增长，预计将继续保持这一势头。根据亚翔集团的年度调查报告，中国大陆在2016年年底拥有492架涡轮动力直升机，在大中华区这一数字为540架。

根据Rotorspot网站，轻型活塞式发动机直升机非常受欢迎，约380架直升机在服役中，其中约300架是罗宾逊R22和R44直升机。

Air Ambulance Sales Boost Leonardo in China

空中医疗提升莱昂纳多在华销售业绩

The launch of China's first nationwide air ambulance service by Leonardo Helicopters' Shanghai-based partner will boost sales of the Italian manufacturer partner for the next several years.

Shanghai Kingwing General Aviation Co. has taken delivery of 25 air ambulance AW119Kx made by Leonardo Helicopters and is working with hospitals and insurance companies to bring them into operation. The vision is to have two or three emergency medical services (EMS) helicopters in every province. Kingwing initially signed with the Shanghai Emergency Medical Centre to develop EMS in eastern China, and a separate agreement with Shanghai Rui Jin Hospital to provide EMS. So far there is no government money involved.

"If you look at the U.S. and European markets, there is EMS covering the whole area," but in China EMS is still in its infancy, says Leonardo Helicopters VP for China Stefano Zalonis. "The potential is huge."

Kingwing owns Sino-US Intercontinental, the exclusive distributor for Leonardo in China, Hong Kong and Macau, which has placed orders for nearly 100 AW119Kx, GrandNew, AW109 Trekker, AW169, AW139 and AW189 helicopters, many of which are for its China Helicopter Air Ambulance service. Leonardo has to date sold nearly 200 helicopters to Chinese customers for all uses, including law enforcement. Its fleet has grown to 73 rotorcraft, with a record 20 delivered last year and 17 due by the end of 2017.

Included in those sales are 20 EMS-equipped, twin-engine AW139s for Kingwing, with the first to be delivered by the end of the year.

To look after the growing fleet, Leonardo and Sino-US plan to increase after-sales service with additional local training for pilots and technicians, and with the addition of a completions center. They recently opened a major warehouse for spare parts in Shanghai Free Trade Zone.

While EMS is driving sales, Leonardo is very active in law enforcement and VIP helicopters, which are also important markets, says Zalonis. Nonetheless, the EMS industry will require hundreds of helicopters over time, he adds.

Is this the start of the long-awaited helicopter boom in China? Zalonis doesn't think so - not yet. "China has consistently been taking about 100 helicopters a year for the last three years. It's not yet the boom that everyone expects," he says.

In other news, Leonardo anticipates certification next month by the Civil Aviation Authority of China (CAAC) of its AW189 twin-engine helicopter, of which five are on order for China, and next year of the AW169, of which six have been sold in-country.

With the growing deliveries into China, Leonardo and its partners are considering final assembly in country, Zalonis says. Leonardo tried it once before as AgustaWestland, when in 2004 it partnered with Jiangxi Changhe Aviation Industries Company to produce the AW109 Power as the CAH109. Fewer than 10 were produced before market and business conditions changed.

-John Morris



The future arrives: An air ambulance AW119Kx on show here.

莱昂纳多直升机公司的上海合作伙伴发起了中国首个全国性空中医疗服务, 这将显著增强这家意大利制造商未来数年在华的销售业绩。

上海金汇通用航空公司已经引入了25架AW119K医疗直升机, 并与多家医院和保险公司一道将这些直升机投入使用。该公司的愿景是在每个省部署两或三架紧急医疗服务(EMS)直升机。金汇通航公司最初与上海紧急医疗中心签约, 在中国华东地区发展EMS, 并与上海瑞金医院签署一份独立协议为其提供EMS。到目前为止, 政府还没有投入一分钱。

莱昂纳多直升机公司中国区副总裁Stefano Zalonis表示: "如果看一下美国和欧洲市场, 你就会发现那里有覆盖全国的EMS。但是在中国, EMS还是一个新生事物, 因此中国市场有巨大的增长潜力。"

莱昂纳多直升机公司在大陆、香港和澳门的独家经销商——中美洲际直升机公司由金汇通航所有。中美洲际已经售出近100架AW119K、AW109SP GrandNew、AW109 Trekker、AW169、AW139和AW189直升机, 其中许多直升机用于中国的直升机空中医疗服务。截至目前, 莱昂纳多直升机公司已经向中国客户售出了近200架直升机, 用于包括空中执法在内的各种

用途。目前, 中国的莱昂纳多直升机机队规模已经增长到73架, 仅去年一年就交付了创纪录的20架直升机, 今年预计会交付17架直升机。

莱昂纳多直升机公司的订单中包括金汇通航订购的20架配有EMS设备的AW139直升机, 首架直升机将于今年年底交付。

为了支持不断增长的机队, 莱昂纳多直升机公司与中美洲际计划加强售后服务, 为飞行员和技术人员提供更多的本地培训, 并建立一家完工中心。两家公司最近在上海自贸区开设了一间备件仓库。

直升机在空中执法和VIP直升机领域也很活跃, 也是莱昂纳多重要的市场。而EMS产业会有数百架直升机的需求。

莱昂纳多直升机预计AW189双发直升机下个月能取得中国民航局(CAAC)的适航证, 中国订购了5架这款机型; 明年AW169将取证, 该机在中国售出了6架。

随着中国市场销量的增长, 莱昂纳多直升机公司及其合作伙伴正在考虑在中国建立总装线。在莱昂纳多直升机公司还叫阿古斯特韦斯特兰公司时, 它曾经在2004年与中航工业昌河飞机工业公司合作生产名为CAH109的AW109 Power直升机。该机在市场和商业条件变化之前仅生产了不到10架。



驾驶舱显示系统 满足独特的直升机要求

无论您的飞行环境是海上石油平台还是紧急医疗现场，您的直升机机组人员都必须保证在极端的环境下提供安全的运输。我们先进的直升机驾驶舱显示系统提供无与伦比的飞行环境感知能力，即使在最严峻的挑战下，飞行员都可以保持最强的信心安全飞行。

请参观我们在 2017 年中国天津国际直升机博览会 1 号厅 C110 号展位。

旋翼的优势

- › 新一代的玻璃驾驶舱
- › 价格实惠的改装产品
- › 可扩展、灵活的解决方案

China Topples U.S. as No.1 for Airbus Helicopters

中国是空客直升机全球最大市场



Airbus Helicopters believes the H135 will be a popular air ambulance.

目前，亚洲国家的直升机需求日趋增长，其中中国已成为空客直升机全球最大市场。目前空客直升机在大中华地区的机队规模为250架，拥有70家客户，在中国民用及公共服务直升机领域占有40%的市场份额。目前空客直升机

每年的交付量一直在以20%的速度增长。

在谈及对中国直升机市场的看法时，空客直升机中国商务副总裁Vincent Dufour表示，在欧洲，每100万人拥有一架紧急医疗救援(EMS)直升机。在美国，每100万人中有3架EMS直升机。

China has overtaken the U.S. as the world's single largest market for Airbus Helicopters, signaling the beginning of a long-awaited boom in demand in the Asian country.

Orders from China last year were a record, boosted by two major long-term 100+ helicopter deals from investors with a vision for a future in which rotorcraft will play an increasing role in police, firefighting, utility and air ambulance work.

"This is the first time the U.S. has been beaten as our best-selling market. "The Chinese helicopter market has been growing in terms of deliveries by ab," says Airbus Helicopters' Vincent Dufour, vice president-commercial for China out 20% a year, and now it is absorbing 100 new aircraft (from all manufacturers) on a yearly basis."

Airbus Helicopters has nearly

250 civil helicopters in service in Greater China with 70 customers, for a market share approaching 40% of the country's 540-strong fleet of public-use rotorcraft.

Whereas the bulk of deliveries are single-engine helicopters, the latest contracts have seen a growing demand for more-sophisticated light twin-engine aircraft, especially for law enforcement and for the embryonic air ambulance market.

The potential is huge, says Dufour. "In Europe there is one EMS helicopter for every million people. In the U.S. there are three for every million. China has just 30 EMS helicopters and 1.3 billion people."

Airbus Helicopters believes demand from China for all makes of light twin-engine helicopters could total 600 rotorcraft over the next 20 years.

—John Morris

但是中国13亿人只拥有30架EMS直升机。可见，中国直升机市场需求很大。据有关机构预测，未来20年，中国市场大约需要600架轻型双发直升机。

Airbus Helicopters to be Built in China

空客直升机将在中国完成组装

Airbus Helicopters has broken ground on a final assembly line in Qingdao, Shandong Province, under a deal for 100 H135 light twin-engine helicopters to be supplied over 10 years for law enforcement and air ambulance missions. The first should roll out in mid-2019.

The 100-helicopter order was placed last June by a Chinese consortium made up of China Aviation Supplies Holding Company, Qingdao United General Aviation Industrial Development Company and CITIC Offshore Helicopter Co. Ltd.

The assembly line will have a total annual capacity of 18 H135 helicopters, which could be extended for future growth, says Vincent Dufour, Airbus Helicopters' vice president-commercial for China.

Meanwhile Airbus Helicopters has delivered some 20 H125 Ecureuil single-engine helicopters under a 100-aircraft deal signed at the 2015 China Heli Expo with

CM International Financial Leasing Corp., part of China Minsheng Investment.

The then-largest civil helicopter contract in China's history called for 100 H125s equipped



with cargo hooks and H130s in air ambulance configuration to be delivered over the next five years.

—JM

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Bell Helicopter to Triple Fleet in China

贝尔直升机在华规模将扩大三倍

It's the start of China's helicopter boom says Bell Helicopter, which stands to triple its in-country fleet from 115 today to more than 300 over the next few years.

"Yes, it's the beginning of the boom. It's coming," says Jose Jacinto Monge, the company's managing director for China.

Major sales victories for Bell include a contract signed in June for 100 Bell 407GXP light single-engine helicopters for Shaanxi Energy Group and Xi'an Helicopter, to be delivered over the next five years, and 60 of the new Bell 505 JetRanger X for Reignwood Investment with first delivery early next year. In addition, Bell has publicly acknowledged commitments for at least another 505s. Reignwood's order will make that company the largest 505 operator in the world.

The first 407GXP for Shaanxi was delivered last month. Most of those delivered through next year will be in air ambulance configuration, says Monge, and outfitted by a U.S. specialist. Helicopters in the order will also be applied to emergency search, forest

fire control, police enforcement, tourism and public transport, depending on the needs of Shaanxi province.

With large deliveries into China, Bell and its partners could consider final assembly there. "There's a grand plan, and aspirations" says Monge, "but certain steps have to be taken over the next five years, such as developing maintenance, repair and overhaul, services and training. First you crawl, then walk, then run."

Bell Helicopter's fleet in Mainland China at the end of August comprised 52 407s, 43 JetRanger/LongRanger, 15 twin-engine 429s, and five other various types, according to the Rotorspot website. A recent delivery, in May, was of a Bell 429 to Beijing Jinyu General Aviation Co., Ltd. in multi-mission configuration including air ambulance capability.

Here at the show Bell Helicopter is exhibiting a Bell 505 JetRanger X outfitted for emergency medical service, and a Bell 429 in search and rescue configuration. Reignwood is also showing a 429, equipped as an air ambulance. **-John Morris**

Bell Helicopter President and CEO Mitch Snyder joined Xiaoning Yuan, President of Shaanxi Energy Group, during a special signing ceremony in Xi'an, China, last month to mark the delivery of the first of 100 Bell 407GXPs.

贝尔直升机表示，现在是中国直升机热潮的开始，在接下来的几年里，中国的贝尔直升机总量将扩大至现在的3倍，从目前的115架增加至300架以上。

贝尔直升机中国区总经理Jose Jacinto Monge表示：“这只是即将到来的繁荣的开始。”

贝尔直升机主要的销售成果，包括今年6月与西安直升机有限公司和陕西能源集团签订的100架贝尔407GXP轻型直升机合同，它们将在未来5年内交付；以及与华彬投资公司签订的50架贝尔505 JetRanger X直升机合同，明年将开始交付第一批飞机。此外，贝尔直升机已经公开表示了还有其他的贝尔505直升机的订单协议。华彬投资公司的订单将使该公司成为世界上最大的贝尔505直升机运营商。

贝尔直升机已经在今年8月向西安交付了第一架贝尔407GPX直升机。Monge表示，明年交付的大部分直升机将是空中救援配置，并由一位美国专业机构安装。根据陕西省的需要，贝尔407GPX直升

机还将用于紧急搜索、森林防火、警务执法、旅游和公共交通。

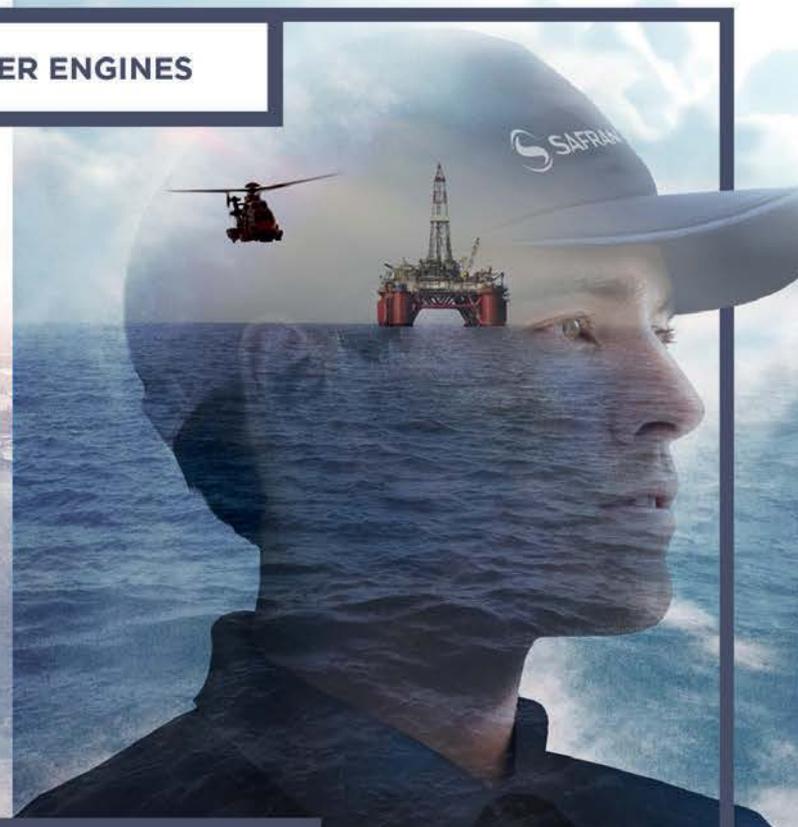
考虑到之后要大批量交付到中国，贝尔直升机与合作伙伴考虑在中国完成最后的装配。Monge说，“我们有一个宏伟的计划和愿望，但是在未来的5年中还有许多步骤需要确定，如开发维护、修理和检查、服务和培训等。首先你要会爬，然后会走，最后才是跑。”

根据Rotorspot网站，截至今年8月底，贝尔在中国大陆的直升机包括52架贝尔407，43架JetRanger/LongRanger，15架双发的贝尔429，以及其他5种直升机。最近的一次交付是今年5月交付给北京金宇通用航空有限公司的贝尔429，这架直升机采用了包括空中救护能力内的在多任务配置。

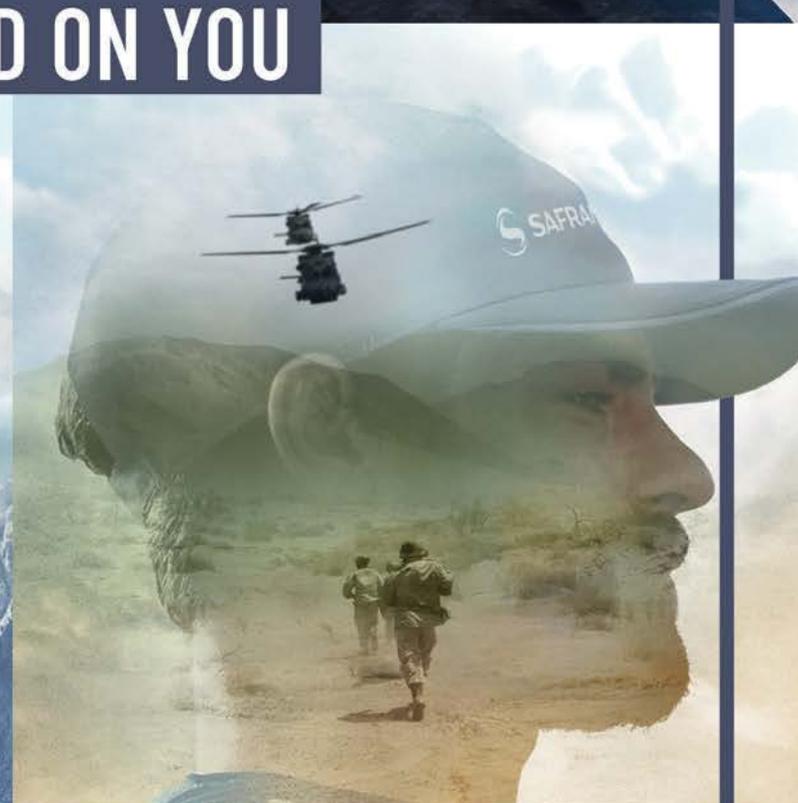
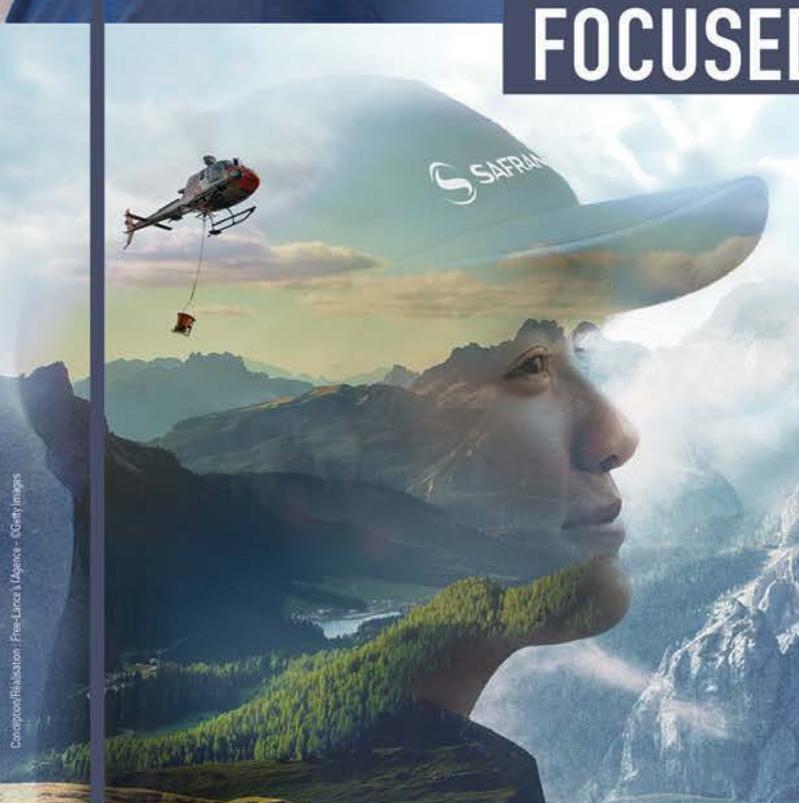
贝尔直升机这次展出了一架适用于紧急医疗服务的贝尔505 JetRanger X直升机，一架搜索与救援配置的贝尔429直升机。华彬投资公司还展示了一架装备空中医疗设备的贝尔429直升机。



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 **SAFRAN**

Russian Ansat Breaks Into China Market

俄罗斯安萨特直升机打入中国市场



The Mi-171A2 is a great improvement on older versions.



China is the first export customer for the Ansat.

Russian Helicopters' Kazan Ansat rotorcraft has broken into the Chinese market with the sale of two of the light twins to air ambulance operator Beijing 999, part of Beijing Red Cross Emergency Rescue Center. The order was signed in June.

The Chinese company will outfit the Ansats to air ambulance configuration. They will join two Airbus Helicopters H135s and an H145 in the rescue fleet.

Russian Helicopters, the umbrella for Russia's helicopter industry, will also supply Beijing 999 with an Mi-171 utility helicopter that will be equipped as a flying hospital. It will also be available for VIP transportation.

China operates many Mi-8 and Mi-17 helicopters, especially in government and

military service, and there are currently 13 on the civil register, according to website Rotorspot.

Russian Helicopters believes there is greater potential for that rotorcraft family, especially as updated versions are introduced, and the company has signed a distribution agreement with United Helicopters International Group Limited, which is now an official dealer for Russian helicopters in the Chinese, Malaysian, and Australian markets. This move, "a huge step" says Russian Helicopters, appoints the first distributor for its civilian helicopters.

Earlier this year Russia potentially increased its involvement in China in a municipal plan to assemble and manufacture Russian-made aircraft in Ganzhou, Jianxi, as part of a RMB 6.25 billion development in the city's

economic development zone. The aircraft would be Mi-171E helicopters, and Sukhoi SS100 regional jets. The city plan also calls for setting up an airline (Ganzhou Airlines) and a flight academy that would enroll 10,000 students within five years.

Meanwhile Russian Helicopters has certified its latest version of the Mi-171, opening the door for deliveries to commercial customers of the Mi-171A2. This radical modernization reduces operating costs, improves performance and brings the helicopter into line with current airworthiness standards. It features VK-2500PS-03 engines with Fadec, a digital cockpit allowing two-crew operation, and a new rotor system with all-composite blades of improved aerodynamic design. **—John Morris**

随着两架轻型双发救护直升机出售给北京红十字会999紧急救援中心，俄罗斯直升机公司喀山工厂生产的安萨特旋翼机进入中国市场。这笔订单于今年6月签署。

中方企业将为两架安萨特直升机安装空中救护设备，它们将加入由两架空客H135和一架H145直升机组成的救援机队。

俄罗斯直升机公司还将向北京999提供一架米-171通用直升机，该机经过改装可作为空中医院，也可用于VIP运输。

根据Rotorspot网站，中国运营着许多米-8和米-17型直升机，特别是在政府和军队中服役，目前在中国注册的民用型俄罗斯直升机有13架。

俄罗斯直升机公司认为，安萨特旋翼机系列的市场潜力更大，特别是升级型号出厂后。该公司已经与联合直升机国际集团有限公司签署了分销协议，后者现在是俄罗斯直升机公司在中国、马来西亚和澳大利亚市场的正式经销商。这是俄罗斯直升机公司为这款民用直升机

指定的首个经销商，公司认为这一举措是迈出了巨大的一步。

今年早些时候，俄罗斯可能会加大其在中国的投入。根据一份市政府的经济发展计划，俄罗斯将在江西省赣州市经济开发区组装和生产俄制飞机，该项目是经济开发区62.5亿元人民币投资计划之一。生产的机型包括米-171E直升机和苏霍伊SS100支线喷气式飞机。赣州市的计划还要求设立一家航空公司（赣州航空）和一所飞行学院，后者将在5年内招收10000名学员。

同时，俄罗斯直升机公司已经取得了米-171直升机最新型号的适航证，为米-171A2交付客户打开了大门。米-171A2配置带有FADEC的VK-2500PS-03发动机、一个双人机组操作的数字驾驶舱和一个新旋翼系统，旋翼系统上有经过空气动力学设计改进的全复合材料叶片。这些措施降低了运营成本，提高了性能，使直升机符合现行适航标准。

Safran Helps WZ16 Engine Toward Certification

赛峰助力涡轴16发动机取证

China's WZ16 turboshaft engine for the 7-ton, 16-passenger Avicopter AC352 super-medium helicopter is on track toward certification at the end of 2018, according to the French joint venture partner in the program.

Turbomeca, now known as Safran Helicopter Engines, agreed in 2006 to jointly develop the 1,700 shp powerplant with AVIC's Dongan Engine Manufacturing Company (also known as the Harbin Engine Factory) for the AC352, itself jointly developed with then-Eurocopter (now Airbus Helicopters).

The engine was ground-run for the first time

in 2013, and first flew in the AC352 at the end of 2016. Two assembly lines will produce the engine, one in China and the other in France where it is called the Ardiden 3C. Certification of the Ardiden 3C by the European Aviation Safety Agency (EASA) is expected at the end of this year.

"The WZ16 is a Chinese engine, produced in China," says Hervé Pasbecq, general manager of Safran Engines China. "The share between the partners is 50-50, with parts manufactured in both China and France. The arrangement is comparable to Safran's joint venture with GE on the CFM56 and Leap

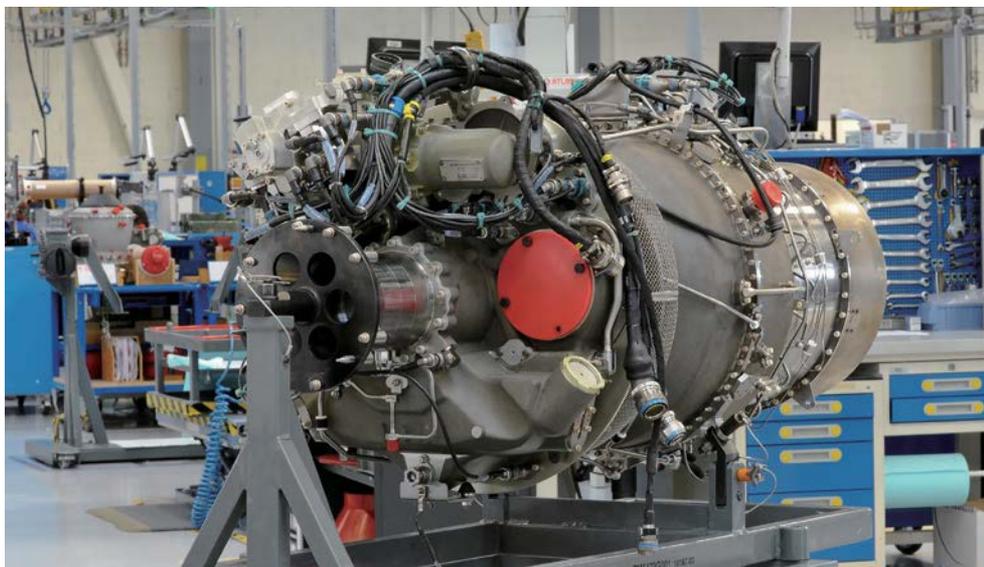
airliner engines, where both partners have assembly lines."

Progress toward EASA certification is being shared with Dongan and China's Civil Aviation Authority (CAAC), which has never before qualified such a bi-national engine. An extra challenge, says Pasbecq, was to maintain the continuity of the program as Dongan was split from AVIC and absorbed into China's new independent aero-engine company, Aero Engine Corp. of China (AECC), along with all of AVIC's other engine companies.

The design of the WZ16/Ardiden 3C ensures that the engine will be very reliable and cost-effective, particularly in terms of maintenance and cost-of-ownership, says Pasbecq. It offers 10% lower fuel consumption than other engines in its class, and maintenance will be simplified by a 5,000 hour Time Between Overhaul (TBO) limit. "Because it is designed to perform in the toughest environments with the lowest operating costs, the WZ16 is a perfect match for the AC352. This engine will bring more power, more range and more mission capabilities to this new helicopter," he notes.

Safran is seeking a first application for the Ardiden 3C, and has suggested that it could power Airbus Helicopters' version of the AC352, the H175. That helicopter is currently produced with Pratt & Whitney Canada PT6C-67E engines.

—John Morris



The WZ16/Ardiden 3C is claimed to be the most efficient in its class.

根据合作的法国方面的消息，为7吨级、16座的AC352超级中型直升机提供动力的涡轴16涡轴发动机目前正在取证阶段，预计会在2018年年底正式取得认证。

透博梅卡公司现在称为赛峰直升机发动机公司，它于2006年同意与当时的中航工业东安发动机制造公司（也称为哈尔滨发动机制造厂）共同为AC352直升机研发了1700马力动力装置，AC352直升机则是中航直升机公司与当时的欧洲直升机公司（现为空中客车直升机）共同开发。

涡轴16发动机在2013年首次在地面运行，并于2016年年底安装在AC352上首飞。两条装配线将生产发动机，一个在中国，另一个在法国，法国生产的发动机称为阿蒂丹3C。欧洲航

空安全局（EASA）的阿蒂丹 3C认证预计在今年年底完成。

赛峰直升机发动机公司中国区总经理Hervé Pasbecq说：“涡轴16是中国生产的国产发动机。合作伙伴之间的份额是50-50，零件在中国和法国制造。该安排与赛峰集团与GE公司在CFM56和LEAP商用发动机上的合资相当，合作双方都有装配线。”

赛峰与东安和中国民航局（CAAC）分享EASA认证方面的进展，CAAC之前从未给两个国家合作研制的发动机认证过。Pasbecq表示，由于东安与中航工业拆分后并入中国最新成立的中国航空发动机集团（AECC），因此继续维持与东安的合作就成了一项额外的挑战。

“涡轴16/阿蒂丹3C”的设计确保了发动机非常可靠，性价比高，特别是在维护和持有成本方面。与其他同类发动机相比，其燃油消耗降低了10%，大修间隔时间（TBO）为5000小时，简化了维修工作。Pasbecq说：“因为它的设计出发点就是在最恶劣的环境中保持最低的运行成本，所以涡轴16是AC352的完美搭档。这款发动机将为这架新型直升机带来更强的动力，更远的航程和更多的任务能力。”

赛峰集团正在为阿蒂丹3C寻求第一个装机对象，并建议它可以为客空直升机公司版本的AC352即H175直升机提供动力。H175直升机目前使用的是加拿大普惠公司的PT6C-67E发动机。

EMS Helicopters Begin to Take Off in China

EMS直升机在中国开始起飞

Demand for emergency medical services in China is about to spawn a whole new industry for specially-equipped helicopters.

Experts point to the pioneering and highly visible medevac operation by Beijing 999 with two fully-equipped Airbus Helicopters as the key that will unlock similar operations across the country.

Two years ago this pair of H135 air ambulance helicopters were the only ones of their kind in China. Today, maybe as many as 30 helicopters are providing medical transportation services but some are multi-mission and few are equipped so extensively for emergencies or rescue operations as Beijing 999's. In comparison, nearly 1,000 medevac helicopters are active in the U.S.

In China, that's all about to change: In April Shandong became the first Chinese Province to launch a comprehensive road traffic accident and emergency rescue helicopter service system, with HEMS999 operating the first of seven dedicated Airbus H130 helicopters across six support bases in six major cities. And Kingwing General Aviation, the parent of Leonardo Helicopters' China distributor Sino-US Intercontinental Helicopter Investment, last summer launched in Shanghai what



Beijing 999 has been operating two H135s.

it believes to be the country's largest EMS network, with the first of 55 Leonardo helicopters it has ordered for that role.

Beijing 999 recently announced it is expanding its fleet, adding an Airbus Helicopter H145, and two Ansat light helicopters and a hospital-equipped Mi-171 from Russian Helicopters.

Building an EMS industry will take more than just helicopters, and will involve a lot of experimentation to build a stable business

base. Nobody yet knows the best business plan, says Stefano Zalonis, Leonardo Helicopters' head of region for sales in China, but it will evolve over time as the demand for EMS services will only grow stronger.

"Everyone now is looking at EMS even if the business model hasn't been finalized," says Vincent Dufour, Airbus Helicopters' vice president-commercial for China and Mongolia. "The potential is huge."

—John Morris



The sophisticated ambulance interior of Beijing 999's H135.

中国的紧急医疗服务 (EMS) 需求即将催生新的特种装备直升机产业形成。

专家指出,北京999急救中心的两架装备齐全的空客直升机是其开启国内开创性及效果显著的直升机医疗行动的关键。

两年前,这两架H135空中医疗直升机是国内唯一的此类机型,而如今可能有多达30架直升机正在提供医疗运输服务,但这些直升机多数是多功能直升机,很少有像北京999急救中心这样的装备了大量用于紧急情况或救援行动装备的直升机。

4月,山东成为中国第一个启用综合性道路交通事故和应急救援直升机服务体系的省份,EMS999首次在6个主要城市的6个支援基地使用7架空客H130直升机。而去年夏天,莱昂纳多直升机公司中国经销商与中美洲际直升机投资有限公司的母公司金

汇通用航空公司,在上海推出了据称是国内最大的EMS网络,55架莱昂纳多直升机将率先承担该角色。

北京999急救中心最近宣布正在扩建机队,增加1架空客H145直升机,两架安萨特 (Ansat) 轻型直升机和1架配备有医疗设备的俄罗斯米-171直升机。

构建EMS行业将不仅仅是直升机,而且还将进行大量的尝试以建立一个稳定的业务基础。没有人知道什么是最好的商业计划,莱昂纳多直升机公司的中国销售区域主管Stefano Zalonis说,随着时间的推移,EMS服务的需求将会越来越大。

空客直升机公司中国和蒙古地区的商业副总裁文森特·杜福尔 (Vincent Dufour) 表示:“现在每个人都在关注EMS,即使商业模式尚不确定,但其潜力是巨大的。”

Spectrum Aeromed Offers Expertise in China

Spectrum Aeromed在中国提供专业的服务

Making room for a stretcher doesn't turn a VIP helicopter into an emergency medical aircraft. "There's much more to it than that," says Thomas Redder, international sales vice president for air ambulance specialist Spectrum Aeromed.

He's been studying the potential in China for five years, and says the EMS industry is about to take off.

U.S.-based Spectrum Aeromed plans to be part of it. The company, which has been designing, installing and certifying air ambulance interiors in fixed wing aircraft and helicopters for 25 years, has won its first two orders in China, and is exhibiting here at China Helicopter Expo for the first time (Hall 1, Booth C609).

The company offers turnkey solutions, working with customers to design medical interiors (for example, for intensive care), source the equipment, and then integrate it so that it all works together in a confined space. Its design engineers ensure certification with a country's airworthiness authorities.

Here at the show Spectrum Aeromed is demonstrating one of its unique products: a pivot system that enables a stretcher to be loaded into a confined cabin, or to be moved in a larger cabin to place the patient in the optimum position for medical. **-John Morris**



Spectrum Aeromed's pivot enables the stretcher to be easily loaded.

专注航空医疗Spectrum Aeromed公司国际销售副总裁Thomas Redder说, 仅为担架腾出空间并不能把VIP直升机变成紧急医疗直升机, “还有许多其他的事情要做”。Redder研究了5年中国市场, 认为中国的EMS行业在即将起飞。

美国的Spectrum Aeromed计划投身其中。该公司从事固定翼飞机和直升机医疗设备舱的设计、安装和取证业务长达25年之久, 并已在中国获得了头两笔订单。公司提供交钥匙解决方案,

与客户合作设计客舱医疗设备(例如, 用于重症监护的设备), 并对所有设备进行集成, 以便它们能在一个有限的空间内一起工作, 同时确保获得国家适航机构的认证。

首次参加中国直升机博览会的Spectrum Aeromed展示了其独特的产品之一: 一个枢轴系统, 可以将担架装载到有限的客舱内, 或者在较大的客舱中移动, 将患者置于最佳治疗位置。

AC311 for Emergency Medical Service

AC311直升机加装医疗救援设备取得STC证

An air ambulance interior has been designed for the AC311 helicopter by its manufacturer, AVIC Changhe Aircraft Industry Group. Equipment includes medical stretchers, oxygen supply devices and medical equipment racks.

A supplemental type certificate was awarded in May, opening up the emergency medical service market to the light, single-engine helicopter.



AC311直升机加装医疗救援设备项目由航空工业昌飞公司完成设计、制造和试验。此项目主要加装了医疗救援担架、供氧装置和医疗设备安装架等设备。

今年5月份, AC311直升机获得中国民航华东管理局颁发的补充型号合格证(STC)。这是昌飞取得的第一个STC, 也是华东管理局颁发的第一个国产直升机STC。该STC用于认可AC311直升机加装医疗救援设备改装项目, 标志着该改装项目正式通过民航部门审查, 也标志着AC311加入到空中医疗救援服务行业。



航空工业直升机
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Boosting General Aviation

Changhe Tests AC311A Sprayer AC311A加装农林喷洒设备首飞成功

A spray equipped AC311A should be certified by the end of the year, says Changhe Aircraft Industry Corporation, which began flight tests last month.

The quick-install spray equipment comprises a 500 kg tank and high pressure pump; the 9-meter mounting rod carries 24 adjustable sprinklers that can deliver spray widths of 13-18 meters.

8月14日，加装农林喷洒设备的AC311A型直升机在航空工业昌飞吕蒙机场首飞成功，并在10m飞行高度完成了面积达24万m²的喷洒作业。

据悉，AC311A直升机加装的农林喷洒设备是在直升机腹部加装复合材料药箱，通过高压泵进行药箱药液的抽取和喷幅（喷洒宽度）调节。进行加装的农林喷洒设备满载药量500kg，喷杆长度9m，喷杆上有可调节喷洒状态的24个喷头，喷头设有3档调节，喷幅达到13~18m。整套农林喷洒设备可快速拆装。

目前，AC311A直升机加装农林喷洒设备项目正在进行适航取证，计划今年年底完成。



AC312E Completes Hot-and-High Tests AC312E直升机完成多种试飞工作

The nine-passenger, twin-engine AC312E helicopter developed from the AC312A by AVIC Hafei Aviation Industry Group (HAIG) for performance in hot-and-high conditions has completed flight tests on China's plateau.

The helicopter logged 63 flight hours and 63 cycles to determine its envelope at altitude as it heads towards certification by the Civil Aviation Authority of China "in the near future." The next tests will be for extreme cold weather performance.

The AC312E is optimized for altitude and reduced operating costs. With a maximum takeoff weight of 4,250 kg, it can carry nine passengers or 600 kg of cargo. Power is from two 1,072 shp (one engine inoperative) Safran Arriel 2Es; avionics are by Rockwell Collins with ProLine 21, RTA-4112 multi-scan weather radar RTA-4112 and TTR-4100 TCAS II traffic monitoring system. HAIG reports an order book for more than 80 AC312Es.

8月2日，由航空工业哈飞研制的AC312E直升机完成平原性能试飞。这标志着AC312E直升机平原性能得到全面验证，适航验证试飞取得阶段性成果。

AC312E自6月27日开始平原性能试飞，此次试飞中AC312E共飞行66架次，飞行时数达63小时，验证了悬停性能、爬升性能、平飞性能，A



类、B类起飞着陆性能，风速包线、极限高度速度包线等平原性能。

截至目前，AC312E直升机已完成了调整试飞、发动机科目的适航试飞、部分航电系统的适航试飞、飞行性能平原试飞及高温试飞，正在进行高原试飞。后续该机将进行高寒试飞，而且已开展生产许可审定符合性审查工作，确定了生产许可审定计划，为未来投入市场奠定坚实基础。

CITIC Offshore Will Establish Training Company 中信海直将成立通航技术培训公司

Citic Offshore Helicopter Co., Ltd. said it plans to co-found a professional general aviation technical training company, Offshore Helicopter (Beijing) General Aviation Training Co., Ltd., with the Civil Aviation Management Institute of China.

7月17日，中信海洋直升机股份有限公司发布公告，将与国民航管理干部学院共同设立海直（北京）通航技术培训有限公司。该公司注册资本达400万元人民币，未来将开展通航市场专业技术培训业务。

AC352 Flight Tests Bring Certification Closer 先进超中型直升机AC352

The advanced medium-sized multi-purpose AC352 made its successful maiden flight on December 20, 2016 in Harbin. The helicopter is jointly developed by Avicopter's Harbin and Airbus Helicopter. The European version, the H175 is already entering service with Pratt & Whitney engines; the Chinese version is approaching certification next year powered by the WZ16 turboshaft.

The AC352 is on show here at the China Helicopter Exposition, along with a demonstration of a training simulator and an integrated training program.

Launch customer for the 14-16-passenger AC352 is COHC, the maritime helicopter business branch of CITIC, it was announced at the show two years ago.

由航空工业直升机与空中客车直升机公司联合研制的先进超中型多用途直升机AC352于2016年12月20日在哈尔滨成功首飞。首飞成功后，AC352直升机将加快适航取证工作，争取早日投放市场；同时将做好改进改型工作，实现产品的系列化发展，使AC352项目真正达到商业上的成功。

在本届直博会上，AC352除进

行实机展示以外，适用于该机的综合程序训练器也将进行展示。该训练器是一种初级模拟训练设备，由飞行仿真系统、仿真管理系统虚拟航电设备、简易操纵系统、简易视景系统、教员台控制系统及台架结构组成。该设备将主要用于飞行学员进行座舱程序训练和模拟飞行体验，也可用于地勤学员进行座舱维护训练。



Weaponized AV500 Enters Service 新型多用途无人直升机AV500



The unmanned AV500 has been delivered to customers "in small batches" and has so far logged 1,200 hours of flight time, says the AVIC Helicopter Research and Development Institute.

The 500-kg AV500 first flew in 2014, and was qualified in October 2016.

With various payloads of up to 120 kg, AV500 can perform a variety of

tasks: reconnaissance with a selection of sensors, as a relay platform for battlefield communication and command systems, and rapid assault, precision strike, anti-terrorism and drug control tasks when fitted with small laser-guided weapons, machine guns or other weapons.

AV500是航空工业直升机所研制的一种500kg级无人直升机，该机于2014年底成功实现首飞，2016年完成科研试飞、鉴定试飞以及市场推广演示飞行，并于同年10月完成全机技术鉴定，目前已小批交付用户使用，累计飞行时间达1200小时。

该机最大起飞重量450kg，最大任务载荷120kg，通过搭载不同的任务载荷，AV500无人直升机可用于多种任务。例如在携带光电、红外、雷达和信号侦察等任务设备时，可执行战术、战役侦察任务；在可搭载通信中继设备时，可承担战场通信和指挥系统的中继平台作用，可很好的解决多兵种协同作战条件下的超视距数据链传输的问题；而通过加装小型激光制导武器、机枪或其他武器时，该机可执行快速突袭、精确打击、反恐缉毒等任务。

Changhe Hands Over First Sikorsky S-76D Cabin

中国航空工业S-76D合作项目首架机交付



Changhe Aircraft Industries Corp. has delivered the first of an initial five cabin and fuselage structures for Sikorsky's twin-engine S-76D light helicopter. Changhe is a second source for the airframes, which are also made by Aero Vodochody in the Czech Republic. The second will be delivered by the end of this year. Production volume be up to 12 a year depending on demand.

Changhe previously made airframes for the S-76C++. It also manufactures tail units for the Sikorsky S-92.

6月7日，中国航空工业S-76D首架机交付仪式在江西景德镇举行，标志着S-76D项目合作取得了成功。中国航空工业与美国西科斯基公司于2013年签订了关于合作生产S-76D直升机的协议，航空工业昌飞获得了首批5架份订单，并历时4年完成了全机试制生产全过程。根据计划，航空工业昌飞将于今年年末交付第二架S-76D直升机，之后逐步将产能提升至12架/年。

Qinghai Feilong is First User of AC311A

青海飞龙首批AC311A高原型直升机即将投入使用



Qinghai Feilong General Aviation Co., Ltd. received its first two AC311A highland helicopters from AVIC Changhe Aircraft Industries Corp. on July 13, becoming the first operator of the new type. It will use the helicopters for air tours in Zhuo'er Mountain, Qilian, Qinghai. The AC311A is developed for use in hot-and-high and extreme cold conditions from the AC311, and is newly-engined with a single Turbomeca Arriel 2B1A turboshaft. The six-seat AC311A can take off with a load of four passengers at an elevation of 3,200 m and can fly up to 640 km Endurance is 3.9 hrs.

7月13日，青海飞龙通用航空公司顺利从航空工业昌飞接收了首批2架AC311A高原型直升机，成为该机型的首家用户。根据计划，青海飞龙的首架AC311A直升机将用于执飞青海祁连卓尔山空中游览项目。作为一款高原高寒性能优异的轻型民用直升机，AC311A直升机的成功投入运营将可更好地为我国尤其是高原高寒地区提供更加便捷、多样的航空服务。

GDAT Imports its First Ka-32 Helicopter

捷德航空引进其首架卡-32直升机



日前，一架由捷德航空技术有限公司引进的卡-32直升机在宁波口岸登陆，这是宁波口岸迄今进口单价最高的直升机。捷德航空集团创始人、董事长江文全告诉记者，早在今年5月，捷德航空团队就前往国外对此架卡-32直升机进行预检，现在已经在捷德航空位于宁波梅山的易达中心等待交付客户。捷德航空自2012年创立至今，已售出180余架飞机，并覆盖了145部维修、91部通航运营以及经营性租赁等几乎直升机全产业链业务。除上海总部外，捷德航空目前运营宁波和苏州两个基地（易达中心）。同时还在北京、成都、武汉、西安、厦门、广州、昆明等城市设立分支机构，在美国、欧洲两地布点了海外市场。江文全表示，捷德航空下一步将积极布局全国范围内的易达中心，未来几年内，中国的客户也可以在自己周边的省会城市或经济比较发达的相邻城市选购飞机，并在就近的易达中心进行飞机的维修、代管和后续的一切服务。



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Thales Wins Chinese OK for First Heli-Sim

泰雷兹D级模拟器获得中国认证

The first ultra-modern helicopter simulator in China from French company Thales has been signed off as ready to go by the Civil Aviation Authority of China (CAAC).

Arrival of the first class of students is imminent, the company says.

The state-of-the-art Level D simulator features an Airbus Helicopters EC135/H135 cockpit and scenarios for emergency medical services (EMS) and search and rescue (SAR) training missions. It is located in Tianjin in the Aviation Safety flight training center of Haite Group, which commissioned the simulator from Thales. Haite Group, headquartered in Chengdu, is a leading aviation technology service provider in China.

Different-type helicopter cockpits can be rolled on and off the simulator at a later date if Haite chooses to expand the use of the center, Thales says. Prime contractor for the simulator center is Chinese enterprise First State Ltd.

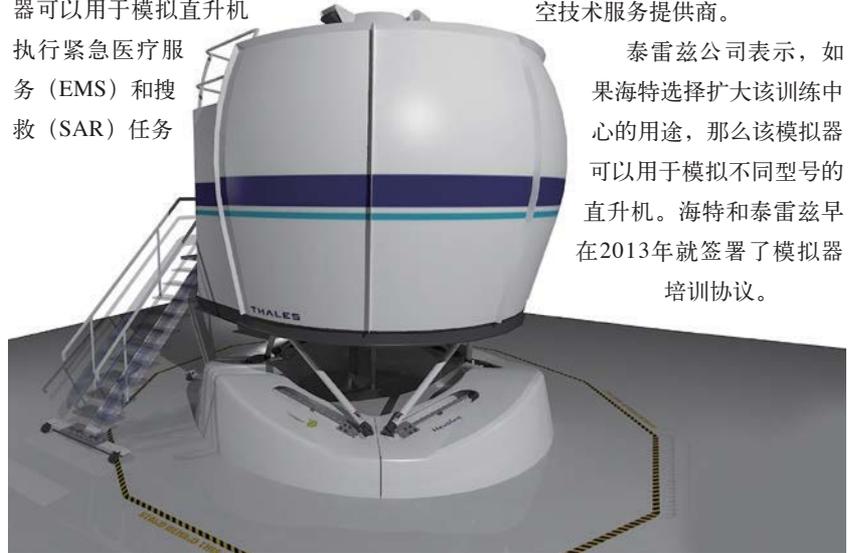
Haite and Thales signed their simulator training agreement in 2013.

Thales is here in Hall 1, [Booth C510](#).

来自泰雷兹公司的H135直升机D级模拟器已经通过中国民航局 (CAAC) 的认证, 即将迎来其首批用户。该模拟器可以用于模拟直升机执行紧急医疗服务 (EMS) 和搜救 (SAR) 任务

的训练场景。这台模拟器位于天津海特集团的航空安全飞行训练中心, 其集团总部设在成都, 是中国领先的航空技术服务提供商。

泰雷兹公司表示, 如果海特选择扩大该训练中心的用途, 那么该模拟器可以用于模拟不同型号的直升机。海特和泰雷兹早在2013年就签署了模拟器培训协议。



Frasca Sees Growing Simulator Demand

Frasca看到模拟器需求正在增长



Frasca introduces a new Helicopter Training Device (HTD).

With nearly 240 Robinson R44 and 32 Schweizer 300Cbi piston-engined helicopters in China, Frasca Flight Simulation anticipates growing demand for simulators and flight training devices for these basic trainers.

Earlier this year the U.S. based company installed two combination Frasca S300/

R44 FTDs for China Flying Dragon General Aviation Co. Ltd, located in the Heilongjiang Province. The simulator cockpit accurately replicates the aircraft, including panels, controls and instrumentation, and can easily be converted between the S300 and R44 configuration.

Other helicopter customers in China include Sichuan Xilin FengTeng, which operates an S300/R44 Level 5 combo simulator, and Sky Safari General Aviation, a flight training company based in Shanghai, with an R44 Level 5 Flight Training Device.

Frasca has been doing business in China for more than 25 years and now has 38 simulators, mostly fixed-wing, spread across 14 Chinese flight universities, colleges and private training centers. "We are currently working Request For Quotes from multiple prospective customers that involve 12 upcoming simulator opportunities," says Greg Campbell, Frasca's director for international business.

The simulators are supported in-country by Beijing-based Lantech Engineering, Frasca's exclusive Chinese distributor.

Simulators can be relatively expensive when compared to the cost of light helicopters, so Frasca is introducing a new Helicopter Training Device "at an affordable price." It incorporates the same aerodynamic technology as Frasca's Level D simulators but without the motion system, and is designed for inadvertent IMC encounters as well as operational and procedural training.

The HTD is aimed at helicopter air ambulance providers, airborne law enforcement, introductory turbine transition training, and ab-initio flight schools. It can be equipped with Frasca's Helicopter Mission Training Database and databases for a customer's geographic area of operation. It is available for many types of light helicopter.

Frasca is at Hall 1, [Booth D704](#). —John Morris

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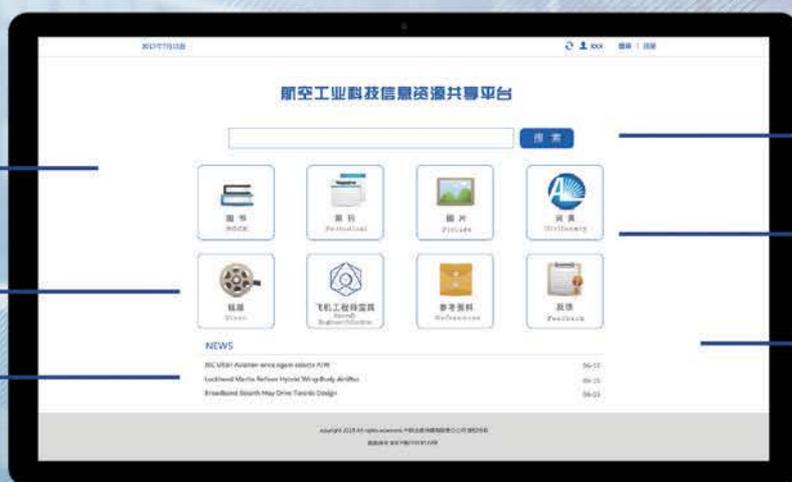
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AVIC Helicopter is showing a new model of its latest concept for the AHL.

Russia-China Near Next Step on Heavy Lifter 中俄重型直升机即将进入下一阶段

The long-proposed joint Sino-Chinese Advanced Heavy Lift helicopter may get the go-ahead in the next few months after nearly a decade of studies.

Rostec, Russia's state hi-tech corporation and the parent of Russian Helicopters, could sign the contract with Aviation Industry Corp. of China (AVIC) before the end of this year, according to Victor Kladov, Director for International Cooperation and Regional Policy of Rostec. He made the announcement at the Fourth China-Russia Expo in Harbin, China, in June. Negotiations on the conceptual model and

configuration have been completed and the draft contract between the parties is being prepared, he said.

The Advanced Heavy Lift (AHL) program is a high priority for the two countries, with framework agreements signed during meetings between Russian President Vladimir Putin and Chinese President Xi Jinping.

China will fully manage the program including design, assembly of the prototypes, testing, certification, serial production and marketing. Russian Helicopters will develop certain subsystems on contract, but will not build them.

“At least 200 heavy lift helicopters are planned to be built in China. This is an estimated market volume. These helicopters will possibly be exported,” according to Kladov.

The AHL is expected to have a take-off weight of 38 metric tons (83,800 lb.). It could carry 10 metric tons (22,100 lb.) of cargo inside the cabin or 15 metric tons (33,100 lb.) on an external sling, or up to 60 passengers. In 2015 Avicopter said the AHL would have a ceiling of 5,700 meters (18,700 ft.), range of 630 km (392 mi.) and a maximum speed of 300 kph (186 mph).

经过近十年的研究，中国的先进重型直升机项目在未来几个月内可能会有所发展。

俄罗斯直升机公司的母公司——俄罗斯国家高科技公司（Rostec）可能在今年年底之前与中国航空工业公司（AVIC）签订合同，消息来源于俄罗斯国家高科技公司国际合作与区域政策总监 Victor Kladov。他在今年6月在哈尔

滨举行的第四届中俄博览会上公布了这一消息。Kladov表示，关于概念模型和配置的谈判已经完成，双方之间的合同草案正在准备中。

先进重型直升机（AHL）项目受到中俄两国的高度重视，俄罗斯总统普京与中国国家主席习近平在会议期间签署了框架协议。

中国将全面管理项目的设计、原型机装配、测试、认证、系列生

产和营销工作。俄罗斯直升机公司将根据合同研发某些子系统，但不会生产它们。

Kladov说：“中国计划制造至少200架重型直升机，这是一个市场估计数量。这些直升机可能会出口海外。”

AHL的预计起飞重量为38吨（83800磅）。它可以在机舱内装载10吨（22100磅）的货物，或者

在外部吊索上装载15吨（33100磅）货物，该机最多可搭载60名乘客。在2015年，中航直升机公司表示，AHL的最大飞行高度为5700米（18700英尺），航程为630公里（392英里），最高时速为300公里/时（186英里/时）。

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Image - Courtesy of LIFE Consortium



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Chongqing Wins Orders for Enstrom

重庆通航旗下恩斯特龙收获大单



Enstrom is showing a 480B in police configuration.

China has become a major market for Enstrom Helicopter Corp., which manufactures aircraft in the U.S. under the ownership of Chongqing General Aviation since the end of 2012.

The Chinese parent invested in the U.S. facilities, supported development of Enstrom's latest helicopter, the TH180 trainer, and is now its in-country dealer.

Chongqing has just boosted Enstrom's business by winning orders in June for 10 four-passenger turbine-powered 480B helicopters for a customer in Inner Mongolia, and for three 480Bs for a low-altitude tourism company in Sichuan. The sales are valued at RMB 170 million (\$26.2 million). The Mongolian customer already operates two 480Bs that it bought last year for tourism and spraying.

2012年底，重庆通航集团收购了美国恩斯特龙直升机公司。由于中国市场是恩斯特龙飞机的主要市场，所以收购后恩斯特龙飞机的年销售量几乎翻倍。

继480B和280FX之后，重庆通航集团与美国恩斯特龙直升机公司合作开发了主要用于飞行训练的TH180，并成为其中国经销商。今年6月份，重庆通航集团还与内蒙

古和四川企业分别签署了10架和3架恩斯特龙480B直升机订单，销售额超过1.7亿。其中内蒙古企业去年采购的2架恩斯特龙480B直升机目前已投入运营，主要从事空中游览、农林喷洒等业务。

去年恩斯特龙在全球范围内共交付了12架直升机，其中包括2架F28F，1架280FX和9架480B，价值1370万美元。而目前中国境内共有

The Chinese orders compare with Enstrom's total worldwide deliveries last year of 12 helicopters valued at \$13.7 million (two F28Fs, one 280FX, and nine 480Bs). There are 27 civil-registered Enstroms currently active in China, according to the Rotorspot website.

Enstrom has been suffering from a depressed helicopter market in the U.S. and elsewhere, and the new orders "will make a big difference to us," says Orlando Alaniz, director of sales and marketing.

Chongqing initially planned to take 30% of China's domestic market for its class of helicopter by 2020, and to reassemble U.S.-manufactured Enstroms for the Chinese market under a CAAC production certificate. But airspace hasn't been opened

up as fast as many expected, and China's helicopter boom is yet to happen. 对此，美国恩斯特龙直升机公司市场销售部总监Orlando Alaniz表示恩斯特龙直升机在美国和其他地方的销售市场一直比较低迷，但公司对中国市场却充满期许。

重庆通航集团曾预测，到2020年恩斯特龙直升机在中国轻型直升机市场中的份额将达到30%。但目前来看，由于中国低空空域尚未开

up as fast as many expected, and China's helicopter boom is yet to happen.

When it does, Enstrom and Chongqing will be ready, says Alaniz, who adds that "current sales are miniscule compared to what they could be." Subassemblies have already been sent to China and engineers have visited the U.S. manufacturing plant as groundwork is laid for eventual dual assembly lines "to meet that humungous Chinese demand," he says.

Meanwhile, two TH180 trainers are in flight test in the U.S. as they progress toward a target for simultaneous FAA, EASA and Canadian certification in the first quarter of 2018.

Enstrom is in Hall 1, **Booth D501**.

—John Morris

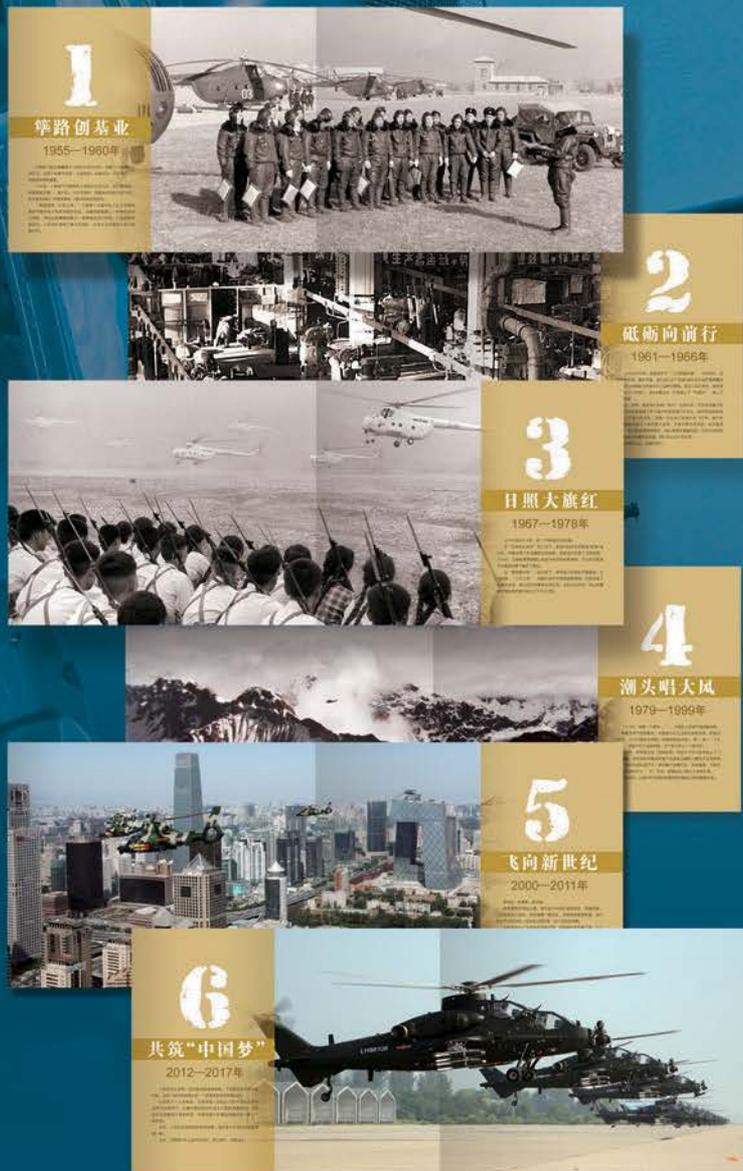
放，要实现这一预测恐怕有些困难。此外，Alaniz还表示：“现在恩斯特龙直升机的销量完全达不到其应有的销量。为了扩大销量并满足中国市场的需要，重庆通航甚至在美国和中国都建了组装线。目前有2架TH180训练机正在美国进行飞行测试，公司预计在2018年第一季度同时获得FAA，EASA和加拿大的适航认证。

《飞旋之梦——中国直升机事业60年》 新书首发

值中国人民解放军建军90周年、中国直升机工业创建60周年之际，为向党和国家以及为中国直升机事业奋斗的人们献礼，贯彻落实中国航空工业集团公司军民融合发展战略，公开向社会公众展示中国直升机事业发展历程和取得的辉煌成果，中航直升机有限责任公司与航空工业出版社联合编写出版了《飞旋之梦——中国直升机事业60年》大型画册，并将于2017年9月14日在第四届中国天津国际直升机博览会上举行首发仪式。

本画册图文并茂，资料翔实，既有对重大史实的记述又有大量珍贵的历史照片。书中全面记述了从新中国1955年直升机部队组建到2017年中国人民解放军建军90周年，长达60多年的中国直升机事业从无到有、从小到大、从弱到强的艰辛历程，取得的一个又一个辉煌成就，为国防现代化建设、为社会经济发展、为人民生活水平提高，做出的不可替代的重要贡献。

本画册的出版是为铭记历史、弘扬传统，缅怀、告慰直升机界的前辈；展示今日中国直升机事业的崭新面貌，激励、教育中国直升机人为中国的航空事业，为实现伟大的“中国梦”而努力奋斗，具有重要意义和价值。



谨以此书

纪念中国人民解放军建军90周年
纪念中国直升机工业创建60周年
献给为中国直升机事业奋斗的人们……

Chinese Army Aviation Corps in the New Era 走向新时代的中国陆军航空兵



1986年10月3日，中央军委正式批准组建陆军航空兵，在总参谋部设立陆军航空兵管理局，并指出：“组建陆军航空兵部队，是军队体制的一项重要改革，是提高陆军部队作战能力的积极措施，要下决心建设好这个兵种。”从此，陆航作为一个崭新的兵种，走进了我军诸兵种序列。

经过30多年建设，陆军航空兵已以发展成为拥有多个机型、具备相当规模和作战能力的现代化空中突击力量；中国陆军已经开始由地面向空中扩展，由单一平面作战向多维立体作战转变。

近年来，走进新时期的陆航部队不论是在装备技术还是在作战能力上都有了极大的进步。“机动作战，立体攻防”，陆军的新作战指导思想引领着陆军航空兵从后方走向前台，陆航也在新时期的训练中围绕作战指挥、战术运用、综合保障等难点问题进行攻关，由零散编组、分散使用向大规模、成建制全程集中使用转变；由配属使用向主战运用转变，实现了陆航从辅助兵种向主战兵种的转变。

今年的建军90周年纪念的阅兵式集中展示了中国陆军航空兵的实力。由直10、直19武装直升机组成陆军航空兵空中突击队第一个接受检阅，它们作为中国人民解放军陆军航空兵的主战机型大大提升了陆军航空兵的航空突击与反装甲能力。直10编队掩护直8B运输直升机搭载两个连的兵力进入阅兵区进行机降演练，展示体现了陆航整体的协同作战能力。



Thirty-one years ago, on Oct. 3, 1986, the Military Commission of the CPC Central Committee formally approved the establishment of the PLA Army Aviation Corps as a new branch of the military. “The establishment of Army Aviation marks a significant reform of the military system and a positive measure to enhance the combat power of our army,” it said.

Since then the Corps has developed into a formidable modern air assault force with several new helicopter models and considerable combat power. It has brought the Chinese army access to air support, evolving its horizons from one-dimensional to multi-dimensional combat.

More recently, PLA Army Aviation has adopted modern technology in helicopters and weapons to magnify its combat power. Guided by the new operational principle of “mobile operations, comprehensive attack and defense,” it has become central to the Army’s battlefield tactics and support. No longer decentralized in scattered groups, it

has become a main Army branch instead of an auxiliary unit.

The PLA Army Aviation Corps fully demonstrated its strength at a huge parade in Beijing to mark its 90th anniversary with massed formations and fly-bys of Z10 and Z19 armed helicopters and Z8B transport

helicopters. Two companies demonstrated fleet landing exercises in the parade area under cover of the Z10 formation, showing the capability of the Army Aviation Corps to coordinate all its capabilities on the battlefield.



CAH Updates Maintenance Qualifications on AW119 Helicopters CAH新增AW119系列直升机维修能力

On July 26, Jiangxi Changhe Agusta Helicopter Co., Ltd. (CAH) was certified for its new maintenance qualifications by Civil Aviation Administration of China. Updated qualifications include

inspections on AW119/AW119MK II after 1600-hour flight/ annually/ ≤1200 movements; on AW139 after 1200-hour flight/ annually/ ≤2000 movements and change of engines for AW119/AW119MK

II and AW139. Up to date, as the after-sales service center of Leonardo S.p.A. in China, CAH's maintenance qualifications have covered all Leonardo helicopters operated in the country.

7月26日，江西昌河阿古斯特直升机有限公司（CAH）顺利通过中国民航局的维修新能力拓展申请审查，正式获颁新维修能力资质。此次获批的新维修能力包括AW119/AW119MK II机型1600飞行小时/年检/1200起降（含）以下检查、AW139机型1200飞行小时/4年/2000起降（含）以下检查、以及AW119/AW119MK II和AW139机型发动机更换工作。至此，CAH作为意大利莱昂纳多直升机公司的国内售后服务中心，维修能力已经涵盖国内运营的所有莱昂纳多直升机机型。



CAAC Releases Airworthiness Directive on S-92A 民航局发布针对S-92A直升机的适航指令

Civil Aviation Administration of China released an airworthiness directive on Sikorsky S-92A helicopters, requiring that owners/operators of any S-92A helicopter registered in China and installed with tail gear box center housing (P/N: 92358-06107-043) shall check the tail gear box center housing and demolish those that have been used for 12200 hours or more in case of failure in tail rotor drive or loss of control of helicopters caused by cracks in the tail gear box center housing.

中国民用航空局
CIVIL AVIATION
ADMINISTRATION OF CHINA



CAAC
适航指令
AIRWORTHINESS DIRECTIVE

本指令根据中国民用航空规章《民用航空器适航指令规定》(CCAR-39) 颁发，内容涉及飞行安全，是强制性措施。如不按规定完成，有关航空器将不再适航。

编号：CAD2017-S092-03 修正案号：39-9048

一. 标题： 检查直升机尾部齿轮箱中心外壳

近日，中国民航局发布了一则针对西科斯基S-92A直升机的适航指令。该适航指令要求在国内注册的、安装了零部件号(P/N)为92358-06107-043的尾部齿轮箱中心外壳的所有型号的S-92A直升机所有人/运营商，必须对直升机尾部齿轮箱中心外壳进行检查，在下次飞行前拆除任何正在使用中的使用时间大于或等于12200小时的该件号尾部齿轮箱外壳，防止S-92A直升机由于尾部齿轮箱中心外壳出现裂纹而导致尾桨传动装置失效及直升机失控。

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