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— 一个伟大变革的表征 —

南昌 CJ-6 初教六飞机

A Symbol of Great Change...

The Nanchang CJ-6



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—一个伟大变革的象征—

南昌 CJ-6初教六飞机

Written by Raymond Berg

翻译：胡明艳

A Symbol of Great Change...

The Nanchang CJ-6

In late 1957 great changes were taking place in the Chinese aviation industry. Aeronautical Engineers Bushi Cheng and Lin Jiahua began work in Shenyang on a trainer design that addressed the shortcomings of the Russian Yak-18. The design they delivered featured an aluminum semi-monocoque fuselage, flush-riveted throughout and introduced a modified Clark Airfoil wing design with pronounced dihedral in the outer sections. Wind tunnel testing validated the design, and in May 1958 the program was transferred to the Nanchang Aircraft Manufacturing factory where Chief Engineer Goa Zhenning initiated production of the CJ-6.

The dream of Bushi Cheng and Lin Jiahua was realized on August 27th, 1958 when the first flight of the CJ-6 was completed by Lu Maofan and He Yinxi. Now, fifty years later, the CJ-6 has found a new home in the general aviation market. Because of its simple systems, outstanding reliability, inexpensive initial purchase price, and excellent flying characteristics, over 200 CJ-6A's have found their way to private owners in the United States and multiple others have found homes throughout the general aviation community around the world.

Most of the CJ-6 aircraft in the United States are certified under the Experimental Exhibition category which does have some minor flight restrictions but is free of expensive FAA required parts approvals and allows owners to develop their own modifications. The CJ-6 now proves it's not just modern aircraft that are getting faster, better, and cheaper in general aviation. China's small piston-powered propeller-driven military trainer is adopting new technologies and modifications to make flying faster, safer and more affordable.

A visit to Bill Blackwell's shop in Deer Valley, Arizona revealed a thriving CJ-6 community. His shop specializes in CJ-6 restoration, maintenance and modification. During this visit we found one aircraft nearing the end of its restoration process and 4 others undergoing various states of annual inspections. The pride and craftsmanship Bill puts into each project is obvious. The extent of which is evident when one sees an engine built by Bill. I do not believe that 50 years ago anyone would imagine a CJ-6 with lacquer paint and chrome engine accessories.

One of the most popular modifications performed at Bill's shop is the installation of the Vedeneyev M-14P radial engine developing 360HP with a two bladed constant speed propeller. This allows the aircraft to double its rate of climb as well as improve its altitude performance. Blackwell has even fitted a 475HP modified M-14 engine with a composite three bladed constant speed propeller to a CJ-6, a testament to the ruggedness of the original aircraft design, that this much power can be added with little to no major airframe modification. Some other popular modifications are to increase the fuel capacity of the aircraft from 42 to 62 gallons, and adding custom "Malcolm hood" canopies to allow more head clearance for taller pilots. Combined with the installation of new lightweight avionics and radios providing access to modern navigational aids, the CJ-6 becomes a capable and enjoyable cross country aircraft.

With such ease of maintenance, excellent handling qualities and affordable operational costs, it's no wonder the CJ-6 has become very popular in the general aviation community. This aircraft has allowed the world of general aviation to see how Chinese aircraft are built and the value of a rugged well thought-out design. The CJ-6 has been transformed from a training tool



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1957年年底, 中国的航空业发生了一场巨大的变革。航空工程师程不时先生和林家骅开始了针对Yak-18教练机缺失的新飞机设计。他们设计的机身采用铝合金“半硬壳”型式, 埋头铆钉贯穿整个机身, 并引进了改良的外部上反角的“海鸥式”机翼设计。风洞测试验证了这个设计, 在1958年的五月这个项目被转移到南昌飞机制造厂, 在那里, 总工程师高镇宁开始了CJ-6的生产。

当1958年8月27日由Lu Maofan和 He Yinxi完成CJ-6第一次飞行, 程不时先生和林家骅先生梦想在终于实现了。五十周年过去了, CJ-6已经在通用航空市场找到了新的地位。由于它简单的系统, 杰出的可靠性, 廉价的初始购买价格, 还有它卓越的飞行特性, 在美国, 已经有超过200个CJ-6的私人拥有者, 更多的CJ-6 也被广泛的用在世界通用航空领域。

在美国大多数的CJ-6飞机在试验展览飞机类别项下被认证的, 它只有一些小的飞行限制, 并且免于昂贵的FAA部件的认证并允许拥有者有自己设计方面的修改。CJ-6现在已被证明它不仅是现代化的飞机, 它正变得更快, 更好, 在通用航空领域也是较为便宜的。这个中国空军以前采用了小活塞动力驱动螺旋桨的训练机换上了新的技术和改装可以使飞机飞得更快, 也更安全和经济的。

一次去亚利桑那州Bill Blackwell修理车间的拜访, 可以看出CHJ-6这个机型的繁荣。他的修理车间擅长于CJ-6的重建, 维修和改装。在这次拜访的过程中, 我们看见一架即将结束复原过程的飞机和4架其他正在进行的每年一次不同形态检查的飞机。Bill对工作成果的骄傲和自豪是显而易见的。当你看见一个由比尔修复的发动机时, 你可以轻易的感受到他的骄傲和自豪。我认为50年前不会有任何人能想象到CJ-6用亮丽的表面油漆的和使用铬合金电镀的发动机附件。

在Bill的修理车间最受欢迎的一种改装是安装Vedeneyev M-14P新型发动机, 驱动带有两个叶片的360马力的恒速螺旋桨推进器。这使飞机的爬升速度提高了两倍, 并且也改善了它高空飞行的能力。Blackwell安装过一个带有三片复合材料恒速螺旋桨推进器的475马力的改良的M-14发动机到CJ-6上, 这也是对原始飞机设计坚固的证明。其他的一些流行的改装是增加飞机储存燃料的能力从42加仑到62加仑, 再加上定制的“Malcolm罩”座舱盖可以使更高个子的飞行员有更大的头部空间。通过安装新的轻型航空电子设备 and 无线电 提供现代导航设备, 使CJ-6成为一个性能优越让人喜欢的越野飞机。

有如此容易维护和卓越的操作性能以及负担得起的操作费用, CJ-6在通用航空领域如此受欢迎就不足为奇了。这飞机也使世界通用航空看到了中国的飞机是建立在深思熟虑的设计基础上的。CJ-6已经从一个训练工具转变为一个惠及世界范围内平民百姓的机器, 但是也将继续面对科技的, 经济的和政治上的持续挑战。

在中国范围内, 一些公司和飞行专业人员正在建立飞行支持组织, 设计者构造计划了更好的设备和飞行器, 教师们正在寻找新的方式来利用航空, 鼓励学生进一步学习, 信息的传播正在告诉世界小飞机和小机场可以使整个国家受益。许多人的观念里, 中国人设计和制造轻型飞机曾经是一个梦想, 但是很少人认识到, 这个梦想已经实现了! CJ-6就是事实, 并且为中国的通用航空业的建立和发展奠定了一个坚实的基础。

CJ-6不论是以前还是现在都是中国伟大变革的表征, 就像中国的文化一样, 它是独一无二并经得起时间考验的!

to a machine to enrich people's lives all over the world. It continues to develop a track record of great accomplishments which go largely unknown in the face of technological, economic, and political challenges.

All across China, corporations and aviation professionals are building aviation support organizations, innovators are dreaming up plans for better equipment and aircraft, teachers are finding new ways to use aviation to encourage learning among students, and communicators are telling the world how small planes and community airports can benefit the nation. For many of these people the concept of a Chinese designed and produced light aircraft has been a dream, but what few may realize, is that dream has already become reality. The CJ-6 is that reality, and has established a solid foundation for the Chinese general aviation industry to grow and build on.

The CJ-6 was and is again a symbol of great changes taking place in China, and like Chinese culture, is unique and will endure.



中国通航之友协会在2008年通航交流会上向程不时先生致意。

放歌异国的天空

作者：程不时



21世纪开始的第一年的春天，我收到美国EAA（Experimental Aircraft Association）的邀请信，特邀我作为嘉宾参加2001年7月在美国奥什科什举行的“飞行大会”。

美国威斯康星州温纳贝戈湖畔，天气晴朗，飘洒着朵朵浮云。在号称“全球第一繁忙机场”的奥什科什机场上，正在举行世界上规模最大的“飞行大会”。跑道旁宽阔的草地上停着数千架从美国及世界各地飞来的各种飞机。在飞机旁到处涌动着参观的人群，仿佛在举行盛大的狂欢节一般。跑道旁，上万人头攒动，人们神情专注地在观看精彩的飞行表演，特技类飞机拖着彩色尾烟在空中翻腾。

这时远处传来隐隐的机声。云层下数十架飞机组成的庞大机群逐渐临近，排成整齐队形的飞机在阳光下闪烁着光亮，蔚为壮观。机声越来越大，低沉而和谐，直到声音铺天盖地，仿佛天穹下奏响了巨大的管风琴。机场上的广播喇叭响起：“这是中国的‘初教6’组成的编队，正在通过会场。我们荣幸地告诉大家，这架飞机的设计师就在现场……”

在美国天空的“初教6”编队机群



我这时已经进入72岁。被邀请的原因是我在27岁时作出总体设计的飞机“初教6”，这时在美国已经卖出约200架，成为在美国销售最多的中国飞机，很受买主们的欢迎。买主们在美国组织了一个协会，他们打算组织一批飞机参加当年的“飞行大会”，并进行编队飞行表演。这个航空协会辗转打听到我与这架飞机的关系，特邀设计者去和这些买主们相见。

我首先参加了美国驾驶员们在美国的曼尼托沃克（Manitowoc）机场的编队训练，为期一周。在这里我乘坐这种飞机升空体验了飞行。这架45年前我在图板上画下第一根线条的飞机，我在国内竟没有机会实际乘坐过。这次在美国登机升空，飞行的感觉非常平稳舒适，特别座舱的视界宽阔，使我能自由地观看到天空和地面广大的区域，伴飞的僚机在空中的姿态和动作也都清楚如画。然后，在奥什科什飞行大会开始时，协会组织了庞大的机群编队从曼尼托沃克起飞，飞越宽阔的威斯康星河，直达奥什科什机场。这一年参加奥什科什飞行大会的飞机约一万架，会期一周，参观者总数约75万人。我满头白发被特邀乘坐在领队飞机上，带领机群浩浩荡荡飞入大会会场。

该协会组织了一次宴会，正式表示对我到达的欢迎，并邀请我在宴会上对初教6的发展历史作一个演讲。我在致词中，介绍了该机研制的经过，着重说明了这是一架由中国自行设计的飞机，而不是如外界某些误传那样是一架外国飞机的改型设计。我列举的事实和例证被到会者接受，他们对此报以热烈的掌声，致词完毕后，全场起立，表示了对中国飞机设计人员的尊敬。

在此以前，中国飞机设计师被美国作为嘉宾邀请去参加飞行大会还是第一次，加以我72岁与27岁数字的偶合，有一定的新闻性。因此这事在美国和我国国内的航空界都引起一定的注意，美国的一些报纸和刊物，以及网站，广播电台等对此作了报导。我国的《航空知识》、《新民晚报》、《产经新闻》等报刊刊登了文章，“上海东方广播电台”作了播送，《民机设计与研究》刊物和《中国少年报》报导的标题是“美国人对中国飞机设计师挠起了大拇指”。美国刊物对我这次访美的报导中，第一句便引用了当初罗马帝国对凯撒大帝击败高卢重大战役胜利的经典描述：“他来了，他看见了，他征服了。”这当然具有某种夸张，但说明他们对邀请到我进行这次访问满意的心情。

“初教6”是我早期在绘图板上绘出的飞机之一。距今已经整整半个世纪。1957年，我们设计的第一架飞机“歼教1”的研制已经进入发展及试制，设计室主任徐舜寿召集我、顾诵芬、冯钟越等当时“技术委员会”的成员，一同讨论下一个型号应该设计什么样的飞机。大家打开思路，曾提出供国家高层工作人员出差用的喷气式公务机、小型多用途飞机、靶机等多种设想。初级教练机是当时提出并作了重点讨论的机型之一。

50年代我国培养飞行员使用的初级教练机是苏联的“雅克18”，当时在我国的南昌飞机厂已经按照苏联图纸投入生产。“雅克18”是一种构架式蒙布结构，后三点起落架的飞机。当时大部分先进飞机都已经采用前三点起落架，飞行学员却必须从后三点起落架飞机学习飞行是不合理的。那时的训练体制，是飞行学员在“雅克18”上学会基础的飞行驾驶技术之后，还要经过“雅



程不时72岁时在美国登上27岁时设计的飞机“初教6”

“具有特色的设计”

克11”高级教练机，及“拉9”等飞机的多级培训之后，才能够驾驶在第一线服役的喷气战斗机。

当时苏联已经推出一种前三点的改型设计“雅克18A”，使用方有意思要求航空工业部门改为生产这种苏式机型的改型。当时我们认为：中国的飞机设计力量在已经设计了“歼教1”喷气式教练机的基础上，独立设计出螺旋桨式初级教练机已没有技术上的困难。自行设计还可以使初级教练机在技术上其向“歼教1”靠拢并形成系列，把“多级培训”压缩为“初教—歼教—现役”的“三级培训”体制。

于是设计室对“初级教练机”的设计作了一些初期蕴酿。当时有个别技术领导还是把设计工作主要看成是“再现”一个现成的产品的过程，就把画一张飞机草图的任务交给一位刚从南昌调来的技术人员，因为他来自生产“雅克18”的工厂，必然对这种飞机比较熟悉。这位技术领导还越过总体设计组，直接对该方案的草图绘制进行技术指导。果然，这样绘出的草图，基本上是“雅克18”的再现，许多设计特点仍然维持原样。

这是出自“工业化”初期的陈旧观念。当时只注重“造出来”，而不强调产品的创新。比如在20世纪初我国最早的一些民族资本家，当他们发现别人的工厂有某种先进的加工设备时，便千方百计去仿造，甚至夜晚派人潜入对方的厂房去暗地里画出图纸。只要照样造出来，便与对方处在了同一竞争地位。但是飞机自诞生起就标志着“技术时代”的到来，在短短几十年内飞机在更高、更快、更大上出现了跨度极大的变化。所以飞机产品的发展单凭“仿造”是没有出路的。不幸这一点在我国航空界却长期不被许多人所理解。

徐舜寿的设计思想一直是主张“熟读唐诗三百首”，推行独立自主进行工程综合的技术路线，而反对“唯某种已有机种论”的人。所以，当上级正式决定开展设计初级教练机的任务之后，以徐舜寿为首的设计室决定放弃那个“仿雅克”设计的设想。

“初级教练机的总体设计，还是交给你这个总体组来重新开始。现在首先需要到另一城市的航空学校去一次，听取一下他们对新教练机的要求。这次就你去吧。”徐舜寿对我说。

记得设计第一架飞机“歼教1”之初，是徐舜寿和黄志千带领我去航校调研的，我当时跟着他们，心里很踏实。而这次却叫我独自一人前往，我这时只有27岁，首次担任此重任，不免有些胆怯。幸好设计新飞机的任务在身，使我内心充实。

航校的飞行教员们对我国即将设计供他们使用的飞机感到十分兴奋。航校为我召开了座谈会，我受到青年飞行教员刘观潮等人的热情接待。我在会上解释我们设计的初步意图，并提出我们特别希望了解的使用方面的几个问题。他们在座谈会上谈后还意犹未尽，会后一批一批来到我在招待房的房间，继续畅谈各种想法。事隔20多年之后，当我的工作已经转到上海，曾经和我畅谈过的飞行教官刘观潮到上海，特地来看我。我很惊奇他还记得我在多年前做的那次“调研”。

也许有人认为，作为一个工程设计人员，本份就是别人规定任务之后，按常规写写算算，勾勾画画。至于去了解一种新产品的周围环境，去列出若干值得注意的因素，排出须解决的问题的优先级，逐个想出解决的办法，似乎不是技术工作本身。但是我设计几架飞机之后体验到，这才是决定飞机成败的最大问题，是临驾于常规操作之上更重要的技术工作。

通过这次调研，我对这架新设计的初级教练机的型式初步形成了几点构想：

首先，结构选择为应力蒙皮的铝合金“半硬壳”型式，因为这种结构在工艺上更容易生产质量的稳定，有更长的使用寿命，并便于维护。我们通过“歼教1”的设计已经掌握了这种更先进型式的设计、计算、和制造技术。为此，我和一位技术领导发生了争论，因为苏联的初级教练机“雅克18”采用的是钢架蒙布结构。有些人有根深蒂固的“仿制”思想，总担心中国人如果不按外国现成的步子走，自己“独出心裁”会带来想像不到的风险，说不定会天塌地陷。但是经过讨论，采用“半硬壳”式结构的意见终于得到一致同意。

在飞机的性能方面，根据当时发动机的功率，飞机的最大时速与最小时速的间隔将小于200公里。为了尽可能扩大这个间隔，我打算在机翼上采取左右贯通的单片式襟翼，这样可以避免增升环流在根部中断而提高升力，也使着陆襟翼放下后更好地起阻力板的作用。这样一来，机翼将成为外部上反的“海鸥式”，颇具特色。

对于初级教练机，失速和反尾旋性能很重要，机翼的外翼应有扭角形成“外洗”，以保证大攻角下不会发生机翼偏坠。同时，为了使尾旋时平尾对垂尾的遮挡最小，我们将平尾位置尽量后移，并将垂尾形状设计成直立的梯形。我本来打算将平尾移到整个机身的最后方，采用左右升降舵一体的办法，可使飞机节省一个部件，但这个方案经过讨论后认为对“初教6”不合适，为此升降舵仍然保留了一般飞机的左右两片。后来整体升降舵的方案在同年我设计的“勤工号”飞机上得以采用。

飞机的起落架将采用前三点型式，这是这次设计的主要目的。

我感到“雅克18”的座舱视界受到较多遮挡，仪表板杂乱，存在很大的改进余地。为此，“初教6”的驾驶舱前方采用整块弧形风档，取消了“雅克18”在风档上的几根立柱，并为“初教6”设计了大块敞亮的座舱罩。

此外，“初教6”原打算采用东欧一种汽缸对置式安排的发动机，以进一步改善驾驶员前方视界。但这种发动机的资料不够详尽，到要用时实际还没有研制出来，并且它没有倒飞装置。这对初级教练机显然不合适，所以后来仍然采用了苏式星形发动机。

我们将“初教6”的仪表板排列尽量向“歼教1”靠拢，希望日后便于飞行学员的过渡。另一方面，我观察到苏式飞机仪表板上有许多安装仪表的螺钉暴露在视线中，在飞行中并无操作与观察的功能。为此，我建议“初教6”的仪表板上安装一块盖板，遮住飞行中没有作用的仪表安装螺钉，使板面干净利索。为此实际造出了一块试样，这安装在木质样机上供飞行员们比较。不料熟悉了“雅克18”的飞行员认为他们对突出的螺钉已经习惯，并不反感。所以这个设计没有在设计中采用。但是今天连汽车的仪表板都不再突出安装螺钉。

总之，在“初教6”的设计中，我们千方百计使型号具有一些特色，形成一种风格，使“初教6”成为一种优于我国当时使用的外国同级教练机的新型号。当时航空工业局局长王西萍评价说：“是一种具有自己特色的设计！”

在作出“初教6”的“总体设计”之后，我首先要求木工车间按总图制造了一架缩小比例的全机模型。我拿到这架小模型高兴万分，它不像世界上任何一架现有的飞机，但各部件安排合理，线条优美。我把这个模型拿到结构设计室的大房间给同事们观看，大家都笑逐颜开，很是兴奋。

我后来又负责在木工车间制出了全尺寸木质样机，从我调研过的航校请来刘观潮等飞行教员前来提意见。在小模型和全尺寸木质样机制造中，对用木质材料如何表现形状复杂的螺旋桨，我使用了自己制作飞机模型的经验体会，站在木工台前，一步一步指导木工如何操作，得到了理想的效果。

根据飞行教员的意见我们对设计进行了必要修改之后，在沈阳“第一飞机设计室”完成了“初教6”的“技术设计阶段”（我国有时又称为“打样设计阶段”）。这时，上级决定该机的详细设计及试制生产转由南昌飞机工厂完成。南昌方面派来接收任务的技术队伍由高镇宁带队。他在清华航空系学习时比我低三班，他的哥哥与我同班。高镇宁当时到宿舍来找他哥哥时我见过他，我们这些“高班生”看来他那时完全是一个小孩。高镇宁后来担任了航空部的副部长，并任中国科协的领导职务。

在沈阳的“第一设计室”派出了一支技术队伍，携带全部总体设计和技术设计的图纸和资料奔赴南昌，和当地的技术力量一同完成了“初教6”的详细设计和试制。我这时在沈阳投入了另一新机种“强五”的总体设计，没有随同前往。

所以，“初教6”是沈阳和南昌两方面合作的集体创造，南昌对这架飞机的完成作出了重要贡献，它是南昌飞机工厂的产品。

国内有一股思潮，不相信中国人设计的飞机。当一架国产飞机在设计中时，他们就说：“不能飞。”到飞起来了，就说“不能用。”这种思潮几十年一贯。就在“初教6”在南昌试制完成并成功试飞之后，管理部门仍然主张生产那种技术状态更差的“雅克18A”，理由是那不是中国设计的。

直至航空管理部门一位新领导上任，对长期的争论十分不满，拍案而起说：“为什么不能用中国自己设计的飞机？”这才在摇摆三年之后于1961年投入生产，成为投入生产的我国第一架自行设计的飞机。

“初教6”在初次试飞22年之后，于1980年被航空工业管理当局授予“质量金奖”。到20世纪末，连续生产了40多年，共产出约2,600架飞机，受到飞行教员和学员的交口称赞，并出口国外，广泛受到欢迎。

自从“初教6”被高镇宁接到了南昌，45年后，我却与这种飞机在海外意外相逢。

那是在1999，我进入了70岁，已经从飞机设计岗位退休。一天，我正出门去出席上海科协的会议，室内电话响，转身回房接电话。电话里讲英文，说你是某某吧，我说是的。他问你是否设计了CJ飞机？我说不是。我当时想，我并没有听说过这种飞机。电话中问我是否设计过飞机？我说是的。他又问我设计过一些什么飞机，我说有一种初级教练机，还有一些别的。他说那就对了。

我这才猛醒原来CJ就是“初教”的汉语拼音。便说是的是的，你在哪里打电话？对方说，是从美国。他刚从中国回到美国，在中国时打听到我的电话，因为他在美国买了一架CJ。我说你对这飞机的感觉怎么样，他说很好。他说美国有很多人买了这种飞机。他自我介绍他是美国联合航空公司的一个767飞机的机长，各叫哥斯比。他谈起CJ飞机来，简直有意犹未尽之感。

又过了几个月，一天我接到哥斯比从东京来的电话。他于当天晚上驾驶航线班机飞抵上海，约我到他们的驻地“假日旅馆”一聚。他是一个个子高高，很热情诚恳的人，比我小10岁。那天我们共进晚餐。

他告诉我，这种飞机在美国很受购机者欢迎。他是在驾驶航班飞行到伦敦时，在一家书店看到《中国航空40年》的英译本，便买了一本，从初教6的设计过程中看到我的名字。他飞航班到北京时去参观了在北京北郊的航空博物馆，在那里打听到我的电话。他说在美国购买这种飞机的人们有一个协会，常常在各地作编队飞行及特技表演。我在谈话中看得出他是一个对飞机和飞行极为热衷的人。我谈了一些40多年前初教6设计的事。似乎他也觉得与我很谈得来。他回到美国后，把和我见面的经过写了一篇文章，题名《我会见了他本人》，发表在协会的通讯上。

2000年秋天，我突然接到这位哥斯比机长的电子邮件，称在美国的初教6拥有者希望在2001年的“飞行大会”上与我相见，作为他们的贵宾。于是我得到美国与阔别了多年的“初教6”再作了一次亲密接触，并第一次乘坐上我在风华正茂时在图板上画下第一根线条的飞机，翱翔在异国土地的上空，真有意外地“放歌异国天空”之慨。



在美国我听到美国人对CJ发出一致好评，盛赞这是一架好飞机。有的人原来已经有了一架“雅克”，但卖掉了雅克改用CJ。一个叫布莱因的对我说，他飞过25种飞机，其中CJ最好。他在停机线上对络绎不绝的参观者也这么说。还有人对我说，每种飞机都有自己的缺点，但是CJ没有缺点。我问过联系邀请我的哥斯比，CJ究竟有什么好，他说：“飞行中重复性好，便于编队飞行，没有怪癖”，他对这架飞机使用的形容词是“忠诚”（Honest）。

有人向我表示，他最欣赏的是CJ机翼的外扭，失速时是非常温和的，改出尾旋只需松开驾驶就会自动改出。有人表示很喜欢CJ的海鸥形机翼，一看就与苏式“雅克”不同，很好看。对初教6采用的“半硬壳式”铝合金结构，人们称赞不已，说真是结实，已经用了几十年了，状态还那么好。他们中有的买的是二手旧飞机。

他们也反映了一些在美国的使用条件下的具体意见，如某些操纵器件和仪表不符合美国的使用习惯等。但是这毫不妨碍他们认为CJ在总体上是一架好飞机。有人向我说，即使你没有设计过别的飞机，只要有CJ就是很了不起的成就了。难得有人在网上发表感慨说：但愿他本人在72岁时也有这样的风光！

我回到上海后，收到一位与会者从美国发来的电子邮件，说他从奥什柯什回家乡，路途十多个小时。他要感谢设计出这样好的飞机，使他途中一切顺利，一路愉快。

老实说，对我在20多岁时在图板上绘出的飞机，事隔近半个世纪之后在海外听到这样好的评价，受到挑剔的美国买主如此欢迎，这是我自己事前完全没有想到的。

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Vertical aerial view of the Napa Valley. Aerial Archives delivers aerial and satellite photography for locations around the world.

凌禾波：从天空创造了独一无二的图像

Herb Lingl: Creating Unique Imagery from the Sky By Susan Terrell

凌禾波对摄影的热情和飞行的热爱指引他走向一个成功和有意义的职业。凌禾波是一个商业的飞行员，一名获过奖的摄影师，Aerial Archives公司的创始人，Aerial Archives开拓了航空摄影和录像的业务，提供授权的航空图像和卫星图像提供给世界范围内的客户。Aerial Archives立足于Sonoma的Petaluma机场，距加州旧金山不到一小时的车程。

凌禾波独特的航空图像使他有幸与国际客户一起合作。他的作品已经被出版成书籍，杂志，曾在旧金山和蒙特利尔机场进行个人作品展，旧金山美术馆和美国联邦航空管理局也都有展示他的作品。这个工作把他带到过很多人口密集的大都市，例如纽约，东京，洛杉矶和墨西哥城；也把他带到偏远的地区，例如巴拿马的热带雨林，尼加拉瓜丛林，内华达州的沙漠和亚利桑那州的大峡谷；也去了世界上许多美丽的小城镇和村庄。

当在美国西部工作的时候，凌禾波经常使用他的1946年的Taylorcraft，高翼结构飞机，有着非常低的失速速度，良好的滑翔比和长时间空中逗留的能力。但是许多不同的任务需要不同的平台，例如需要达到22000'的高度来拍摄时使用一架塞斯纳大篷车，在火山坑拍摄时使用Popocateptl；尾随一架空客A320进行跟拍时使用一架Lear25B；或使用一架动力滑翔翼低空飞过噪声敏感区；曾经使用一架Bell喷气直升机夜间空中摄影滚石乐队的纪录片。

随着凌禾波的生意的发展，他感到很惊讶他的客户包含了

各种类别和用途。从广告到法律案件，从一次大规模的事件到持续进行的建筑工程：从高科技调查到需要视觉刺激的艺术景观，客户和项目的差异性从来没有让凌禾波减少他对自己工作的兴趣和热情。

广告任务有时会很刺激，富有创造性的合作，因为预算使得产品更广泛，也创造了团队合作。“与有创造性的客户合作，常常能激发我的灵感，使我产生新的主意。”举例来说，凌禾波引用了和美国快递公司一起工作的Jason Anello的案例，他是纽约一个广告代理公司Digitas的艺术指导。在和Anello电话交流后，他的脑海里马上勾勒出了此次活动的概念，凌禾波侦查了候选的几个摄影位置，并且创造了一个样本图像，“要不是有航空摄影，我没有办法凭空创造出来”和凌禾波在纽约的一次碰面中，Anello选定一个位置和风格，然后飞到旧金山参与到凌禾波的实际摄影活动当中。凌禾波的工作是和广告公司和公共关系公司合作，否则照片就不会存在。

当在空中拍摄的时候，凌禾波是带着这样的想法工作的，通常情况下只有一个机会获得一张独一无二的好照片，所以全面的规划是必不可少的。当凌禾波接到夜间拍摄加州Palo Alto城百年庆典的任务时，他知道提前规划将是很关键的。他决定启用一个3千瓦的闪光灯，当凌禾波相机的快门打开的时候，无线电就会传输信号，闪光灯就会马上启动。在Palo Alto消防队的高层云梯车和无数助手的帮助下，凌禾波



为加州科学院的杂志中的文章拍摄的加州Napa盐池的鸟瞰图。
Aerial view of salt concentrators in Napa, California created for an article for the California Academy of Sciences magazine.

的团队把闪光灯放在这个事件过程中的战略区域位置。几架直升机试飞帮助确认接收器实际触发了所有的闪光灯，一位有技能多年军事飞行经验的直升机驾驶员保证了任务中飞行的部分，飞行任务执行的稳定性是非常必要的，因为这对凌禾波拍摄这些独一无二的空中照片所需要的混合闪光灯和环境光线是非常必要的。

除了Palo Alto的百年庆典事件，凌禾波也从空中拍摄过斗牛比赛，宗教游行，音乐会，开幕庆典，历史性的体育赛事，汽车赛事和许多其他的事件。

凌禾波也喜欢科研性的任务，因为他们经常让他有机会用技术来工作以满足他科研性客户的要求。当美国地质勘探局要求他在浮游植物开花和沉淀物漂浮项目上工作时，他大胆的尝试使用众多的成像技术来收集科学家所需要的数据。当一个大学的社团和工业科学家雇佣凌禾波来创作后来成为第一个航空拍摄的光污染研究，凌禾波首先进行了许多飞行测试来提供一系列的图像选择给他的客户，以确保他们从照片中获得最可能有用的数据。这些客户最终收到了在直升机夜间执行飞行任务期间凌禾波使用一个安装了旋转仪的照相机拍摄的这一目标区域的无缝隙全景图片。

从空中在飞行器上拍照使凌禾波把他的飞行知识和拍照的技巧结合起来，为客户创造独一无二的照片。在筹备新推出的美属维尔京航空公司期间，维尔京公共关系部门雇佣他来拍摄维尔京的多次飞过加州的空客飞机。凌禾波注意到，“飞行员，空中交通管制员和摄影师之间的事前沙盘推演和充分交流沟通是确保安全和完成任务的首要条件”

杂志和书籍的编辑工作是Aerial Archives的另外一部分工作。凌禾波欢迎书籍项目因为他们经常引导航空摄影到新的项目和更深层次开会。“书籍项目机会的出现引发深层次的项目是特别值得欣慰的。”

由于航拍视频的制作也许需要更大的成本和质量，在他选择执行任务的最终设备前凌禾波广泛的咨询需要航拍视频的客户。例如，联邦机构雇佣凌禾波航拍反恐演习的录像，这与那些广告代理商请凌禾波空中拍摄旧金山高层住宅的宣传视频作品是有根本上的不同。

作为空中摄影研讨会和相关教育项目的经常讲演者和组织者，凌禾波经常和他的同行专业人士和新入门的人在不同地点分享他的经验，像在旧金山现代艺术博物馆，柯达公司总部和各式各样的飞机库。在2007在北京首都国际机场举办的通用航空商务交流会中他提出了中国航空摄影商业机会的探讨，那是很有建设性的。凌禾波认为中国的“建筑进度”正是航空摄影发展的绝佳机会。凌禾波的公司被许多项目聘请为建筑物进行持续性航拍，不仅为了客户完成工程进度以便请款，同时也为一个建筑留下历史

记录。在凌禾波看来，“建筑进度”空中摄影可以“为中国新兴的通用航空运营商提供航拍工作机会，并且同时记录了宝贵的建设成就”。

凌禾波自2004年在深圳印刷他的航空画册“鸟瞰墨西哥城”以来，一直关注着中国的发展。在旅行途中，他有幸见到了Yan-En Yu机长，给他推荐了一些游览的地方鼓励他去更多的了解中国。从那以后，凌禾波多次来中国来了解那美轮美奂的地理风情，它的航空产业和历史，“我希望有一天有机会从空中的角度来展示中国是多么的美丽”凌禾波说，同时也可以借重航拍来帮助发展中国的商务机会。”有关凌禾波和Aerial Archives的更多信息请浏览www.herblingl.com和www.aerialarchives.com。



凌禾波与他的飞机在Petaluma机场。
Herb Lingl at the Petaluma airport with his airplane.



旧金山奥克兰湾跨海大桥桥面新建工程。
Construction of the replacement span for the San Francisco Oakland Bay Bridge.

建设中的旧金山奥克兰湾跨海大桥桥墩工程。
Construction of the first footing for the San Francisco Oakland Bay Bridge replacement span.



Herb Lingl's passion for photography and flying has led him through a successful and rewarding career. Lingl is a commercial pilot, an award-winning photographer, and the founder of Aerial Archives, a firm which creates aerial photography and video on assignment and licenses existing aerial and satellite imagery to clients worldwide. Aerial Archives is based at the Petaluma airport in Sonoma County, less than an hour's drive north of San Francisco, California.

Lingl's unique aerial imagery has provided him with the opportunity to work with an international clientele. His work has been published in books and magazines and exhibited in venues as varied as the San Francisco and Montreal airports, the Palace of Fine Arts in San Francisco and Federal Aviation Administration locations in the USA. It has taken him over major population centers such as New York, Tokyo, Los Angeles and Mexico City; remote areas like the rain forests of Panama, the jungles of Nicaragua, the deserts of Nevada, and the canyons of Arizona; as well as over many beautiful smaller towns and villages all over the world.

When working in the western USA, Lingl often uses his 1946 Taylorcraft – a high-wing fabric airplane with a very low stall speed, an excellent glide ratio and the capability to stay aloft for extended periods of time. Many assignments however, require different platforms, such as a Cessna Caravan to reach 22,000' to shoot into the crater of the Popocateptl volcano; a Lear 25B to keep up with and maneuver around an Airbus A320; a motorized hang glider to fly low over an event in a noise sensitive area; and a Bell Jet Ranger for night time aerial photography of the Rolling Stones' Bridges to Babylon Tour.

As Lingl's business developed, he was surprised by the diverse nature of the clientele. From advertising assignments to legal cases; from one time, large scale events to ongoing construction projects; from highly technical scientific investigations to requests for visually stimulating artistic imagery – the diversity of assignments never fails to keep his work interesting.

Advertising assignments often result in stimulating, creative collaboration because the budgets enable more extensive production and creative team work. "The collaboration with a creative client stimulates my own thinking and often leads me to come up with new ideas." As an example, Lingl cites an assignment for American Express working with Jason Anello,

a New York based art director at the advertising agency Digitas. After a phone conversation in which Anello outlined his concept for the campaign, Lingl scouted candidate locations and created sample imagery, "including aerial photographs I never would have created otherwise." During a meeting with Lingl in New York, Anello selected a location and style and then flew to San Francisco to join Lingl for the actual photo mission. Lingl's work with advertising and public relations firms yields images that may not exist otherwise.

When shooting events from the air, Lingl works with the awareness that there is usually only one chance to get his unique images and therefore extensive planning is essential. When Lingl received the assignment to shoot the Centennial Celebration for the City of Palo Alto, California at night, he knew advance planning would be critical. He decided to set up 30,000 watts of strobe lights which would be fired using a radio transmitter that would send a signal once Lingl's camera shutter was open. With the help of the Palo Alto fire department's tall fire truck ladders and numerous assistants, Lingl's team placed strobe lights at strategic areas around the event. Several helicopter test flights helped ensure the receivers actually triggered all of the strobe lights. A skilled, military trained helicopter pilot ensured that the flying portion of the mission was executed with the stability necessary for the mix of strobe and ambient light that Lingl needed to make these unique aerial images.

In addition to celebratory events such as the Palo Alto Centennial, Lingl has photographed bull fights, religious processions, concerts, opening festivities, historic sports events, automobile races and numerous other events from the air.

Lingl also enjoys scientific research assignments because they often present him with the opportunity to work with new techniques to meet his scientific client's objectives. When the United States Geological Survey asked him to work on projects documenting phytoplankton blooms and sediment flows from the air, he was given the freedom to use numerous imaging techniques to gather the data the scientists needed. When a consortium of university and industry scientists hired him to create what was to become the first ever aerial light pollution study, Lingl first made a number of test flights to provide his clients with a range of imaging options to ensure they obtained the most useful data possible from the photo

从上海振华港口机械有限公司运来的起重机正在加州奥克兰港卸货。

Cranes from Shanghai Zhenhua Port Machinery being unloaded at the Port of Oakland, California.



在旧金山新建的著名的AT&T公园举办的第一场足球比赛。

The first football game at the newly constructed stadium in San Francisco now known as AT&T Park.



维尔京美国空客A320飞跃在太平洋海岸线。

Virgin America Airbus A320 over the Pacific shoreline.

mission. These clients ultimately received a seamless view of their area of interest stitched together from the numerous frames Lingl made at night using a gyro-mounted camera during the helicopter mission flight.

Assignments shooting aircraft from the air enable Lingl to combine his knowledge of flight with his photography skills to create unique imagery for his clients. During the preparations for the launch of the new Virgin America airline in the United States, Virgin's public relations agency hired him to create photographs of one of Virgin's new Airbus aircraft over numerous California locations. Lingl notes that, "Extensive pre-production planning and effective communication between pilots, air traffic controllers and the image making team are essential to the safety and success of these types of assignments."

Editorial work for magazines and books makes up another portion of Aerial Archives' business. Lingl welcomes book projects because they often lead to aerial photography of new subjects and the chance to explore them in depth. "The opportunity that a book project presents to explore a subject in depth is particularly rewarding."

Because the production of aerial video has perhaps the broadest range of cost and quality variables, Lingl consults extensively with aerial video clients before selecting the final equipment to be used for these missions. For example, the requirements of a federal agency that hired Lingl to shoot aerial video of terrorist response exercises were significantly different from those of the advertising agency that retained Lingl to create aerial video for a promotional piece for the tallest residential tower to be constructed in San Francisco.

As a frequent presenter and organizer of aerial photography seminars and related educational programs, Lingl has been able to share his experience with peer professionals and newcomers alike at venues as diverse as the San Francisco Museum of Modern Art, Eastman Kodak's corporate headquarters and a variety of aircraft hangars. In 2007 he presented an examination of aerial imaging business opportunities that might have immediate potential to be useful in China at the General Aviation Forum at the Beijing Capital International Airport. One of the areas Lingl identified as particularly promising for China is "construction progress" aerial photography. Lingl's firm is retained to create ongoing aerial photographs of construction projects both for clients to complete one of the conditions of the release of additional funds for some projects, as well as to create an historical record of construction. In Lingl's view, construction progress aerial photography could "generate ongoing work for emerging general aviation operators in China and create a valuable record of construction achievements."

Lingl's long standing interest in China intensified when he came to the country for the first time in 2004 to print the aerial photography book "Above Mexico City" in Shenzhen. On that trip he had the opportunity to meet Captain Yan-En Yu, who encouraged him to learn more about China by providing him a list of recommended places to visit. Since then Lingl has returned to China a number of times to learn about its stunning geography, its aviation industry and history, "I hope someday," says Lingl "to have the opportunity to show how beautiful China is from the air, and to share ideas about how aerial imaging could be used to help develop communities and businesses in China." Additional information about Herb Lingl and Aerial Archives is available at www.herblingl.com and www.aerialarchives.com.

Kunpeng flight school to introduce

AirKing C90GTi

鲲鹏飞行学校购 空中国王C90GTi用于飞行培训



10月14日，深圳航空有限责任公司（以下简称“深航”）鲲鹏飞行学校与豪客比奇大中华区总代理亚飞太平洋公司正式签署采购意向书（LOI），确认订购2架空中国王C90GTi，另有两架意向订货。首架C90GTi将于2009年3月交付。

鲲鹏飞行学校是深航于2007年9月投资创办的国内第一家航空公司自行创办的飞行学校，可提供飞机私人驾驶员执照培训、飞机仪表等级培训和飞机商用驾驶员执照培训等训练课目。学校校部和地面教学主运行基地设在深圳航空公司基地，飞行训练主运行基地设在广西梧州。此次订购的C90GTi飞机将主要用于飞行员的高级培训。

The Shenzhen Airlines operated Kunpeng flight school formally signed letters of intent to purchase two Hawker Beechcraft AirKing C90Gti to be utilized in their training program. The first of the two aircraft will be delivered in March 2009.

Kunpeng flight school was founded in September of 2007 by Shenzhen Airlines and is the first flight school established by a domestic airline to offer private pilot, instrument and commercial aviation training.

The Kunpeng flight school is headquartered at the Shenzhen Airlines headquarters in Wuzhou.





S-76C+型直升机在美国纽约曼哈顿商业区上空飞行。

中国交通运输部救捞局从美国引进四架直升机

China Purchases 4 Sikorsky S-76Cs for Search and Rescue

中国交通运输部救助打捞局14日与美国西科斯基飞机公司签署购买协议，订购4架救助直升机，用于加强中国海上搜索救援能力。

交通运输部救捞局局长宋家慧说，此次引进的4架海上救助专用直升机是美国西科斯基飞机公司生产的S-76C++直升机，机上装有救援绞车、强光探照灯、4通道自动悬停系统等海上搜救专用设备。该机最大巡航速度155海里/小时，远程巡航速度140海里/小时，续航时间2.5小时，搜救半径100海里，最高载客量12人。

交通运输部副部长徐祖远表示，对于具有18,000公里海岸线的中国来讲，这仅是海空立体救助工作的第一步。今后，交通运输部还将陆续引进海上救助专用直升机，将会有更多的救助直升机投入海上救生。

交通运输部2000年从西科斯基公司引进了中国最早的两架搜救直升机，中国海上搜救队伍由此建立。2004年再次购买了两架S-76C+搜救直升机，用于在渤海湾执行任务。

China recently signed a purchase order for four Sikorsky S-76C++ helicopters to strengthen its domestic search and rescue capabilities.

Xu Zu Yuan, Vice Minister of the Ministry of Transport says that this is the first step to improving China's rescue capabilities along its Eastern coastline.

The four S-76C++ helicopters are equipped with rescue hoist, searchlights, search and rescue equipment, and can reach max speeds of

155 miles per hour. The helicopters will be able to carry 12 people and will also have a search radius of 100 nautical miles.

The Ministry of Transport first purchased two search and rescue helicopters in 2000, and two more in 2004 for use in Bohai bay.

投资7683万元 大兴安岭 将开建加格达奇机场

New Jiagedaqi airport location set at Daxinganling

被俗称为大兴安岭加格达奇“飞机场”的加格达奇航空护林站改扩建工程可行性研究报告获得国家发改委的批复，标志着加格达奇航空护林站由林-2级航站一跃跨入全国唯一的一个林-1级航站，为加格达奇民航机场的顺利开通奠定了坚实的基础。

加格达奇航空护林站始建于1970年，运营近40年来，担负着黑龙江大兴安岭和内蒙古大兴安岭东部林区的航空护林任务，巡护监测面积达5.2万平方公里，航站在大兴安岭林区森林防火工作中发挥了重要作用。

2007年3月，大兴安岭地区就积极运作加格达奇航空护林站的改扩建工作。经过多次评估，最终获得国家发改委的正式批复。

据介绍，这个批复项目总投资7683万元，全部由中央预算内投资安排，项目主要建设内容为对现有1400米机场主跑道进行加铺盖被，南端加长600米，扩建后主跑道长2000米；将原40米主跑道加宽至45米，两侧新建7.5米宽道肩，扩建后主跑道总宽度达60米；在跑道两端各新建一个调头坪，并新建助航灯光系统、导航台、气象观测场、化学灭火设备储备库及相应的供电、供暖、给排水等基础设施，项目建设期为2年。机场建成后，将成为集森林防火与民航为一体的机场。

The Jiagedaqi aviation forest protection station expansion project feasibility report was approved by the National Development and Reform Commission (NDRC). The new expansion project will transition the air forest protection station into the only class one facility in the entire nation. It will also serve to solidify the foundation for the Jiagedaqi civil airport's future development.

The Jiagedaqi aviation forest protection station was founded in 1970 and has been in operation for nearly 40 years. The Jiagedaqi aviation forest station monitors an area of 52,000 square kilometers and has played an important role in forest fire prevention.

The feasibility study was initiated in March of 2007 and finally approved after several rounds of revisions by the NDRC.

It's reported that the project will carry a 76.83m RMB investment provided provided by the central government. The scope of the project will include an extension and widening of the runway, a new taxiway, runway lighting structures, navigation systems, chemical and fire-fighting equipment, and other supplementary facilities. The project is estimated to take two years.



飞机销售和产品支持的领导者，霍克太平洋公司和它的合资伙伴上海机场管理局，12月5日在上海虹桥机场为其新的航空商务设施开工举行了奠基仪式

新的设施包括一个固定基地运行站(FBO)，日常维修和检查(MRO)和航空器管理服务，这都特别瞄准了公务机的市场。它的年容纳能力为6000架飞机的起降。

上海机场管理局是一个城市中两个机场的运营管理者，这两个机场也是中国最繁忙的机场。

霍克太平洋执行总裁Alan Smith说：“这对公司来说是非常重要的一步，是用了很多年才实现的一步。霍克太平洋公司很高兴能在这个激动人心的项目上与上海机场管理局合作。

“我们很早就认识到中国作为世界经济增长最快的国家的潜在需求，上海作为中国一个非常重要的商业中心，以及对公务航空服务的需求。目前来说，建立具有战略意义的合作伙伴关系来实现我们的目标是我们计划的非常重要的一大部分，”他说。

新的设施将为中国现有的国内和国际公务机提供服务，同时也为中国将来具有增长性的公务和私人飞机提供服务。

霍克太平洋将为合资兴建的FBO和MRO提供专门的技术和专家的意见。飞机的管理服务也将逐渐被引进来满足市场发展的需求。

史密斯先生指出上海的合资伙伴表现出的状态符合霍克太平洋对FBO和飞机管理服务在亚洲和东南亚广泛的战略增长计划，他认为这是世界经济未来几十年发展的有力基础。

“这对于许多飞机制造商来说也是非常重要的，这些产品可以支持中国和亚洲这些市场的增长。”

“从企业的角度来看，我们会继续为我们的商业服务扩大机会，哪里经济形式需要这样做，我们就出现在哪里，”史密斯先生说。

新的工程项目预计在2009年第四季度竣工。

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霍克太平洋和上海机场管理局开始建设上海的新设施

Hawker Pacific and Shanghai Airport Authority begin construction of new Shanghai facilities

兴能在这个激动人心的项目上与上海机场管理局合作。

“我们很早就认识到中国作为世界经济增长最快的国家的潜在需求，上海作为中国一个非常重要的商业中心，以及对公务航空服务的需求。目前来说，建立具有战略意义的合作伙伴关系来实现我们的目标是我们计划的非常重要的一大部分，”他说。

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新的工程项目预计在2009年第四季度竣工。

A leading aircraft sales and product support company, Hawker Pacific and its joint venture partner, the Shanghai Airport Authority, held a ground breaking ceremony on December 5th to mark the start of construction at the site of their new business aviation facility at Shanghai's Hongqiao Airport.

The new facility will include a Fixed Base Operation (FBO), Maintenance Repair and Overhaul (MRO) and Aircraft Management services, specifically aimed at the corporate aircraft market. It will be capable of handling up to 6,000 aircraft movements a year.

The Shanghai Airport Authority is the operator of the city's two airports which are amongst the busiest facilities in China.

Hawker Pacific Chief Executive, Alan Smith said: “This is an extremely important step for the company, one that has taken many years to achieve. Hawker Pacific is delighted to be associated with Shanghai Airport Authority in this exciting project.

“We recognised early the potential offered by China as the world's fastest-growing economy and the importance of Shanghai, the country's commercial centre, as being the ideal location for the provision of business aircraft services. The establishment of essential strategic relationships to achieve our goals has been a large part of

the journey so far,” he said.

The new facilities will provide services to both existing domestic and international corporate aircraft as well as supporting the anticipated growth in future corporate/private aircraft ownership in China.

Hawker Pacific will provide its expertise to the joint venture which will initially focus on FBO and MRO activities. Aircraft Management Services will gradually be introduced in line with market development & demand.

Mr Smith noted that the Shanghai joint venture represents a neat fit with Hawker Pacific's broader strategic growth plan for FBO/Aircraft Management Services in Asia and South-East Asia, regarded as being the power base for the world economy over the next few decades.

“It is also important to a number of aircraft manufacturers that product support capabilities are available in China and Asia as those markets grow.

“From a corporate perspective, we will continue to pursue expansion opportunities for our business services where it makes economic sense to do so and that is the case here,” Mr Smith said.

The new business aviation facility is expected to be completed by the fourth quarter 2009.





美国奥什科什EAA飞行探险大会

What is EAA AirVenture Oshkosh?

如果你想享受大会的任何一天活动，你最好穿上你的步鞋和便装。大门会在上午7点准时开放，不过你最好早一点到那里，因为你无法在一天内全部看完。

当你到达后，现场的人数，活动的规模，成群结队的飞机，压倒性的阵容都将令你非常震惊。如果你不停下来一直走过每一行飞机，你将走5.2英里。平均每年都有2500架以上包括自行组装，古董，典型，退休战机，超轻型和螺旋桨飞机参与和在奥什科什举行的EAA飞行探险活动中。

首先要看的是展示区的飞机。作为一名EAA成员，你可以优先查询EAA其他成员的第一手技术和设计资料。如果你对某个特殊的飞机很感兴趣，你将会在奥什科什得到机会看到它。当你在飞行展示区走过的时候，你会发现许多新闻人物和航空名人，正是他们才使世界航空业变得如此让人兴奋。

穿过壳牌航空石油AeroShell广场，飞行探险大会的主展道，你会看见从Spirit of St. Louis到隐形战斗机的任何飞机。

千万不要错过童趣探险区！自从在Wittman支线机场办理活动以来，童趣探险区已经吸引了成千上万的参与者参与到老少皆宜的动手活动中，包括教育性的和娱乐性的，还有航空为基础的示范和演讲。通常，孩子们能建立自己的滑翔机，火箭和飞行模拟器，通过讲故事告诉他们有关航空的传说，乘坐一个热气球等等许多活动。

信息在会场里是无所不在的，有时它会在飞机翅膀的影子下面...

飞行展示区可直接到达论坛区，在那一周期间，超过500个论坛由民航领导者，美国国家航空航天局研究者连同FAA职员，飞机制造者和许多其他人一起参与。

在参加一些研讨会过后，让我们一起来参观各类展览厅。航空相关的东西基本在那里都可以看到。仪器，航空电子，保险，飞机零部件等很多很多。超过800个参展商参加了奥什科什EAA的展会。

想要学飞行吗？那么停下来参观一下NAFI馆。你将会见到国家顶级的飞行教官，他们将提供有关初始学习飞行或提升飞行水平的相关建议。它不是像你想象中的那么困难。

EAA会馆会向您介绍全世界超过1000个分支机构。总会有一个分支机构会在您所在的地区附近。如果没有，他们会帮您建立一个。会馆给您提供机会会见与您有相同航空兴趣的人。不得不说，这是一个满足您航空胃口的一个极好方式。

那么接着来参加EAA一个最热切期待的亮点一下午的飞行表演

它是以飞行表演作为开始的。许多独一无二的飞机，从早期的飞行比赛者到历史性的飞机都会参加。紧接下来的是你在会场的任何一个地方都能看到的最精彩的飞行表演。顶级表演者例如Sean Tucker, Sean Tucker和其他的高手们进行了将近3个小时精彩绝伦的表演。太阳在落山，但是表演则刚刚开始。现在该是参观森林剧院的时间了。每晚将会有超过4000人享受到一流的航空项目和娱乐活动。最经典的项目也许该是极富特征的美国国家航空航天局的太空人了，还有顶级的测试飞行员和世界著名的航空人物。

EAA航空探险集会是一个全天候24小时的盛会，在几个小时的甜美睡眠后它又马上开场。是的，在奥什科什渡过了令人振奋的一天，因为那是世界上最大的航空盛会！



If you want to enjoy a typical day at the Convention, get your walking shoes on and dress casual. The gates open at 7 a.m., but you'd better get there earlier ... you can't see it all in one day.

As you arrive, the number of people, size of the site and the rows and rows of magnificent aircraft are simply overwhelming. If you were to walk past ... not down ... each row of airplanes, you would cover 5.2 miles! Typically about 2,500 show aircraft participate at EAA AirVenture Oshkosh, including homebuilts, antiques, classics, warbirds, ultralights and rotorcraft.

The first thing to look at is airplanes on the flight line. As an EAA member, you can inspect firsthand the craftsmanship and design advancements that come from the hands and minds of EAA members. If you're interested in a particular airplane chances are you'll find it in Oshkosh. As you walk along the flight line you'll see many of the newsmakers and personalities who make the world of aviation so exciting.

Traveling across AeroShell Square, AirVenture's main display ramp, you might see anything from the Spirit of St. Louis to a Stealth fighter.

Don't miss KidVenture! Since landing at Wittman Regional Airport, KidVenture has attracted thousands of participants young and old alike with its hands-on, educational—and fun—aviation-based demonstrations and presentations. After all, kids get to build their own gliders and rockets, fly simulators, see aviation legends tell their stories, ride in a tethered hot-air balloon, and so much more.

Information is available in many places, sometimes in the shade of an airplane wing...

From the flight line it's on to the Forums Area. During the week over 500 forums are conducted by aviation leaders and NASA researchers, along

with FAA personnel, aircraft designers and a host of others.

After taking in a couple of forums, let's visit the Exhibit Buildings. Just about everything available in aviation is there. Instruments, avionics, insurance, aircraft parts . . . the list goes on and on. Over 800 exhibitors participate at EAA AirVenture Oshkosh.

Want to learn how to fly? Then stop and visit the NAFI Pavilion. You'll meet some of the nation's top flight instructors who will provide their advice on how to get started in flying or upgrade your ratings. It's not as difficult as you

might think.

The EAA Chapter House introduces you to over 1000 Local Chapters worldwide. There's bound to be one in your area . . . if not, they'll help you start one. Chapters provide the opportunity to meet people who have the same aviation interests that you have. It's a great way to whet your aviation appetite.

Then comes one of the most eagerly-anticipated highlights of the EAA AirVenture Oshkosh . . . the Afternoon Air Show...

It starts off with showcase flying. Many unique aircraft, from early air racers to historical airplanes, participate. That's followed by the finest air show you will see anywhere. Top performers such as Sean Tucker, Patty Wagstaff and others take part in a nearly three-hour spectacular. The sun is setting, but the action is just beginning. Now it's time to visit the Theater in the Woods. Each night over 4,000 people enjoy superb aviation programs and entertainment. Typical programs may feature NASA astronauts, top test pilots and world-famous aviation personalities.

EAA AirVenture is a 24-hour event. And after a few hours of sound sleep it starts all over again. Yes, it's been a great day at Oshkosh ... the World's Greatest Aviation Celebration.



NBAA's History of Serving the Business Aviation Community Since 1947

自1947年以来一直服务于公务航空

若是没有1946年在美国纽约Biltmore酒店内Wings Club聚会的一群远见卓识的人针对当时的航空运输现状提出了各自的观点，也许今天的公务航空也不过寥寥数十架飞机而已。他们在二战后的所见，既有令人振奋也有令人沮丧的。

从商业复苏的角度而言，公务和个人都需要飞行。而定期航班则开始了新一阶段的增长；独立的非定期货运与客运承运人全面快速增长；对于许多商业公司来说，随着战争期间飞机的使用，逐渐的发现利用航空工具来面对日趋激烈的商业竞争。而从有利的角度而言，法规单位则正计划采用激烈的，甚至是轻率的措施来处理空管问题。

美国公务航空协会（NBAA）的成立

Wings Club的一小部分成员非常敏锐地察觉到公务航空飞行的利益，有可能会因有限的空域使用而遭受阻碍，并且认识到了这是由于此类航空运行还没有自己的组织。航空公司有航空运输协会（ATA），飞行员有航空飞行员协会（ALPA），独立货运航线成立了他们自己的组织，而轻型飞机航空人则有飞机所有人与飞行员协会（AOPA）。

迫切需要成立促进与保护公务飞机运行人利益的组织，第一步就是1946年5月17日在Wings Club中的13位成员正式地举行会谈。代表该组织的首席发言人就是Bristol Meyers的副总裁，也是Cameron机械公司后来的总裁Palmer J. (Bud) Lathrap先生。二战期间在美国空军的服役经历，使他获得了航空运输的知识。

此次会议的决议，促使Lathrap先生给许多公司的总裁致函，邀请他们在Cleveland航空飞行比赛时一同召集会议。1946年11月21日，来自16家公司的代表出席了该次会议。Lathrap先生受邀成为此次会议的主席，并引导了此次影响深远的决议。临时成立了公务航空所有人协会（CAOA），也就是美国公务航空协会（NBAA）的前身。由9名挑选的成员组成了临时的董事会，通过了协会临时章程，并计划将羽翼未丰的团体发展成为一个永久性的组织。而实际上在接下来的几个月中，有10家公司担任着临时董事会的职责，他们分别是：Republic Steel, Sinclair Oil, Champion Paper, Bristol-Meyers, Howes Brothers, American Rolling Mills, B.F. Goodrich, Burlington Mills, United Cigar-Whelan, 及Socony Vacuum。来自Republic Steel的

William B. Belden担任协会主席。

1947年2月17日，在纽约聚集董事会与成员召开会议成立了非盈利性永久组织。并于2月13日为准备组织会议在纽约州申办并取得了组织机构许可证。

1947年9月24日，在Biltmore酒店举办了该组织的首次年会，18家选举与1家参与公司组成了协会成员。完成了建立协会所需的准备工作，财务长公布现有资金\$1,239，同时选举出了9名常任董事会成员。

需要提及的是在1947年协会“成立”当年的年会上即有19家公司成为了协会成员。这些正式成员包括：American Rolling Mill Co., Bristol-Meyers Co., Al Buchanan Drilling Co., Burlington Mills, Corp., Champion Paper and Fiber Co., Corning Glass Works, General Electric Co., B.F. Goodrich Co., Goodyear Tire and Rubber Co., Hanes Hosiery Mills Co., Howes Brothers Co., National Dairy Products Corp., Republic Steel Corp., Reynolds Metals Co., Sinclair Refining Co., L.B. Smith Co., United Cigar-Whelan Stores, 及Wolfe Industries。另有一家参与成员为Atlantic Aviation Corporation。

美国公务航空协会（NBAA）的早期历史

该协会自一开始便设立在纽约，早期还出版“Skyways”季刊。1948年下半年，首次聘用了一名执行秘书。

很快韩战为公务航空的发展带来新的契机。1951年1月，民用航空局（CAA）局长致函CAOA，建议其将办公室前往华盛顿特区，以便更为紧密地与CAA配合工作，尤其是在战时飞机部件、补给与设备上。当年2月，该组织





社会的美国公务航空协会 (NBAA)

自纽约麦迪逊大街444号迁往了华盛顿特区康涅狄格大街1025号，一开始仅转租了航空培训学院的一小间办公室。

到1953年，组织的名称显然需要更改为更能体现出其自身特性，以及协会成员的多样性。1953年6月26日，在纽约市的Wings Club召开了一次特殊会议，更名为美国公务机协会。1988年协会再次并入哥伦比亚特区。1997年，50周年年会之际，协会再次更名为美国公务航空协会 (NBAA)，以体现持续服务于整个公务航空社会的宗旨。

经过早年的蜕变，NBAA已成为一个强大的，具有国际知名度的协会，秉承一贯代表与保护其成员利益的风气；处理综合性公务机所需面对的所有事务，包括改进飞机、设备与服务；解决公务机运行中可能造成的安全与经济隐患。

NBAA一贯忠实地执行早年既定的指导方针，成员数量、威望与影响力稳步提升。

NBAA时常号召成员们贡献各自的实力与专长。早年的所提供的服务之一，就是成立了一个技术委员会，从机身与系统的设计，到飞机维护与检查程序均加以研究。为了持续性更好地保障公务机营运者的利益，随后还成立了一些其他常务委员会。

多年来，NBAA一直不断完善航线与机场，更好的气

象预报服务，扩充通信与空中导航设施，提供更高标准的机场服务，提高飞机部件的销售，为公务机营运者提供更为合理的税务制度，合理所需燃油的分配，更加重视作为现代公务与工业所需必要工具的飞机，更好的空中交通管制程序，合格的公务航空飞行员的专业地位，以及设计满足公务飞行特殊需求的飞机。

美国公务航空协会 (NBAA) 的今天

NBAA已成为致力于公正地处理空域取得、机场与飞机噪声问题的先进单位。如今，NBAA关注的问题包括：航空安全、有效运行、合理与公平的空域使用、FAA改革、噪声与相容性土地使用、高峰时段起降费、二线机场、空中支持、空管现代化、产品可靠性改革、研究与发展、公务航空推广，与各种税务问题。

随着航空事业日益全球化，NBAA同样面对着前沿的国际问题，诸如：国际航空政策，与全球空中交通系统的提升与标准化。

协会目前为8,000余家成员公司提供协助，这些企业的年收益接近5万亿美元 – 超过50% 的国民总产值 – 全球雇员超过1900万人。

NBAA收集、整理并发布安全、有效并经济地使用公务机的运行与管理数据。该协会是致力于为公务航空社会判断与认识重要的技术与程序发展的核心机构。





There might well be only a handful of aircraft flown by business today if it were not for the vision and determination of a group of men who met at the Wings Club in the Biltmore Hotel, New York, in the spring of 1946 to look at the air transportation environment from their point of view. What they saw in those post-World War II days was both encouraging and discouraging.

On the bright side was a resurgence of commercial, business and personal flying. The scheduled airlines were beginning a new period of expansion; independent non-scheduled freight and passenger operators sprang up on all sides; and business firms, remembering the utility of aircraft during the war, were turning to air transportation to meet the accelerating tempo of competition. On the darker side they saw that the regulatory agencies were proposing drastic and even unwise measures to cope with the traffic control problems.

NBAA's Founding

The small group at the Wings Club was keenly aware that the interests of business flying would suffer in any scramble for air space and recognition because it was the only segment of the air operations industry not yet organized. The airlines had the Air Transport Association (ATA), the pilots had the Air Line Pilots Association (ALPA), the independent freight lines formed their own group and the lightplane flyers were well served by the Aircraft Owners and Pilots Association (AOPA).

An organization to promote and protect the interests of business aircraft operators was urgently needed and the first steps in that direction were taken by the group of 13 persons who met informally at the Wings Club on May 17, 1946. Chief spokesman on the need for organization was Palmer J. (Bud) Lathrop, then vice president of Bristol Meyers and later president of Cameron Machinery Company. He had gained his knowledge of air transportation operations in the Army Air Corps during World War II.

That meeting produced determination to move forward. Mr. Lathrop wrote to the presidents of a number of companies, inviting them to be represented at a meeting scheduled coincidentally with the Cleveland Air Races at which support for organization could be mustered. Sixteen companies were represented in person at that November 21, 1946 meeting. Mr. Lathrop was asked to chair the

meeting and led it to an impressive conclusion. The Corporation Aircraft Owners Association (CAOA), later to be renamed the National Business Aircraft Association (NBAA), was provisionally launched. A temporary Board of Directors, to consist of nine persons was selected, temporary bylaws were adopted and plans were made to steer the fledgling group toward permanent existence. Actually performing service on the temporary Board for all or part of the several months were representatives of ten companies: Republic Steel, Sinclair Oil, Champion Paper, Bristol-Meyers, Howes Brothers, American Rolling Mills, B.F. Goodrich, Burlington Mills, United Cigar-Whelan and Socony Vacuum. William B. Belden of Republic Steel functioned as chairman.

On February 17, 1947, a meeting of incorporators and members was assembled in New York to establish the permanent organization as a not-for-profit corporation. Consent for the filing of the original certificate of incorporation had been obtained from the State of New York on February 13 in preparation for the organizational meeting.

The first annual meeting of the organization was held in room 101 of the Biltmore Hotel on September 24, 1947, with 18 voting and one associate company comprising its membership. All the preparatory work for establishing the association was approved, the treasurer reported \$1,239 on hand, and a vote was taken to elect nine Members of a permanent Board of Directors.

19 companies comprised the membership in its "Charter" year of 1947: American Rolling Mill Co., Bristol-Meyers Co., Al Buchanan Drilling Co., Burlington Mills, Corp., Champion Paper and Fiber Co., Corning Glass Works, General Electric Co., B.F. Goodrich Co., Goodyear Tire and Rubber Co., Hanes Hosiery Mills Co., Howes Brothers Co., National Dairy Products Corp., Republic Steel Corp., Reynolds Metals Co., Sinclair Refining Co., L.B. Smith Co., United Cigar-Whelan Stores and Wolfe Industries. In an Associate Member category was Atlantic Aviation Corporation.

NBAA's Early Years

The Association was based in New York during its first years of existence, initially sharing the quarters of Skyways magazine. In late 1948, an Executive Secretary was hired.



The Korean War soon brought new challenges to business aviation. In January 1951, the Administrator of the then Civil Aeronautics Administration (CAA) wrote to CAOA suggesting that it moves its offices to Washington, D.C., so as to work closely with CAA, particularly in the handling of wartime priorities for aircraft parts, supplies and equipment. In February of that year the organization moved from 444 Madison Avenue, New York, to 1025 Connecticut Avenue in Washington, D.C., initially occupying one small room sublet from the Aeronautical Training Society.

By 1953 it became clear that the group's name should be changed to reflect its national scope and the growing diversity of its constituency. At a special meeting held June 26, 1953, at the Wings Club in New York City, it became the National Business Aircraft Association, Inc. In 1988, the Association was reincorporated in the District of Columbia. In 1997, at the time of its 50th anniversary, the Association changed its name to the National Business Aviation Association, Inc. (NBAA), to reflect its ongoing commitment to serve the needs of the entire business aviation community.

Throughout its early years and its metamorphosis into a strong, internationally recognized force, NBAA adhered unflinchingly to its purpose of representing and protecting the aviation interests of its members; presenting a united business aircraft front in all matters where organized action became necessary to improve aircraft, equipment, and service; and furthering the cause of safety and economy of business aircraft operations.

NBAA has adhered faithfully to those objectives in the succeeding years since they were laid down as its guiding philosophy, and the result has been steady growth in membership, prestige and influence.

NBAA has called on the strength and expertise of its members on frequent occasions. One of its early services was the appointment of a Technical Committee to handle challenges in airframe and systems design

and from aircraft maintenance and inspection procedures. Several other standing committees were subsequently created to better manage problems of continuing interest or concern to business aircraft operators.

Over the years, NBAA has sought improvements in airways and airports, better weather reporting service, expansion in communications and air navigation facilities, higher standards of airport services, improved aircraft parts distribution, equitable tax ruling for business aircraft operations, fair allocation of available fuel, greater recognition of the airplane as a necessary tool in modern business and industry, better air traffic control procedures, professional status for qualified business pilots and aircraft designed to meet the special requirements of business flying.

NBAA Today

NBAA has been in the forefront of efforts aimed at fairly settling problems related to air space access, airports and aircraft noise. Today, NBAA is focused on issues such as aviation safety, operational efficiency, fair and equal access, FAA reform, noise and compatible land use, peak hour landing fees, reliever airports, air support, air traffic control modernization, product liability reform, research and development, business aviation advocacy and various tax issues.

As the world of aviation has become more global, NBAA is at the forefront of international issues such as an international aviation policy and improvement and standardization of global air traffic systems.

The Association now provides assistance to more than 8,000 Member Companies which earn annual revenues of approximately 5 trillion dollars – a number that exceeds 50 percent of the gross national product – and employ more than 19 million people worldwide.

NBAA collects, interprets and disseminates operational and managerial data related to the safe, efficient and cost-effective use of business aircraft. The Association is the focal point for identifying and understanding advances in technology and procedures important to the business aviation community.