

September 15, 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
INTERNATIONAL AVIATION

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4th China Helicopter Exposition Opened 第四届天津直升机博览会开幕



The 4th China Tianjin International Helicopter Exposition opened yesterday morning in the Airport Economic Area of Tianjin. Mayor of Tianjin Wang Dongfeng, GM of AVIC Tan Ruisong, lieutenant general Peng Bo, the deputy commanding officer of PLA ARMY kicked off the show.

第四届中国天津国际直升机博览会于9月14日开幕，本届直博会在天津市空港经济区举行。天津市市长王东峰、中国航空工业集团公司总经理谭瑞松和中国陆军副司令员彭勃中将出席开幕式并发表开幕致辞。陆航风雷表演队和航空工业直升机进行了精彩的飞行表演。



Ruohang to Buy 12 Bell 505s from Reignwood 若航集团与华彬航空签订购机协议

Ruohang Group's Lhasa Xueying General Aviation signed a contract here yesterday with Reignwood Aviation for two Bell 505 JetRanger X and a purchase agreement option for 10 more. The first of the light single-engine helicopters will be delivered next February, making Xueying General Aviation one of the first 505 operators in China. Lhasa Xueying General Aviation is owned by Ruor General Aviation Development Group and Lhasa Tourism and Culture Group. Ruohang Group and Reignwood also signed a strategic cooperation agreement to market development for helicopters. Reignwood is Bell Helicopter's largest customer for the 505, with contracts covering 60 JetRanger X.



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AVIC Wins Orders for 26 Helicopters

中国航空工业成功签订26架 民用直升机销售合同



AVIC's Changhe and Harbin helicopter companies signed deals for a total of 26 rotorcraft here at the show yesterday, including a breakthrough into the international police aviation market.

The orders involved 18 light, single-engine AC311A helicopters, two twin-engine AC312s, four hot-and-high AC312Es, and two three-engine AC313s.

The deals were:

- Ten AC311A s for Jiangxi Financial Leasing Co., for use in public services and general aviation;
- Three AC311As and two AC312 police helicopters for export to Zambia for police missions;
- Four AC312E and two AC313 helicopters for Tibet Development and Investment Group General Aviation Co. to be used by Tibet's

2017年9月14日，航空工业直升机在第四届中国天津国际直升机博览会上与用户及合作伙伴签署一系列销售合同及合作协议。

航空工业直升机与中信海洋直升机有限公司、中航国际航空发展有限公司及中航航空产业投资有限公司共同签署合资经营直升机联合技术有限责任公司的合作协议，合资公司将开展直升机机体及部件维修、延寿、加改装、直升机航材及备件销售等业务。

航空工业昌飞与江西金融租赁股份有限公司签署10架AC311A型直升机销售合。它们将用于社会公共服务和市场通航运营。

航空工业昌飞、航空工业哈飞与中航技进

emergency rescue and general aviation service;

- Five AC311As for Shandong Sanrong Group through Huaxia Jiuzhou General Aviation Company.

In addition, AVIC Changhe Aircraft Industry Group signed an agreement with Zhangqiu District Government of Jinan, Shandong Province, on building a modern general aviation service center that will offer helicopter maintenance, modification and sales of aviation materials and spare parts.

Another MRO deal saw Avicopter, CITIC Offshore Helicopter, AVIC International Aero-Development Corporation and AVIC Investment Co. agree to set up the joint venture Helicopter United Technologies Co., for maintenance of airframe and spare parts, aircraft lifetime extension, modification, and sales of helicopter materials and spare parts.

口有限责任公司签署3架AC311A和2架AC312型警用直升机销售合同。这5架直升机将出口赞比亚，用于赞比亚警航建设，标志着中国航空工业首次进入国际警用航空市场。

航空工业哈飞、航空工业昌飞与西藏开发投资集团通用航空有限公司签署4架AC312E和2架AC313型直升机意向合同。这6架高原直升机将用于西藏地区航空应急救援和通航运营。

华夏九州通用航空公司与山东三融集团签署5架AC311A型民用直升机销售合同。

航空工业昌飞与山东济南章丘区政府签订建设集直升机维修、改装、航材备件中心为一体的现代化通航运营服务基地的战略合作协议。

Avicopter Showcases Progress at Heli Expo

军民并重、直面竞争——中国直升机产业直博会上全面亮相

Avicopter, the leader of China's helicopter industry and one of the organizers of this year's China Helicopter Exposition, used the occasion to showcase its broadening product line.

由天津市人民政府、中国航空工业集团公司、中国人民解放军陆军共同主办，天津市滨海新区人民政府协办的第四届天津直博会于9月14日-17日在空港经济区举办。

中国航空工业集团公司是国内直升机领域的龙头，作为天津直博会的主办方之一，本届直博会上航空工业以“军民融合、一带一路引领产业发展”为参展主题，突出展出军民机产品的先进设计能力、

制造能力和创新能力，以及一体化集成服务能力，全方位、全系列地展示近年来中国直升机产业创新发展的最新成果。直博会在促进直升机产业发展方面将起到三大平台的作用：即展示产品和能力的主要平台、促进业内合作和交流的良好平台、推进客户沟通交流的重要平台。

聚焦于航空主业发展，航空工业在本届直博会上展示了全谱

系的直升机产品，包括直10、直19等具备第三代水平的先进军用直升机，AC311、AC312、AC313、AC352、AC322等民用直升机和多种军民用无人机，以及重型直升机大比例模型和虚拟交互座舱、直升机应急救援系统等设备。这表明航空工业将确保履行强军首责，在继续保持军机产业优势，做优军机产业的同时，加快民机运行体系建设，充分发挥民机销售、服务、培训、运营等全产业链的优势，进一步加快民机通航产业的发展。

“军民融合”是航空工业的产业特色，而“一带一路”是航空工业的市场发展方向。此次直博会重点展出的多种机型都是以军民融合战略为基础新研发的产品。而在“军民融合、一带一路”的大势之下，如何瞄准军机新型号研制，丰富民机产品构架，众多嘉宾共聚直



Lv Jie, President of AVICOPTER.

升机论坛研讨直升机行业和通航产业的发展。

在本届直博会上，除AC352、直10、直11、直19等直升机进行系列飞行表演、静态展示外，航空工业直升机在与用户及合作伙伴签署了26架民用直升机销售合同及合作协议。



AVICopter Launches Flight Training and Experience Center

航空工业直升机飞行培训及科技体验中心正式启用

On September 14th, AVICopter's Flight Training and Technology Experience Center was officially established. AVIC Deputy General Manager Chen Yuanxian, Tianjin Binhai New District Deputy Mayor Xia Qinglin unveiled the center together.

AVICopter's Flight Training and Technology Experience Center is an experience center which is focusing on pilot and air traffic control training. The center is equipped with 7 helicopters including AC311, R44, and S300, and DA40 and Cessna 172 fixed wing aircraft. It is reported that it's the largest domestic general aviation simulation training center at present.

9月14日，航空工业直升机飞行培训及科技体验中心正式挂牌成立。航空工业集团公司副总经理陈元先，天津滨海新区副区长夏青林共同为航空工业直升机飞行培训及科技体验中心揭牌。

航空工业直升机飞行培训及科技体验中心是航空工业直升机公司设立的以飞行员培训为主的互动体验中心。中心内设有AC311直升机、R44直升机、S300直升机、DA40、赛斯纳172等七台专业直升机、固定翼训练器以及空管训练器，是目前国内规模最大的通用航空模拟训练中心。



AVIC, CITIC Set up MRO for Russian Helicopters 俄制直升机维修项目落户天津

9月14日，中国航空工业集团公司和中国中信集团公司与天津空港经济区管理委员会签署了《关于俄制直升机维修销售及技术中心项目的投资合作协议》，共同开拓俄制直升机维修市场。

俄制直升机在中国市场有一定的市场占有率，但进入中国60余年来，国内的维修能力和维修技术尚不能完全满足需求。此次，航空工业牵手中信集团将共同组建直升机维修合资公司，获得俄罗斯直升机公司正式维修授权，实现国内俄制直升机规范化维修。

合资公司落户天津空港经济区，主要从事俄制直升机及其部、附件的修理与维护、技术升级、延寿和整机、航材销售等业务，这将极大提升用户的飞行保障能力。

A center to maintain Russian-made helicopters will be set up in Tianjin under an agreement signed here yesterday.

AVIC and CITIC Group Corp. will form a joint maintenance, repair and overhaul venture and operate it with formal maintenance authorization from Russian Helicopters, that country's umbrella helicopter company. It will be located in the Tianjin Airport Economic Area.

Russian helicopters have been operated in China for 60 years, but they have never received full in-country support from their manufacturers. The new center should alleviate that problem and provide standardized maintenance for the growing fleet of Russian-made helicopters with repair and maintenance of the aircraft and their components and accessories. It will also carry out upgrades and modifications.



More Kamov Helicopters for China 更多的卡莫夫直升机进军中国



China this month will take delivery of the first two of six Russian-made Ka-32 utility helicopters from a contract signed last year. They will go to a number of companies including Jiangsu Huayu General Aviation Company, Qingdao Public Security Bureau, and Jiangsu Baoli.

The Ka-32A11BC multirole helicopter is designed for special search and rescue operations, firefighting missions and law enforcement operations. They are currently in service in Austria, Azerbaijan, Brazil, Canada, China, Indonesia, Japan, Kazakhstan, Portugal, Russia, South Korea,

中国去年与俄罗斯签署了一项采购6架卡-32直升机的合同，本月该合同中的首批两架直升机将交付客户。这6架直升机将交付到江苏华宇通用航空公司、青岛公安局、江苏保利等公司。

卡-32A11BC多用途直升机专为搜援、消防和执法任务而设计，该机目前已在奥地利、阿塞拜疆、巴西、加拿大、中国、印度尼西亚、日本、哈萨克斯坦、葡萄牙、俄罗斯、韩国、西班牙和瑞士等国家服务。

卡莫夫公司卡-32A11BC直升机已在中国运营多年，主要从事消防和救援行动，以及在高温高原等地区工作。据统计，目前中国在册的卡-32A11BC直升机共有13架。

卡莫夫公司是俄罗斯直升机公司的一部分，其展位在1号馆D203。

Spain and Switzerland.

Kamov Ka-32A11BC helicopters have been operated in China for several years and have been involved in firefighting and rescue operations, as well as hot-and-high work in the highlands. There are currently 13 active on the China civil register, according to website Rotorspot. Kamov is part of Russian Helicopters, Hall 1, **Booth D203**.
—John Morris

AECC Making Its First Debut In Tianjin

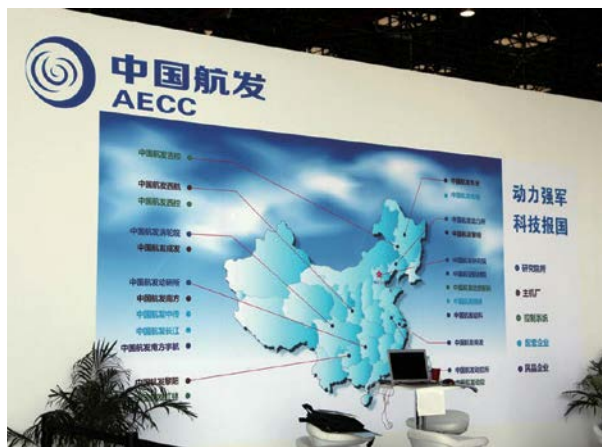
中国航发首次参展天津直博会

Aero Engine Corporation of China (AECC), the nation's new aero engine company, is making its debut here with four exhibits: a military and a civilian turboshaft engine, a helicopter drive system and a rotor system.

AECC (Hall 1, Booth A102) is presenting a model of the dual-use, 1,600 kW class WZ-16 turboshaft; the helicopter drive system displays its speed change process, and the helicopter ball flexible rotor system is making its first public appearance.

The WZ-16 engine is a new turboshaft engine developed jointly by AECC and French Safran Group. It powers the Avicopter AC352 helicopter which is in flight test towards certification next year. The WZ-16 and its French Ardiden 3C counterpart will be certified to the standards of the Civil Aviation Authority of China and the European Aviation Safety Agency (EASA). Two assembly lines will produce the engine, one in China and the other in France. EASA certification is expected at the end of this year.

A main feature of the WZ-16 is its low operating and life cycle costs, and a time before overhaul of 5,000 hours. It has a 15% power growth potential and is suitable for 7-ton twin-engine helicopters and 13-ton triple-engine helicopters. The engine is currently the most powerful turboshaft to be developed in China.



中国航空发动机集团 (AECC) 首次参加天津直博会, 共带来4型展品, 包括军民通用的涡轴发动机、传动系统和旋翼系统关键件。在位于1号馆A102展位的中国航发展台上, 涡轴-16发动机和1600千瓦级涡轴发动机两型产品以模型展出, 直升机传动系统展示其变速过程, 直升机球柔性旋翼系统首次公开亮相。

涡轴-16发动机是中国航发与法国赛峰集团50/50对等合作研制的一款新型涡轴发动机, 于2016年12月20日随AC352直升机完成首飞。涡轴-16发动机的研制严格遵循欧洲和中国民用发动机适航条例的规定, 以全寿命成本最低作为基本原则和指导方针, 成熟期翻修寿命为5000小时。涡轴-16发动机保有15%的功率增长潜力, 可适用于7吨级双发直升机和13吨级三发直升机。1600千瓦级涡轴发动机是独立自主研制的国产最大功率涡轴发动机, 填补了国内该功率等级涡轴发动机的空白, 其功率等级和结构安装性可满足不同吨级直升机的动力需求。

Avicopter and Tianjin Agree Flight Training Center

中航直与天津空港共建飞行培训中心

A new flight training center will be built in Tianjin under an agreement signed yesterday between Avicopter and the Tianjin Airport Economic Zone.

The center will provide multi-type and simulator training for pilots as well as theory and practice, and professional ground services.

It will also include aviation education and science, with an emphasis on teenagers.

Avicopter, the leader of China's helicopter industry, is based in Tianjin.

9月14日, 在第四届中国天津国际直升机博览会上, 航空工业直升机与天津空港经济区管理委员会共同签署《关于共建飞行培训中心合作协议》。双方将密切合作, 在天津空港经济区建立面向通用航空的飞行培训中心项目, 主要以提供专业的空地勤培训服务为核心, 为职业飞行员搭建多机型训练器与模拟机组的专业训练平台, 提供包括理论和实操在内的、成体系的培训场所, 同时面向以青少年为主的大众开展航空科普教育实践活动。

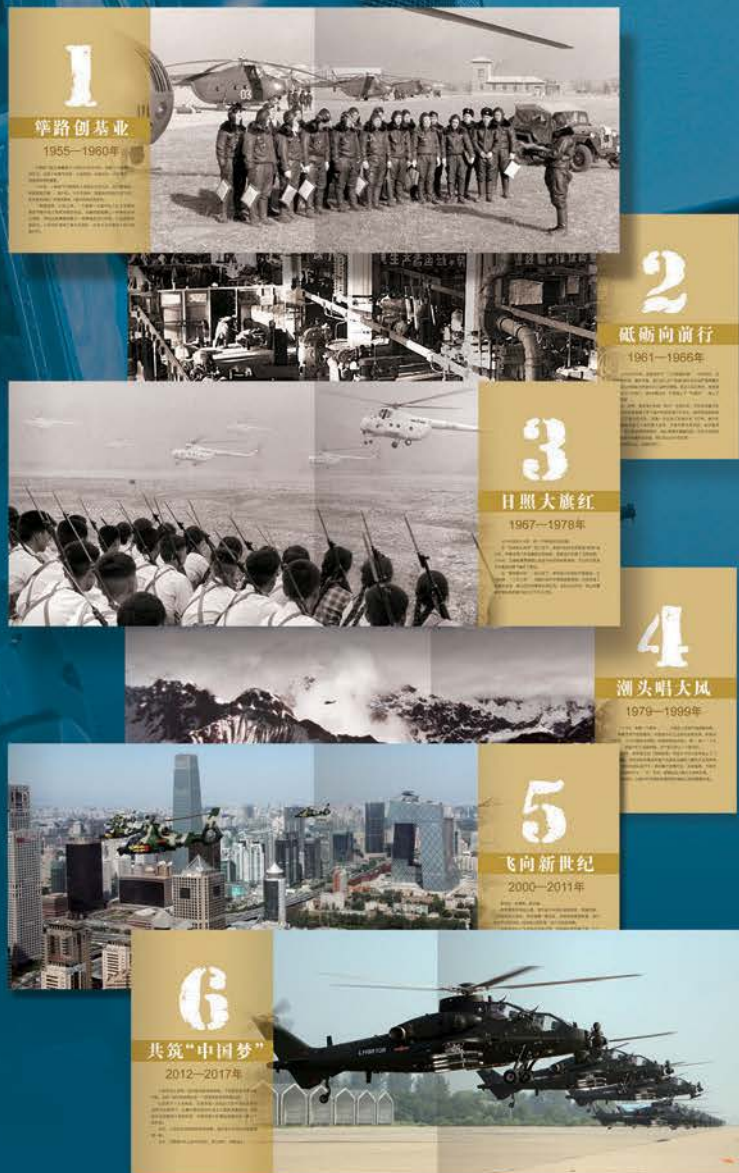


《飞旋之梦——中国直升机事业60年》 新书首发

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……



China Will Need More Firefighting Helicopters

中国消防直升机市场需求巨大

The H215 demonstrating its firefighting capabilities.

Whether it's climate change or increased media coverage, forest fires seem to be getting worse.

That's no different in China than anywhere else. And neither is the lack of resources to contain a blaze before serious damage is done.

China's fleet of firefighting helicopters — four giant Mi-26TSs and a handful of Mi-8/17s, Kamov Ka-32s, Super Pumas and

Avicopter AC313s — isn't nearly enough.

"There is a tremendous need for at least 60 more helicopters, maybe 100, over the next 10 years to perform this kind of mission," says Vincent Dufour, Airbus Helicopters' vice president-commercial for China.

His company's H215 Super Puma has just completed a two-week demonstration tour in South China in multipurpose configuration

including firefighting with an underslung Bambi Bucket. The 2,000 km tour included the ancient town of Linjiang in south-west China, where the H215 showcased its capabilities as a firefighter to the South Station of State Forestry Administration China.

"It was a very successful demonstration, and we are now talking with officials," says Dufour.

—John Morris

当前我国森林防火面临的形势依然非常严峻，现有的森林消防飞机只有4架米-26TS重型运输直升机以及少量的米-8/17、卡-32、超级美洲豹和AC313直升机，远远不能

满足实际需求。对此，空客直升机中国副总裁、商务总监Vincent Dufour表示：为了满足这一需求，中国未来至少需要增加60-100架森林消防飞机。

空中客车直升机公司“超美洲豹家族”的最新成员——H215双发重型直升机日前刚刚完成为期两周的中国南方巡演，演示了包括直升机吊桶洒水灭火在内执行多种任务

的能力。此次包括丽江古城在内的巡演，累计飞行2000余千米，向中国南方的林业管理部门充分展示了H215在消防灭火方面的卓越性能。

Airbus Helicopter Leads MRO in Region

空客直升机的MRO服务引领亚太地区

Airbus Helicopters has the most extensive maintenance, repair and overhaul coverage of any helicopter manufacturer in the Asia-Pacific region, with eight factory-owned MROs and 10 authorized service centers.

That's the conclusion of the just-released Infrastructure report by Hong Kong-based aviation consultants Asian Sky Group.

Leonardo Helicopters comes in second

with two factory-owned MROs and 16 authorized facilities. This is just ahead of Bell Helicopter with one factory-owned MRO and 14 authorized facilities.

Sikorsky has one factory-owned MRO, with five authorized facilities.

Mainland China has the second-greatest concentration of helicopter MRO facilities in the region with 22, versus 34 in Australia.

Asian Sky Group is here at Hall 2, **Booth A803.**

根据亚翔航空刚刚发布的航空基础设施报告，空客直升机在亚太地区的服务覆盖范围最为广泛，共有8个自营服务中心和10个授权服务中心。其次为莱昂纳多直升机，拥有两个自营服务中心和16个授权服务中心。贝尔也有1个自营服务中心和14个授权服务中心。西斯基则有1个自营服务中心和5个授权服务中心。总的来看，中国大陆地区共拥有22家直升机维修服务中心，仅次于澳大利亚的34家。

Giant Mi-26TCs Handle China's Hot Spots

重型直升机Mi-26TC成为中国的热点

There are now four giant Mi-26TC helicopters available to fight fires in China - and they have been busy this year. The aircraft are produced by Rostvertol, part of Russian Helicopters.

Several large fires of note were extinguished with the help of the heavy-haulers.

The first, in Spring 2017, broke out in mountainous forest near Yantai city (Shandong province), threatening homes, a Hyundai car factory and other industries. The Mi-26TC greatly helped firefighters with eight water drops of ten tons each.

A second forest fire was sparked on June 23 in by a lightning strike in Daxing'anling, Heilongjiang province, leading to a blaze that threatened rare species of trees and animals. The Forestry Department of Heilongjiang province sent 2,284 firemen to fight the fire, and backed them up with eight helicopters: two Mi-26TCs, two Mi-171s, two Ka-32s and two Z-8s. The Mi-26TC helicopters made 12 water drops totaling 96 tons; the combined effort extinguished the fire in a day.

Last year the Mi-26TC was also used to provide fire safety during the G20 summit of world leaders in Hangzhou.

The Mi-26TCs are operated in China by QingDao Helicopter Co., which has two of them, and China Flying Dragon General Aviation Co., and Lectern Aviation Supplies Co. All are available to the Forestry Department of China for firefighting.

Last month Mi-26 helicopters helped save their birthplace when a major blaze engulfed parts of the Russian city of Rostov-on-Don, where they are built. Seven helicopters (five Mi-8s and two Mi-26s) were sent by the Southern Military District and Federal National Guard Troops Service to fight the fire. The Mi-26s made 12 drops totaling 90 tons of water, flying day and night through thick smoke and haze to reach their targets.

Russian Helicopters is here at Hall 1, Booth D203. **-John Morris**



China can now call on four Mi-26TCs to fight fires.

今年，中国现有的4架消防用重型直升机Mi-26TC异常忙碌。这些由俄罗直升机公司在Rostvertol的工厂生产的直升机今年扑灭了儿场大火。

第一起是在2017年的春天，山东烟台附近的山区发生火灾，威胁到当地的居民和现代汽车等工厂的安全，Mi-26TC直升机喷洒了10吨水，有力地协助消防队员完成灭火任务。

第二起火灾发生在黑龙江省的大兴安岭，6月23日雷击引发了森林火灾，黑龙江省林业厅派出了2284名消防队员与8架直升机用于救火，其中有两架Mi-26TC、两架Mi-171s、两架Ka-32和两架Z-8。两架Mi-26TC直升机共计喷洒了96吨水，经多方共

同努力在1天之内扑灭了大火。

在去年的G20杭州峰会上，Mi-26TC也被用作保证消防安全。

青岛直升机公司有两架Mi-26TC可用于消防，而中国飞龙通用航空有限公司和Lectern航空用品有限公司也都具备为中国林业局提供消防服务的能力。

上个月，Mi-26直升机为其出生地扑灭了一场大火，当时大火吞噬了俄罗斯罗斯托夫市的部分地区。南部军区和联邦国民警卫队部队派出5架Mi-8与两架Mi-26共计7架直升机用于灭火。Mi-26s共喷洒了90吨水，不分昼夜穿过浑厚的烟雾与阴霾抵达他们的目标。

Chongqing to Supply 15 Enstroms to Police

公安部警航办与重庆通航集团签署战略合作协议

Chinese police forces signed agreements here with Chongqing General Aviation Industry Group involving 15 Enstrom 408B turbine helicopters for law enforcement. The Chinese Ministry of Public Security Police plans to take 10 of the light-single helicopters, and Yunnan Honghezhou Police Station five.

Chongqing General Aviation is the owner of U.S.-based Enstrom, and is its Chinese dealer and distributor. A law enforcement-equipped 408B can be seen here at the show.

9月14日上午，公安部警航办与重庆通航集团签署战略合作协议。根据协议，重庆通航集团将一次性优惠提供10架恩斯特龙480B直升机支持中国警航事业发展，并就整机采购、批量交付、代管服务、人员培训、机场建设、低空空域综合保障系统六个方面提供全方位的优质服务。之后，云南红河州公安局与重庆通航集团还签署了意向购机协议，现场确定5架警用型恩斯特龙480B直升机订单。



航空工业直升机
AVICOPTER



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军民融合、一带一路引领通航产业大发展

“Military and Civilian Integration, Belt and Road”
Boosting General Aviation

Collins Supplies HeliSure™ Avionics for AC312E/C 罗克韦尔柯林斯为AC312E/C提供HeliSure™航电设备

Advanced avionics from Rockwell Collins are featured in the cockpit of Avicopter's new nine-seat AC312E helicopter, which is undergoing flight testing with certification anticipated "in the near future."

The AC312E, optimized for high altitude performance and reduced operating costs, is a development of the 12-seat H410/425 helicopter that can trace its origins back to license-production in China from 1981 of the French Aerospatiale AS365 Dauphin.

Collins is supplying its latest HeliSure™

CDS (cockpit display system) and Pro Line 21 communication, navigation and surveillance equipment. The cockpit display system provides growth to support Synthetic Vision, Helicopter TAWS (terrain awareness and warning system) and EFB (electronic flight bag). Options for the platform also include the RTA-4112 MultiScan weather radar and the TTR-4100 TCAS II traffic surveillance system.

"The comprehensive solution we're providing for the AC312E/C features an advanced architecture that supports future

capabilities as they become available, which is especially important for the types of missions that will be flown by the AC312E. Through our long-time, collaborative working relationship with Harbin Aircraft Industries Group (HAIG), we were able to develop an innovative avionics suite that delivers safety, situational awareness and reliability to AC312E operators," the company says.

HAIG has also selected Rockwell Collins to provide the avionics for the next-generation development of the AC312, the AC312C.

中航直为其研制的新型9座级AC312E直升机驾驶舱选择了罗克韦尔柯林斯公司的先进航电设备，目前AC312E直升机正在进行飞行测试，预计会在不久的将来取得适航证。

经过优化设计的AC312E直升机，高空飞行性能优异且运行成本降低，作为12座级的H410/425直升机的改进型，其设计源于1981年中国获得授权生产的法国AS365“海豚”直升机。

罗克韦尔柯林斯公司提供了最新的HeliSure™座舱显示系统(CDS)和Pro Line 21通信、导航和监视设备。座舱显示系统提供了合成视景、直升机地形指示和告警系统(TAWS)和电子飞行包(EFB)。HeliSure™平台功能还包括RTA-4112 MultiScan气象雷达和TTR-4100 TCAS II空中交通监视系统。

罗克韦尔柯林斯公司中国区董事总经理何伟昌先生表示：“柯林斯为AC312E/C直升机提供的全套方案包括可支持该机未来能力拓展的先进架构。通过与中国航空工业哈尔滨飞机工业公司(HAIG)长期的合作，我们能够研发不断满足客户要求的航电设备，使AC312E的运营更加安全、可靠。”



Avicopter's AC312E features a Rockwell Collins HeliSure™ flight deck.

哈尔滨飞机工业公司也为AC312的下一代型号AC312C直升机选择了罗克韦尔柯林斯公司的航电设备。

Unmanned Z-5 Scores a First in Low Level Work Z-5型无人直升机成功完成电力巡检示范飞行作业

The widely-used Z-5 unmanned helicopter designed in 2011 by No.60 Research Institute of The People's Liberation Army General Political Department has just scored a new first thanks to a Ku-band satellite communications system: low altitude surveillance in mountainous terrain.

Flying at low level through plains, hills and mountains makes line-of-sight communication impossible. But fitted with Ku-band equipment—a first in China for an unmanned aerial vehicle—the Z-5 demonstrated the feasibility of unmanned operations in those environments.

The helicopter performed 18 sorties and 20 flight hours from Aug. 3-18 conducting checks

of electrical transmission wires in Guangdong Province, where it also encountered high heat, high humidity and marine conditions. It successfully inspected 110kV, 220kV and 50kV AC-voltage power lines, securing precise coordinates of towers and electric lines as well as shooting high-definition images of insulators, pins, connectors and vibration dampers.

The Z-5 is in service in civil fields such as electricity, agriculture, forestry and resource detection, in addition to military uses. It has a maximum take-off weight of 450 kg, a mission payload of 50-80 kg, a maximum cruising speed of 160 km/h, and flight endurance of 4-6 hr.

8月3日，总参谋部第六十研究所研制的Z-5型无人直升机开始在广东省进行电力巡检示范飞行作业，共计飞行18架次。Z-5首次在国内搭载了Ku波段卫星通信系统，有效解决了超低空、山区飞行的通信瓶颈。Z-5型无人直升机是一款轻型多用途无人直升机，于2011年完成设计定型，随后在部队、院校和全军各训练基地进行了推广应用，并在电力、农业、林业和资源探测等民用领域成功实现了成果转化应用。

Thales: A Next-Gen Digital Cockpit

泰雷兹：新一代数字驾驶舱系统



Thales is promoting its Avionics 2020 digital cockpit here at the show.

Imagine a helicopter that nearly flies itself, leaving the crew free to concentrate on the mission at hand. Avionics, connected seamlessly to the rest of the world through secure datalinks, make the aircraft a digital node on the Internet and display vital mission information ahead of the windshield. Sensors or medical equipment talk in real time to headquarters.

That is the goal of French avionics expert Thales, which has been refining its Avionics 2020 vision for helicopters for the last four years. The new cockpit has not yet won a place on a helicopter, but Thales has plenty of experience in the market: its avionics have been selected for more than 2,000 military and than 5,000 civil helicopters around the world, and it provides the integrated flight deck for Sikorsky's S-76D.

Avionics 2020 features Thales' expertise in four core digital technologies: connectivity, Internet of Things, data analytics and artificial intelligence.

The result will be increased safety and efficiency, and lower cost of ownership, says Emmanuel Guyonnet, vice president marketing for Thales helicopter avionics.

Thales is here at China Heli Expo, Hall 1, **Booth C510**, to promote Avionics 2020 to Western and Chinese manufacturers.

Meanwhile, talks "are progressing quite well" with Shanghai AVIC on forming a partnership for helicopter avionics under a memorandum of understanding signed two years ago, says Guyonnet, "but there is no news today."

—John Morris

想像一下，一架直升机在接近于自主情况下飞行，机组成员都在专注于手头的任务，航电设备通过安全数据链接把整架直升机同世界其他地方无缝地连接起来，使直升机成为互联网上的一个节点，并在直升机风挡玻璃上面显示重要的任务信息，也可将传感器或医疗设备的信息实时传送到总部。

上面是泰雷兹公司研发航电系统的目标，该公司在过去四年里一直致力于其Avionics 2020航电系统的开发，该系统目前还处于研制阶段。泰雷兹公司在直升机航电市场上有丰富的经验，其航电系统已被全球2000多架军用直升机和5000多

架民用直升机所采用，例如西科斯基公司的S-76D就采用泰雷兹综合飞行驾驶舱系统。

Avionics 2020拥有泰雷兹四个核心技术：联通性、物联网、数据分析 and 人工智能。泰雷兹表示，这些核心技术将提高飞行的安全性和效率，并降低运营成本。

泰雷兹在本届直博会1号馆C510展位上向全球直升机制造商推广Avionics 2020系统。

另外，根据泰雷兹与位于上海的中国航空无线电电子研究所在两年前签署的备忘录，双方就联合开发直升机航电设备而建立伙伴关系进展顺利。

A Compact Autopilot

紧凑型自动驾驶仪

Until now automatic pilots were too heavy and too expensive, especially for light and medium helicopters, says Thales. But its new Compact Autopilot brings big-helicopter safety features to small aircraft whose SAR, EMS and law enforcement missions see them increasingly operating at low level and in adverse weather.

The Compact Autopilot system weight is reduced by not requiring a main Flight Control Computer. It provides stability augmentation, attitude retention and flight director modes such as altitude or heading hold and reduces the risk of aircraft incidents.

目前，直升机的自动驾驶系统都很贵，而且重量很大，特别是对中轻型直升机来说影响更大。而泰雷兹表示，其新型紧凑型自动驾驶仪可为小型直升机提供与大型直升机相当的安全功能，特别是在恶劣天气下小型直升机的运行水平越来越低的情况下。

这款紧凑型自动驾驶仪取消了主飞控计算机，从而减少了自动驾驶仪系统的重量，它可以增强飞行稳定性、保持飞行姿态，如保持飞行高度或航向并降低飞行事故的风险。

Safran Helicopter Engines Builds China Momentum

赛峰直升机发动机在华表现强势



Hervé Pasbecq

More than one out of every two Chinese-registered civil helicopters are powered by Safran Helicopter Engines, the French engine manufacturer previously known as Turbomeca.

It has over 600 turboshaft

每两架在中国注册的民用直升机中就有一架是由法国发动机制造商——赛峰直升机发动机提供的动力，它在以前被称为透博梅卡公司。

中国国内目前使用中的赛峰直升机发动机的涡轴发动机有600多台，未来还会有更多，因为由赛峰直升机发动机驱动的中航直的直升机赢得了更多的销售订单，而进口旋翼机的势头也依然强势。

下一个发展里程碑将是在2018年年底，合资生产的1700马力涡轴16发动机在7吨级AC352直升机上获得认证。

赛峰直升机发动机公司中国区总经理Hervé Pasbecq表示：“我们与中国直升机行业已经有40多年的合作”，合作水平不断提高。赛峰为单发的AC311/311A和双发的直-9/H410/H425/AC312A以及改进的AC312E直升机提供动力。

“我们还有一些其他的项目，” Pasbecq说，但他不会透露细节。中航直尚未公布其基于AC312A直升机改进的AC312C项目和研发中的3吨级AC322直升机发动机选型，赛峰为该机提供了阿赫尤2发动机作为候选动力。

5年前，中国的大部分透博梅卡发动机是

engines in service in-country, with many more to come as Safran-powered Avicopter helicopters win more sales and as the flow of imported rotorcraft gains momentum. In addition, China's large military fleets use license-built Safran engines including the WZ-8 version of the Arriel.

The next development will be certification at the end of 2018 of the joint-venture 1,700 shp WZ16 engine in the 7-ton AC352 helicopter.

“We have been working for more than 40 years with the Chinese helicopter industry,” says Hervé Pasbecq, General Manager of Safran Engines China, with increasing levels of cooperation. Safran powers

the single-engine Avicopter AC311/311A helicopters, and the twin-engine Harbin Z-9/H410/H425/AC312A and the updated AC312E. That series owes its origins to the Aerospatiale Dauphin built under license by Hafei from 1981.

“We have some other projects as well,” says Pasbecq, but he would not disclose details. Avicopter has yet to announce engine selections for its highly-modified AC312C program, based on the AC312A, and the under-development 3-ton-class AC322 for which Safran is proposing the Arrius 2.

Until five years ago the majority of Turbomeca's engines in China were license-built by Chinese partners,

but now more Western-built Safran engines are entering service in imported helicopters. Consequently in 2013 Turbomeca opened a maintenance center in Tianjin for Arriel 2, Arrius 2 and Maquila 1 and 2 engines to supplement the overhaul facilities of its Chinese partners.

Safran is also gearing up to support deliveries into China of the new single-engine Bell 505 JetRanger X from the beginning of 2018. That helicopter is powered by a U.S.-built Safran Arriel 2R turboshaft, and Bell has announced contracts with Chinese customers for more than 75 aircraft.

Safran Helicopter Engines is here in Hall 1, **Booth C507.**

—John Morris



Avicopter's AC312E is powered by two Safran Helicopter Engines Arriel 2H turboshafts.

授权中国合作伙伴制造，但现在更多的西方制造的发动机随着进口直升机进入中国市场。因此，2013年，透博梅卡公司在天津开设了一个维修中心，以弥补其中国合作伙伴对阿赫耶2、阿赫尤2和马基拉1、2发动机的大修能力。

赛峰集团也正在加紧准备2018年年初开始

向中国交付的新型单发贝尔505 JetRanger X直升机的支持工作。该直升机由美国制造的阿赫耶2R涡轴发动机提供动力，贝尔公司已经宣布与中国客户签订超过75架直升机的订购合同。

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First Two New K-Max for China

两架新K-Max直升机来到中国

The world's only dedicated single-seat, medium lift helicopter is back in production after a 10-year lapse, and the first two are going to China.

Kaman Aerosystems' K-Max Aerial Truck helicopters will be used to fight fires by Guangdong Juxiang General Aviation Company. They were purchased by Lectern Aviation Supplies Co., of Hong Kong, which will obtain approval for the type from the Civil Aviation Authority of China (CAAC).

Helicopter legend Charles Kaman designed the K-Max in the 1990s, using his patented counter-rotating, intermeshing-rotor design for an aircraft optimized to haul cargo back and forth as efficiently as possible with just one engine and a minimized, single-seat fuselage. About 35 were built before production ceased in 2003, and 21 are still in service around the world. The new production run of 10 K-Max's is valued between \$75-85 million, the company says. All have been sold to customers in the U.S. and Europe, in addition to the two for China, and more could be produced if there is enough demand.

The K-Max can lift up to three tons (2,722 kg) externally at lower altitudes and 5,000 lb (2,268kg) at 8,000 ft altitude (2,446 m). It is designed for up to 30 trips an hour, whereas most helicopters can manage only one or two cycles in that time.

In 2010, Kaman teamed with Lockheed Martin on a \$45.8 million contract to use two unmanned K-Max helicopters in Afghanistan to deliver supplies to the U.S. Marine Corps. Over 33 months they hauled 4.5 million pounds (2.04 million kg) of cargo, demonstrating their capability to keep operating reliably in harsh, hot-and-high conditions.

The K-MAX fleet has accumulated more than 340,000 flight hours since FAA certification in 1994. **-John Morris**



世界上唯一的单座、中型起重直升机在停产10年后恢复生产，最初的两架来到了中国。

广东九祥通用航空公司将采用卡曼航空系统公司的K-Max直升机用于消防救援，它们由香港Lectern航空器材有限公司购买，并将获得中国民航局（CAAC）的批准。

直升机传奇查尔斯·卡曼（Charles Kaman）在20世纪90年代设计了K-Max，使用反转啮合双旋翼设计的专利优化了飞机，使其只凭一台发动机和最小化的单座机身来尽可能高效地运送货物。K-Max在2003年停产前共生产了约35架，目前全球仍有21架正在服役。10架新生产的K-Max运营价值在7500-8500万美元之间，除了中国的两架外其余的

都被卖给了美国和欧洲的客户，如果有足够的需求，还可以生产更多的产品。

K-Max可以在低海拔吊运约3t重的物品，在2446m的高度吊运2268kg的物品。它每小时可以完成多达30次起吊，而大多数直升机只能在相同时间内完成一到两次。

2010年，卡曼与洛马公司合作，以4580万美元的合同，在阿富汗使用两架无人驾驶的K-Max直升机向美国海军陆战队提供物资。超过33个月的时间里，K-Max运送了2040吨的货物，这表明它们具备在高温高原的恶劣环境下可靠运行的能力。自1994年的FAA认证后，K-Max已经累积了超过34万个飞行小时。



The first K-Max for China was handed over in the U.S. on July 13.

Simplex Adds Cannon to AC313 Firefighter

Simplex公司为AC313提供消防水炮



An AC313 shows the range of its water cannon.

Simplex Aerospace has turned the AC313 into a firefighter with a punch with the addition of a powerful water cannon that can target flames in hard-to-reach places such as high-rise buildings.

The U.S.-based company had earlier developed a firefighting tank and water-drop system for the AC313, and has delivered eleven to customers in China. It believes the systems are the first developed for a Chinese-manufactured helicopter.

The Model 380A Fire Attack tank for the AC313 holds some 4,000 liters (1,050 U.S. gals). It features a retractable hover pump similar to that on the Sikorsky Firehawk and the Airbus Helicopters EC225.

The first Model 580 SkyCannon delivered into China is being demonstrated here at the show on an AC313. The 7.3-meter-long boom can shoot up to 40 meters, and is controlled by an operator in the main cabin. It can fire a constant water jet for up to 6.5 minutes with the Model 380A tank.

Other features include a camera system integrated into the AC313's multifunction displays instead of using external cargo mirrors, providing enhanced visibility and situation awareness for hover pump and door operations. The tank also incorporates data recording, level sensors and an advanced door system for wheeled helicopters. It can be filled with either water or foam and retardants.

Simplex, which is exhibiting here in Hall 1, **Booth D703**, also makes firefighting and water cannon systems for Western- and Russian-made helicopters, as well as agricultural spray systems.

—John Morris

The AC313 can also dump 4,000 liters (1,050 U.S. gals) of water from above.



美国Simplex公司已将AC313直升机武装成了一名空中消防员，为其安装了一个功率强大的水炮，它可以瞄准常规消防水枪难以到达的地方，诸如高层建筑物。

Simplex早前为AC313开发了消防水箱和投水系统，并已向中国客户提供了11套设备，这是首款为中国造直升机开发的消防灭火系统。

AC313所采用的380A型灭火水箱可以携带约4000升水，它具有与西科斯基S-70A“灭火鹰”（Firehawk）和空客直升机H225类似的水泵。

首套装备AC313的580型SkyCannon水

炮，水管长达7.3m，喷水射程高达40m，搭配380A型水箱可持续喷水6.5分钟。

该消防套件的其他功能包括整合到AC313驾驶舱显示器中的相机系统，它可以使直升机不必使用外部货物镜，提高了直升机悬停时操作汲水泵和投水舱门的可见性和态势感知力。水箱中还包含有数据记录器、液位传感器等设备，可以携带水或泡沫阻燃剂。

除中国直升机以外，该公司也为西方和俄制直升机提供消防水箱和水炮系统，此外还可以提供农业喷雾系统。

Asian Sky Releases Survey of GA in China

亚翔航空发布《中国通航调查报告》

Have you ever wondered how many general aviation aircraft there are in China? The answer has remained elusive until now due to the country's vast size and difficulty in accessing reliable information.

But now Hong Kong aviation services specialist and consultant Asia Sky Group has counted them all. Applying the expertise it has gained with its regular business jet and helicopter surveys that cover Asia as well as China, and insights from sister companies that include Avion Pacific, which buys and sells helicopters and GA aircraft in China and throughout the region, it has compiled its first "China GA Report."

It's available here at the show—in Chinese only—at Asian Sky Group, Hall 2, **Booth A803**. Or for download at www.asianskygroup.com/media-reports

For those of you who would like to see the report in English, you must wait until the National Business Aviation Association convention in Las Vegas next month, where it will be released with fanfare. Or just read on here for a sneak preview of the highlights.

The survey is remarkable in that it doesn't just list aircraft totals by manufacturer and type (business jets, helicopters, turbine utility and piston-engine aircraft), it also tells you where they are and who operates them. It delves into China's policy to boost GA by elevating it to a separate industry, and how it will play a major role in economic development. The report tells how there will be over 700 GA airports by 2020, and how development of aerospace industrial parks around them could lead to a production overcapacity that will, ironically, stifle growth.

And it explains why the much-talked-about pilot shortage will hit GA harder than the airlines (who wants a low-paid job as a GA flight instructor?), perhaps adding another damper to the unbridled GA boom that all have expected to happen for the last 20 years.

Yet the boom has begun, Asian Sky says. GA has had annual growth in the number of aircraft of over 10% since 2010, and the growth exceeded 20% in 2013. And it reported an approximately 15% increase in 2016.

As of 2016 year end there were 2,595 aircraft in the Mainland China GA fleet. Fixed-wing totaled 1,809, including 329 business jets, 252 turboprop and 1,228

piston and electric aircraft.

The rotorcraft fleet is 57% turbine with 514 helicopters, followed by 363 piston-engine helicopters and 20 gyroplanes.

While the industry talks of growth rates by the turbine helicopter fleet over the last several years in the order of 20%, growth in the first half of 2017 has been a mere 3%. But this is counting deliveries rather than orders, and subtracts those helicopters that have been sold out of the country.

Airbus' light-single H125 is the most popular turbine type in China, with 88 in service representing 17% of the total fleet, the report says.

—John Morris



香港亚翔航空在第四届天津直升机博览会上发布了其第一份《中国通航调查报告》。报告按照制造商和飞机类型（喷气公务机、直升机、涡轮发动机通航机、活塞发动机飞机）列出了飞机数量，以及飞机的运营商和基地。报告深入研究了为加强通航发展的产业的政策，以及通用航空业在国民经济发展中的重要作用。《报告》估计到2020年，中国将拥有700多个通航机场，并展望了围绕这些通航机场的航空产业园的发展。

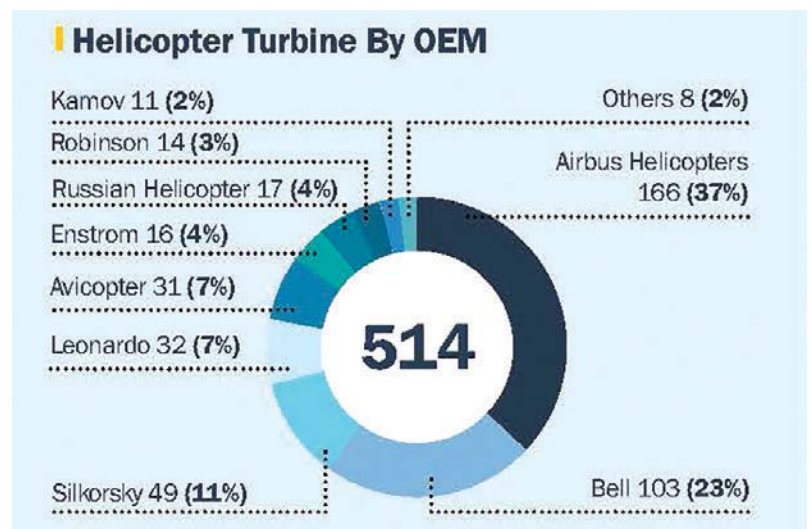
根据亚翔航空发布的报告，2010年以来，通航飞机数量的年均增长率

超过10%，2013年这一数字达到20%，2016年的增长率约为15%。

截至2016年年底，中国大陆拥有2595架通航飞机，其中固定翼飞机为1809架，包括329架喷气公务机、252架涡轮飞机、1228架活塞式和电动飞机。

涡轮直升机514架，占旋翼机机队的57%，活塞发动机直升机363架和旋翼机20架。

《报告》显示，空客直升机公司的H125轻型单发直升机是中国最受欢迎的涡轮直升机，目前有88架直升机在中国服役，占全部机队数量的17%。



Make Direct Connections to Decision-makers and Industry Leaders in Essential Segments in China Aviation Communities!

ShowNews DAY 1 THURSDAY

AVIATION WEEK & SPACE TECHNOLOGY / AIR TRANSPORT WORLD / SPEEDNEWS

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

PLA Helps Host Helo Expo
解放军助力天津直升机博览会

Avicogtek Looks to Future
中航工业集团展望未来

Orders in the Hundreds
中航工业直升机订单达数百架

Leonardo Helps With EMS
莱昂纳多助力中国EMS项目

Airbus: China Beats U.S.
空客: 中国超越美国成为最大市场

Bell to Assemble in China
贝尔直升机将在中国组装

Beijing 999 Buys Russian
北京999直升机采购俄罗斯直升机

EMS Builds Momentum
EMS直升机项目势头强劲

AVIC Helicopters Progress
中航工业直升机项目进展

Thales H135 Sim Approved
泰利斯H135直升机模拟器获批

Heavy Lifter Deal Nears
重型运输机采购谈判接近尾声

Army Aviation in New Era
中国陆军航空兵进入新时代

中航传媒 国际航空
AVIATION WEEK

国际航空 ShowNews WEDNESDAY

AVIATION WEEK & SPACE TECHNOLOGY / AIR TRANSPORT WORLD / SPEEDNEWS

September 16, 2015
Aviation Expo/China 2015
第十六届中国国际航空展览会

AVIC On Track on Goals
中航工业在目标轨道上

"New" Ameco Emerges
新Ameco公司即将诞生

ATR Pushes Into China
ATR进入中国市场

ARJ21 Ready for Service
ARJ21即将投入运营

China Wants More A330s
中国想要更多A330

P&W Geared Fans for China
普惠为中国的发动机项目做准备

Boeing Boosts Forecast
波音上调对中国市场的预测

Demand Builds for MA700
对MA700的需求正在增加

China's New Projects Make Progress
中国的大飞机项目取得进展

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UAS 特刊 UAS CHINA 2014

2014第五届国际无人机大会暨展览
UAS China Conference & Exhibition 2014

2014年9月16日 第1期

“军民融合”助力中国无人机产业蓬勃发展

2014(第五届) UAS CHINA CO

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ShowNews DAY 1 THURSDAY

BUSINESS & COMMERCIAL AVIATION / AC-U-HWIK / AIR CHARTER GUIDE / AIRCRAFT BLUEBOOK

April 11, ABACE 2017
2017亚洲公务航空会议与展览

ABACE Sets Records
ABACE创纪录

Chinese Satcom for Arinc
中国卫星通信用于阿林克

Gulfstream Leads in China
湾流在亚太地区领先

Boeing BBJ Has New Chief
波音BBJ有新总裁

Rolls-Royce Adds Support
罗尔斯罗伊增加支持

Comlux Seeks Partners
Comlux寻找合作伙伴

LY Flight as Mercedes-Benz
LY飞行如奔驰

Bombardier Opens MRO
庞巴迪在中国开设MRO

China Forms Bivler Group
中国成立比亚勒集团

VistaJet Wants Millennials
维斯塔捷特想要千禧一代

Cirrus Adds Support Here
西锐增加本地支持

Clark Air Base to Grow
克拉克空军基地将扩大

Cessna's 300th Caravan
塞斯纳300架卡拉文

中航传媒 国际航空
AVIATION WEEK

国际航空 ShowNews TUESDAY

AVIATION WEEK & SPACE TECHNOLOGY / AIR TRANSPORT WORLD / SPEEDNEWS

November 1, 2016
Airshow China
第十一届中国国际航空博览会

Comac Airlines Progress
商飞飞机研发取得突破

AVIC Looks International
中航工业走向国际化

China's New Engine Group
中国新发动机集团

A Trillion Dollar Market
万亿美元的飞机市场

A350 Starts China Tour
A350开始中国之旅

Embraer Sees Airline Sales
巴西航空工业集团新机

ATR's Prospects Pick Up
ATR前景看好

CS29 Model to be Unveiled
中航工业展示新型教练机

See the Laureate Winners
第八届获奖者

Honeywell for GPS Landing
霍尼韦尔助力中国航空

C Series Debuts in China
C系列中国首秀

J-20 Appears Today
J-20今天亮相

Boeing's China Completion Center
波音完工及交付中心落户舟山

中航航空研究院13:00在1号馆发布民机市场预期年报

UAS 特刊 UAS CHINA 2014

2014第五届国际无人机大会暨展览
UAS China Conference & Exhibition 2014

2014年9月16日 第1期

“军民融合”助力中国无人机产业蓬勃发展

2014(第五届) UAS CHINA CO

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航展	航展时间	地点	出版时间	语言
新加坡航展 Singapore Airshow	2018年2月6-11日 Feb.6-11,2018	新加坡 Singapore	2018年2月6-8日 Feb.6-8,2018	英语
亚洲公务航空大会及展览会 ABACE	2018年4月17-19日 Apr.17-19,2018	中国上海 Shanghai China	2018年4月17-19日 Apr.17-19,2018	中英双语
范堡罗航展 Farnborough International Airshow	2018年7月16-22日 Jul.16-22,2018	英国伦敦 London UK	2018年7月16-19日 Jul.16-19,2018	英语
中国国际航空航天博览会 China International Aviation & Aerospace Exhibition	2018年11月6-11日 Nov.6-11,2018	中国珠海 Zhuhai China	2018年11月6-8日 Nov.6-8,2018	中英双语

作为中国领先的航空出版传媒机构，中航出版传媒有限责任公司（简称“中航传媒”）将携手美国航空周刊集团在2018年隆重推出系列航展中英双语出版物，覆盖民用航空、直升机、无人机、航空维修等多个领域，敬请关注！



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