

TED演讲者: Rodin Lyasoff | 罗丹·利亚索夫

演讲标题: How autonomous flying taxis could change the way you travel | 自动驾驶飞机如何改变你的出行方式

内容概要: Flight is about to get a lot more personal, says aviation entrepreneur Rodin Lyasoff. In this visionary talk, he imagines a new golden age of air travel in which small, autonomous air taxis allow us to bypass traffic jams and fundamentally transform how we get around our cities and towns. "In the past century, flight connected our planet," Lyasoff says. "In the next, it will reconnect our local communities."

航空企业家罗丹·利亚索夫说,“飞行将会变得更加个人化”。在这次前瞻性的对话中,他设想了一个全新的飞行黄金时代,小型自动驾驶飞机可以让我们避开拥挤的交通,从而在根本上改变城镇的交通方式。“在上个世纪,飞机将世界连接起来了,”利亚索夫说,“在下个世纪,飞机会将我们的社区重新连接起来。”

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I love **airplanes**.

我喜欢飞机。[00:12]

Oh -- I love airplanes.

真的非常喜欢。[00:14]

So, when I went to college in the late 90s, it was obvious that I was going to study **aerospace**.

九十年代末我上大学的时候,曾不假思索地要选择航空专业。[00:16]

And you wouldn't believe how many people told me, "Oh no, not aerospace."

你们肯定想不到有多少人对我说,“不要选航空专业。”[00:21]

Aerospace is going to be boring, everything in aerospace has already been done."

没什么前途,这个领域不会再有什么新发展的。[00:26]

Well, they were a little bit off the mark.

他们的话多少有失偏颇。[00:31]

And in fact, I think the next decade is going to be another golden age for **aviation**.

实际上,我认为未来十年将是航空业的另一个黄金时期。[00:33]

For one thing, and this is where I get excited, flight is about to get a lot more personal.

首先,令我激动的是,飞行正变得与每个人息息相关。[00:37]

So, a little compare and contrast.

对比一下,[00:41]

In the last century, large commercial airplanes have connected cities across the globe.

在上个世纪,大型商业飞机已经把世界各地的城市连接起来了。[00:44]

And 100 years ago, it would have been **unthinkable** for all of us to fly here from around the world for a five-day **conference**.

一百年前,人类根本无法想象飞到地球另一端参加一个五天的会议。[00:49]

airplanes: n.(美)[航]飞机(airplane的复数) **aerospace**: n.航空宇宙;[航]航空航天空间 **aviation**: n.航空;飞行术;飞机制造业 **For one thing**: 首先;一则 **unthinkable**: adj.不能想象的;过分的 **conference**: n.会议;讨论;协商;联盟;(正式)讨论会;[工会,工党用语](每年的)大会/v.举行或参加(系列)会议

But we did, and most of us probably without a second thought.

但现在我们做到了,大部分人可能也不会为此大惊小怪。[00:55]

And that's a **remarkable** achievement for **humanity**.

这是人类的一个巨大成就。[00:58]

But on a **day-to-day** basis, we still spend a lot of time in cars.

但是每一天,我们仍要花很多时间在通勤上,[01:02]

Or actively trying to avoid it.

或者试图避免它。[01:06]

Some of my best friends live in San Francisco, I live in Mountain View, about 40 miles away.

我有些关系密切的朋友住在旧金山,而我住在离他们约65公里的山景城。[01:09]

We're all busy.

我们都很忙,[01:15]

At the end of the day, we're separated by something like two hours of heavy traffic.

一天结束的时候,2个小时的拥挤交通把我们分隔开了。[01:16]

So frankly, we haven't seen each other in a few months.

老实说,我们已经好几个月没见面了。[01:20]

Now, I work in downtown San Jose, which is near the airport.

我现在在圣何塞市区工作,离机场不远,[01:23]

And there are actually days when I can leave work, get on a plane and fly to Los Angeles faster than I can drive to San Francisco.

有时候我可以不去上班,飞到洛杉矶,比我开车到旧金山还要快。[01:28]

Cities are only getting more **populated**, the roads are full, and it's really difficult to expand them.

城市正在变得越来越拥挤,道路都被车占满了,很难再拓宽,[01:36]

remarkable: adj.卓越的;非凡的;值得注意的 **humanity**: n.人类;人道;仁慈;人文学科 **day-to-day**: adj.日常的;逐日的 **populated**: adj.粒子数增加的/v.居住于...中;构成...的人口(populate的过去分词)

And so in a lot of places, there really aren't a lot of good solutions for getting around traffic.

所以在很多地方,面对日益严峻的交通问题,我们却无能为力。[01:41]

But what if you could fly over it?

但是,如果你可以飞呢? [01:47]

The sky is **underutilized**, and I would argue it will never be as **congested** as the roads are.

天空还没有被充分利用,我敢说天空永远不会像马路一样拥挤的。[01:51]

First of all, you've got a whole other **dimension**, but also just safety **considerations** and air-traffic management will not

首先,你有了另一套交通维度,还有安全措施和空中交通管制,不会让车速过慢的交通问题在空中出

allow bumper-to-bumper traffic in the sky.	现。[01:56]
Which means, in many cases, flying can be a long-term, compelling alternative to traveling on the ground.	这意味着在多数情况下, 飞行可以是地面交通 长期、可靠的替换方案。[02:05]
So imagine this: you call an Uber , it takes you to a nearby landing spot -- we call these vertiports -- there's an airplane waiting for you there, flies you over all of the traffic in the middle, and on the other side , another Uber takes you to your friend's house.	想象一下, 你叫了一辆优步, 把你送到附近的一个停机点, 我们叫它垂直升降机场。 那里有架飞机在等你, 会载着你飞越所有拥挤的交通, 在另一端, 另一辆优步 会把你送到朋友家。[02:13]
underutilized : vt.未充分使用(underutilize过去式) congested : adj.堵塞的,拥挤的/v.挤满;超负荷(congest的过去分词)	
First of all : adv.首先 dimension : n.方面;[数]维;尺寸;次元;容积vt.标出尺寸/adj.规格的 considerations : n.考虑;注意事项(consideration的复数形式);体贴 bumper-to-bumper : adj.一辆接一辆的/adj.(汽车)堵塞的 long-term : adj.长期的/从长远来看 compelling : adj.引人注目的;强制的;激发兴趣的/v.强迫;以强力获得(compel的ing形式) Uber : adj.最好的;?超级	
的/n.Uber(公司品牌名)优步 on the other side : 另一面;在另一边	
And I said Uber, but I really think we need to congratulate the Lyft branding team for their forward thinking in choosing their brand.	说起优步, 我真的觉得我们应该祝贺 来福车(Lyft) 品牌团队, 他们在选择品牌名称上 体现了出色的前瞻思维。[02:27]
(Laughter) So in that example, OK, there are a few extra steps, I admit.	(笑声) 在这个例子中, 我承认还有一些路要走。[02:34]
But it's 30 minutes versus two hours, it costs around 60 dollars, and you get to fly.	但耗费的时间从两小时 缩短到了30分钟, 花费大概六十美元, 你就能飞了。[02:39]
We're not there yet, but we are a lot closer than you might think.	我们还没发展到那一步, 但是我们离那一天 比你想象得要近得多。[02:46]
So one of the first things we need is we need an aircraft that can take off and land in small spaces and quickly take you where you want to go.	所以首先我们需要的是, 一种可以在小地方起降的飞机, 能够迅速地把你带到目的地。[02:50]
And helicopters can do that today, but traditionally, helicopters have been just a little bit too expensive, just a little too hard to pilot and just a little too noisy to be used for daily transportation in cities.	现在的直升机可以做到这一点, 但是传统直升机有点太贵了, 而且很难操控, 在每天的城市交通中 使用的话,噪音又未免太大了。[02:57]
Well, electric flight and autonomy are changing that.	不过,电动飞机和无人驾驶 正在改变这一点。[03:10]
branding : n.品牌化,品牌术/v.在...上加商标;使显得独一无二(brand的现在分词) versus : prep.对;与...相对;对抗 aircraft : n.飞机,航空器 helicopters : n.直升机(helicopter复数形式) traditionally : adv.传统上;习惯上;传说上 transportation : n.运输;运输系统;运输工具;流放 autonomy : n.自治, 自治权	
Electric flight, in particular, unlocks new possibilities for vehicle configurations that we just could not explore in the past.	特别是电动飞机, 解锁了车辆配置的新可能, 这在以前我们是无法做到的。[03:14]
If you use electric motors , you can have many of them around the aircraft, and it doesn't add a lot of extra weight.	如果你使用电动发动机, 可以在飞机上安很多个, 飞机的重量却不会增加太多。[03:21]
And that gives you redundancy and safety.	而且能保证适当的冗余度和安全。[03:27]
And also, they are cleaner, cheaper and quieter than internal combustion engines.	此外,电动发动机比内燃机 更环保,更便宜,也更安静。[03:29]
Autonomy allows the transportation network to scale, and I actually think it makes the aircraft safer.	自动驾驶可以使交通网络规模化, 我觉得这会使飞机更加安全。[03:33]
Commercial flights are already automated for most of their duration, and I believe there will come a day when we won't even trust an airplane that required a human to fly.	客机在大部分飞行时间里 已经实现了自动化, 我相信将来有一天, 我们甚至不会信任需要 由人来驾驶的飞机了。[03:39]
So, one of our teams at A3 wanted to see just how close this future really was.	我们在A3的一个团队, 想看看我们离实现这一天还有多远。[03:50]
in particular : 尤其,特别 unlocks : 开启/开锁 configurations : n.配置(configuration的复数);立体基阵 motors : n.汽车;发动机(motor的复数);汽车公司证券 redundancy : n.[计][数]冗余(等于redundance);裁员;人浮于事 quieter : n.消音装置;消声器/adj.更安静的(quiet的比较级) combustion : n.燃烧, 氧化;骚动 automated : adj.自动化的;机械化的/v.自动化(automate的过去分词);自动操作	
So they built and flew a prototype of one such vehicle.	所以他们打造并试飞了 这种飞机的一个模型。[03:54]
And they made a point of only using mature, commercially available technologies today.	他们规定只准使用 当今已成熟并已投入商业应用的技术。[03:59]
We call it Vahana.	我们给这个模型起名叫 瓦哈纳。[04:04]
It's fully electric.	它是全电动的。[04:05]
It takes off and lands vertically , but flies forward like a regular airplane.	可以垂直起行和降落, 像普通飞机一样向前飞行。[04:07]
It's fully self-piloted.	完全依靠自动驾驶。[04:11]
You push a button, it takes off, flies and lands, all by itself.	你按一下按钮,它就起飞, 飞行和落地,全程自动完

The prototype that you see here is designed to carry a single passenger and luggage . www.XiYuSoft.com	成。[04:13] 你在这里看到的这个模型, 设计为只能运送一名乘客和行李。[04:17]
And it can go about 20 miles in 15 minutes.	锡育软件 它在15分钟内可以飞行大概20英里。[04:21]
And our estimate for a trip like that is it would cost around 40 dollars, which you can really build a business around.	我们预计这样的旅程 大概会花费40美元, 这真的可以做成一门生意。[04:23]
It has multiple redundant motors and batteries, you can lose one, it will continue flying and land normally.	它有多个备用发动机和电池, 即使其中一个失效了, 仍可以继续正常飞行和降落。[04:30]
It's pretty quiet.	它非常安静。[04:36]
commercially : adv.商业上;通商上 vertically : adv.垂直地 luggage : n.行李; 皮箱 go about : v.着手做;四处走动;传开;从事 redundant : adj.多余的, 过剩的; 被解雇的, 失业的; 冗长的, 累赘的	
When it's flying overhead, it will be quieter than a Prius on the highway.	它在飞行状态中,比行驶在 高速上的普锐斯还安静。[04:37]
It's intelligent and has cameras, lidar and radar, so it can detect and avoid unexpected obstacles .	它是智能的,配有摄像头, 激光雷达和雷达。 所以它可以探测并绕开 不可预见的障碍物。[04:41]
And the team really focused on making it efficient, so the batteries are small, light, and they last longer.	这个团队非常关心它的效率, 所以电池都是又小又轻, 但可以续航更久的。[04:46]
For reference, the Vahana battery is less than half the size of a Tesla Model S battery.	举个例子,瓦哈纳电池的尺寸还不到 一辆特斯拉S汽车电池的一半。[04:53]
It's about 40 kilowatt-hours .	耗电量 40千瓦时,[04:59]
And you can hot swap the batteries in just a few minutes.	你可以在几分钟内完成电池的热交换。[05:01]
And I do think that in a few years, people will be comfortable getting by themselves in a self-piloted, electric, VTOL air taxi.	我真的觉得再过几年, 人们会习惯乘坐这种 自动驾驶、全电动、垂直起降的空中出租车。[05:04]
But the team is busy working on the next version, which is going to carry at least two passengers and fly quite a bit farther.	这个团队正在研究下一代产品, 可以搭载至少两名乘客, 而且飞行里程更长。[05:13]
But more importantly, there are over 20 companies around the world working on vehicles just like this one right now.	更重要的是,世界上有超过20家公司 正在研制类似这样的飞机,[05:19]
Prius : adj.在前的(处方用语) lidar : n.激光雷达;激光定位器 obstacles : n.障碍;障碍物(obstacle的复数形式);阻碍 kilowatt-hours : n.千瓦时;一度电(能量单位) swap : n.交换;交换之物/vt.与...交换;以...作交换/vi.交换;交易	
My best guess is in the next five years, you'll start seeing vertiports in some cities, and little airplane icons on your ride-sharing apps.	我猜很有可能在接下来的五年内, 你可以在一些城市看到垂直升降机场。 在你的共享软件旁边也 会出现小小的飞机图标。[05:27]
And it might begin with a dozen, but eventually, we could have hundreds of these, flying around our cities.	也许一开始只有几架, 但是最终可能看到几百架, 飞行在我们的城市上空。[05:35]
And it will fundamentally transform our relationship with local travel.	它将从根本上改变 我们与当地交通的关系。[05:41]
In the past century, flight connected our planet, in the next, it will reconnect our local communities, and I hope it will reconnect us to each other.	在上个世纪, 飞机将世界各地连接起来了, 在下个世纪,飞机会 把我们的社区重新连接起来, 我希望它也会将人们 彼此重新连接起来。[05:47]
Thank you.	谢谢。[05:56]
(Applause) Chris Anderson: OK, so when these things first roll out -- right now, it's a single person aircraft, right?	(掌声) 克里斯·安德森:这些服务 什么时候会首次推出呢—— 现在还是一架单人飞机,对吧? [05:57]
Rodin Lyasoff: Ours is, yes.	罗丹·利亚索夫: 我们的是,对的。[06:12]
CA: Yours is.	CA: 你们的是。[06:13]
I mean, someone comes out of their car, the door opens, they get in, there's no one else in there.	那么我的理解是,有人下车后, 飞机门开着,他进来, 里面没有其他人。[06:14]
This thing takes off.	这个东西起飞。[06:20]
Could we do a poll here?	我们来投一下票吧。[06:22]
begin with : 以...开始;开始于... reconnect : vt.使再接合 roll out : 铺开;滚出	
Because these are early adopters in this room.	因为在座的算是早期的采纳者了,[06:23]
I want to know who here is excited about the idea of being picked up solo in an auto-flying -- Well, there you go!	我想知道都有谁对这个想法感兴趣, 就是你会独自一人 被一辆无人机接走—— 哇,还真不少呢! [06:25]
RL: It's pretty good.	RL: 非常好。[06:33]
CA: That is pretty awesome , half of TED is completely stark staring bonkers .	CA: 好极了, 还有一半的观众 完全感觉在看疯子。[06:35]
(Laughter) RL: So, one of the things we're really focusing on is, really, the cost.	(笑声) RL: 我们现在重点关注的一件事 其实是, 成本。[06:38]
So you can really wrap a business around that.	你真的可以围绕这个 开展一门生意。[06:46]
And so, that's why some of the features are really driven by	这也是为什么其中的一些功能是由价格决定的。

price.	[06:48]
And the 40-dollar price tag is really a target that we're aiming for.	我们要实现的目标 是40美元的定价。 [06:52]
Which should make it accessible to a larger crowd than this one.	比起现在的这个,40美元 会让更多的人支付得起。 [06:55]
CA: The biggest blockage in terms of when this rolls out is probably not the technology at this point -- it's regulation, right?	CA: 现在推出这个产品最大的障碍, 可能不是技术问题,而是监管,对吗? [06:59]
solo: n.独奏;独唱;独奏曲/adj.独奏的;独唱的;单独的/vt.单人攀登;单独驾/vi.单独表演;放单飞/adv.单独地 awesome: adj.令人敬畏的;使人畏惧的;可怕的;极好的 stark: adj.完全的; 荒凉的; 刻板的; 光秃秃的; 朴实的/adv.完全; 明显地; 突出地; 质朴地/ bonkers: adj.疯狂的;精神不正常的 wrap: vt.包;缠绕;隐藏;掩护/vi.包起来;缠绕;穿外衣/n.外套;围巾 blockage: n.堵塞,堵塞;封锁;妨碍 in terms of: 依据;按照;在...方面;以...措词	
RL: That's probably true, yes, I would agree with that.	RL: 是的,我大概同意你说的。 [07:06]
The technology need to mature in terms of safety, to get to the safety levels that we expect from aircraft.	需要成熟的技术以确保安全, 达到飞机预期的安全水平。 [07:09]
But I don't think there are any blockers there, just work needs to get done.	但是我认为这方面不存在障碍。 就是还有一些工作要做。 [07:16]
CA: So, first, this is ride sharing.	CA: 所以,首先,这是通行共享。 [07:19]
Are we that far away from a time when lots of people have one of these in their garage and just kind of, go direct to their friend's house?	是否有一天, 人们会放一架这样的飞机 在自己的车库里, 然后就直接飞到朋友家了? [07:21]
RL: My personal view is that ride sharing actually allows you to operate that entire business much more efficiently .	RL: 我个人的观点是, 共享可以让你在整个商业的运营中 更加高效。 [07:29]
You know, there are millennials that say they never want to own a car.	你知道,有些千禧一代说 他们永远都不想买车。 [07:37]
I think they'll probably feel even stronger about aircraft.	我觉得他们会更需要飞机, [07:40]
So --	所以—— [07:43]
(Laughter) I really think that the network scales and operates a lot better as a ride-sharing platform, also because the integration with air-traffic management works a lot better if it's handled centrally .	(笑声) 我真的觉得,共享平台的 网络规模和运作效率 会好得多, 另外,如果做中心化的处理, 与空中交通管制相结合也会更好些。 [07:44]
blockers: n.阻断剂;护航者;雏形锻模(blocker的复数形式) efficiently: adv.有效地;效率高地(efficient的副词形式) millennials: n.千禧世代; 千禧之子; 千禧一代(millennial的复数) scales: n.天平;磅秤;鳞屑;缩放 operates: v.操作;运行;动手术(operate的第三人称单数) integration: n.集成;综合 centrally: adv.在中心	
CA: Cool. Thank you for that.	CA: 好,谢谢! [07:58]
RL: Thank you. CA: That was amazing.	RL: 谢谢。 CA: 太棒了。 [08:00]

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