Good afternoon. On behalf of more than 300,000 FedEx team members among the various (slide 2 – FedEx opcos) FedEx companies around the world, thank you for inviting me. It’s my pleasure to address such an influential group, including many friends and acquaintances I’ve worked with through the decades. I’ve been coming to Washington for quite a while, and FedEx has long played an active role in promoting public policy that we believe benefits not only our customers but the general public as well. While the issues may change, what doesn’t change is the importance of getting policy right.

As Chairman of the largest all-cargo air carrier in the world—our FedEx Express unit—today I’d like to discuss three important topics:

- First, the state of air cargo supply-and-demand and various factors shaping it;
Second, the aviation regulatory environment and regulatory positions we support for a healthy industry; and

Third, technology trends that can play a role in the safety and efficiency of the air cargo sector. We send our condolences to the families of those on Malaysia 370. Given this great tragedy, we believe the air transport industry can better use modern technologies to mitigate the potential for such events in the future.

Let’s begin with the state of air cargo. The industry is in the midst of a profound transformation that requires new thinking, mainly because it’s doubtful the cargo sector will return to the glory days of the 1990s and early 2000s. Since the Great Recession, several factors have reversed the growth trends of those days.

One is the slowing of global growth and world trade in general.

- Worldwide GDP grew 3% annually from 1990 to 2007, but post-recession it is growing at 2.5%. In developed economies growth has been much slower than in the past. In the United States, for instance, it was just 1.9% last year.
- World trade used to grow at about two-and-a-half times GDP pre-recession, and now it’s about one and a half times. What a difference!

One big reason trade is no longer growing rapidly is the rise of protectionism.

- In the last few years almost every trading nation has permitted greater regulatory intervention in the trade process.
- According to the 2013 European Commission on G20 Economies (slide 3 – increase in protectionist measures), protectionist measures have gone from 200 in 2009 to 688 last year. That’s more than a
300% increase!

- As a result, exports have been declining with most major trading partners since CY2010, as you can see in this chart.

![Export Trends for Top FedEx Markets](image)

In addition, China’s phenomenal economic growth has spawned two outcomes: 1) significant wage increases that are now restraining Chinese exports and 2) a national policy called Indigenous Innovation that favors local companies over foreign competitors, despite general WTO prohibitions against that practice.

- Partly as a result, China’s logistics costs are about 18% of GDP vs. less
than 9% in the U.S. Such inefficiencies make it hard for China to evolve to a more consumer-driven economy, which is the stated goal of the Chinese government.

Add to those factors perhaps the most important one, the tremendous increase in fuel prices over the past decade. Higher energy costs put pressure on everyone from airlines to truckers to most American households, and those costs have resulted in large balance-of-payments deficits and lower GDP for the United States.

- How big has this change been? *(slide 5 – oil prices over 4 decades)* From 1990 to 2003 crude oil prices increased just under 2% a year, but from 2004 to 2012 the annual increase was 11%—*every year*. Higher energy prices drive up costs and drive down demand.

Another factor in the evolution of the international air cargo sector is the *(slide 6 – semiconductor billings)* continuing miniaturization of electronics, which represent about half the tonnage transported by air.
• Not only is there less weight being transported, but price reductions driven by technology have lowered value-per-pound.
• Also, new electronic product introductions are fewer in number these days, as some markets have become satiated with fewer major electronics innovations to drive new demand.
• Door-to-door global small shipments are increasingly carried by the integrated networks of FedEx, DHL and UPS, which have dense and highly efficient pickup and delivery systems. For heavier shipments, more customers now opt for lower-cost maritime transport (slide 7 – “three triangles”) rather than use general airport-to-airport cargo.
Thus, as you can see in this chart, global air express continues to grow as does global sea trade, with both sectors gnawing at the traditional air cargo market in the middle.
Simultaneously, we’ve seen the rapid growth of international air passenger traffic coupled with the use of modern, efficient twin-engine widebodies such as Boeing 777s and Airbus A330s soon to be joined by the A350 and 777-8/9 fleets. These planes and others provide an increasing amount of low-cost underbelly lift.

On the all-cargo side, new fuel-efficient freighters such as the 777F (slide 8 – FedEx 777)—the flagship of the FedEx fleet, the 747-8F, and the A330F provide airlift with much lower unit costs than the 747-400 and MD-11 freighters that have been the industry workhorses over the past two decades.
• To give just one example, a 777 freighter flight from Hong Kong to Anchorage costs over $30,000 less than a 747-400F while carrying almost the same payload.

• Given all these factors, 43 Boeing 747-400s are parked in the desert and six have been scrapped, while 20 MD-11s are parked and 4 have been scrapped. (slide 9 – current freighter capacity exceeds demand)

All told, current freighter capacity exceeds demand as illustrated here. Combine this with the 5-6% underbelly capacity growth from global
passenger aircraft \((\text{slide 10 – global cargo capacity: B777 passenger})\), and you see why, as the earlier chart showed, global air express and sea trade continue to grow, while the traditional airport-to-airport cargo segment in the center is sagging. Yields on such traffic have declined in real terms for 20 years, and it’s clear that more legacy freighter capacity reductions will occur because of these trends.

Regarding the regulatory environment \((\text{slide 11 – FedEx logo})\), the history of FedEx is intertwined with the transportation industry evolving from a highly regulated, restricted legal environment to a more open, efficient marketplace driven by customer needs rather than legal battles.
• When Federal Express was founded in 1973, the domestic air cargo market was severely restricted, and we were limited in the size aircraft we could fly.

• Fortunately, airline deregulation in the late 1970s allowed FedEx to grow its domestic air network into the large, efficient system it is today.

• Trucking deregulation legislation in 1980 and again in 1994 was an integral factor in efficiently expanding our integrated air-ground express system and in FedEx’s diversification into other transport sectors such as FedEx Ground, FedEx Freight, and FedEx Office.

• As FedEx grew, it became clear the same opportunities that deregulation presented inside the United States existed across the globe. The major leap forward came in 1992 when the Netherlands signed the first open skies agreement with the United States. Today, the United States has over 100 Open Skies agreements with other countries around the world.

• Global liberalization of aviation bilateral treaties allowed us to enter Asia and Europe in 1984 and to further expand our international network with the purchase of the Flying Tiger Line in 1989.

• Today, (slide 12 – FedEx ranks #1 FTKs flown) FedEx is a global
powerhouse, ranking number one in Freight Ton Kilometers (FTKs) flown and in global freighter fleet size, as this chart illustrates.

**FedEx Ranks #1 in FTKs Flown & Global Freighter Fleet Size**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Airline (Including Subsidiaries)</th>
<th>FTKs (millions)</th>
<th>WB/NB Freighters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FedEx Express</td>
<td>16,108</td>
<td>339</td>
</tr>
<tr>
<td>2</td>
<td>Air France-KLM</td>
<td>10,577</td>
<td>4/3/8</td>
</tr>
<tr>
<td>3</td>
<td>UPS Airlines</td>
<td>9,416</td>
<td>237</td>
</tr>
<tr>
<td>4</td>
<td>Lufthansa Group</td>
<td>10,203</td>
<td>18/0/0</td>
</tr>
<tr>
<td>5</td>
<td>Emirates</td>
<td>9,319</td>
<td>13</td>
</tr>
<tr>
<td>6</td>
<td>Cathay Pacific Airways</td>
<td>8,433</td>
<td>22</td>
</tr>
<tr>
<td>7</td>
<td>Korean Airlines</td>
<td>8,164</td>
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</tr>
<tr>
<td>8</td>
<td>Singapore Airlines</td>
<td>6,694</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>International Airlines Group</td>
<td>6,089</td>
<td>3/0</td>
</tr>
<tr>
<td>10</td>
<td>China Airlines</td>
<td>4,533</td>
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<tr>
<td>12</td>
<td>Cargolux</td>
<td>4,403</td>
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<tr>
<td>24</td>
<td>Nippon Cargo Airlines</td>
<td>2,393</td>
<td>12</td>
</tr>
<tr>
<td>25</td>
<td>AirBridge Cargo</td>
<td>1,974</td>
<td>13</td>
</tr>
</tbody>
</table>

- FedEx’s ExpressFreighter and SuperExpressFreighter routes (nonstops in excess of 5,000 nautical miles) provide unparalleled door-to-door transit times for Priority package and freight shipments to and from almost any point on earth—connecting over 95% of global GDP.
- Because of Open Skies and the liberal use of 5th freedom rights across the globe, FedEx Express today has more than 160,000 team members worldwide, serving more than 220 countries, 375 airports, using 649 aircraft.
- FedEx has consistently supported the efforts of our government in achieving this remarkable result, and we commend the U.S. Department of Transportation and the State Department for pursuing a consistent Open Skies policy. In fact, our country has been a model to the world for liberalizing aviation rights.
However, (slide 13 – FedEx logo) at every stage, there have been incumbents that opposed Open Skies and deregulation. While it hasn’t always been smooth or pretty, these interests have consistently lost out when the benefits of a deregulated, open environment becomes apparent to transport customers and the public at large.

A number of carriers here and abroad face competition from government-owned and subsidized carriers, particularly those in the Middle East and China. Regulatory mechanisms exist in the U.S. that can be used to address the issues these situations present. That being said, for years FedEx Express has been competing with government-owned or subsidized entities, including both carriers and postal organizations. Based on our experience, we have found nimble, innovative, and flexible approaches to meeting the needs of the market to be the best antidote in these situations.

As an airline that has always backed deregulation and its international equivalent, liberalization, FedEx continues to urge our government to allow competition to flourish so everyone may continue to enjoy the benefits.

- For instance, it has saved consumers enormous amounts of money and has made the U.S. economy much more efficient. Did you know
that the logistics costs as a percent of GDP has dropped from more than 15% in the early 70s to less than 9% today, as I said earlier? It is one of the great success stories of American government and business, allowing new business models like Walmart, Amazon, and Home Depot. All of this was due to the aviation and trucking deregulation that occurred in the U.S. between 1977 and 1994, as noted previously.

- In the same vein: Before international Open Skies agreements, cities such as Dallas, Detroit, Las Vegas and Portland had few or no international connections. Now they enjoy direct connections to cities around the world, which bring tremendous benefits to these markets.

Indeed, a deregulated, open-skies regime has consistently benefited consumers and, after painful adjustment, made U.S. carriers among the best in the world.

Another regulatory issue I’d like to cover is whether the new passenger-oriented flight-and-duty time rules—the Part 117 rules—ought to apply to cargo airlines as well as passenger carriers. A few say yes, the regulations should apply whether carriers are flying boxes or people since all pilots are subject to fatigue. But all-cargo and passenger flights operate in different ways that make identical regulation unwise and less safe!

- For instance, because of the schedules required for customers of cargo flights, the average cargo pilot flies about 30 hours per month—roughly half as many as passenger pilots.
- As compared with passenger pilots, all-cargo aviators fly half the landings, have longer rest between duty periods, and have better rest opportunities while on duty. FedEx, for example, has over 230 dedicated pilot sleep rooms in our Memphis hub. When it comes to
preventing fatigue, those differences are meaningful, and they require different types of regulations.

- At an FAA-sponsored safety conference in 2000, sleep scientist and current NTSB member Dr. Mark Rosekind cautioned that “…one size fits all creates one box that affects everyone the same way. That is precisely why this type of regulation does not usually work. Policies are required but there are no magic bullets. Instead, partnerships and a great deal of scientific information are needed.”

- Similarly, at a union-sponsored safety conference in 2009, then FAA Administrator Randy Babbit, remarking on the differences between cargo and passenger carrier operations, said, “In rulemaking, not only does one size not fit all, but it’s unsafe to think it can.” That’s a strong statement from an accomplished aviator who headed one of the world’s largest pilots’ unions before joining the FAA.

Despite political constraints, the FAA hit upon the real solution for understanding and mitigating pilot fatigue—Fatigue Risk Management Plans—which provide a framework for developing rules customized to a particular type of operation.

- The new fatigue-related rules require both passenger and cargo operators to create such plans which should result in a data-driven approach to understanding pilot alertness in each separate operating environment—passenger and all cargo.

At FedEx, we have been embracing those principles for many years and have developed the most advanced fatigue-mitigation system in the world.

- We built our own, proprietary, predictive fatigue software, and collected physiological data from pilots to scientifically validate our understanding of what causes and mitigates pilot fatigue.
• In terms of our regular scheduling, every month we consult our pilots and their union on the physiological effects of our schedule and we regularly make adjustments based on that input.

• We created the FedEx Fatigue Office—a special autonomous unit within FedEx, dedicated to building on our longstanding work and unmatched experience in this area. I am very excited about the progress it offers both to FedEx and to anyone in the industry who wants to use our expertise. In fact, if you want to pursue it, our experts can provide you with a thorough briefing upon request.

Yet with all of that in place, there are still those who insist that the cargo business ought to operate under the Part 117 rules developed with passenger operations in mind.

• We’ve analyzed those regulations, in case they were imposed on FedEx, and found them to have no safety benefits for all-cargo carriers.

• In fact, we’ve determined that in some ways the Part 117 rules would make FedEx less safe, not more, because of how they would affect some of our schedules.

We believe the FAA is correctly regulating cargo operations under the flight-and-duty time rules found in Part 121, rather than 117, with the important additional requirement of Fatigue Risk Management plans. The FAA has been wise and progressive in doing so, and that approach will ultimately prove beneficial to all.

My final topic today is technology trends that can promote greater safety, information accuracy, and efficiency in air travel.
Technology, of course, is second nature to modern society. Most of us would have a hard time going just one day without the Internet, our smart phones, iPads, or other devices. People who can track their packages anywhere real time—something FedEx developed, by the way—are incredulous that with so much modern technology a widebody airplane could be missing. The lengthy time it’s taking to locate MH370 points to the need for enhanced surveillance of aircraft, especially in remote parts of the world.

Flight path information is already available on commercial aircraft via Aircraft Communications Addressing and Reporting System (ACARS) and Automatic Dependent Surveillance-Broadcast (ADS-B) equipment. FedEx long-range aircraft are equipped with both systems.

- ACARS doesn’t provide continuous transmission, but it could be adapted to do so.
- Also, space-based ADS-B can provide continuous monitoring of global aircraft, but it has yet to be mandated worldwide.
- Moreover, we can ensure these systems are not easily deactivated.
- I commend the International Air Transport Association for quickly addressing this issue with the establishment of an aircraft tracking task force. According to an article in the Wall Street Journal last week, the group is “scheduled to report its conclusions by December, an unusually quick turnaround for such an undertaking.” Once the report comes out, we as an industry should proceed with a sense of urgency to adopt IATA’s recommendations.
- We believe that rapid deployment of space-based ADS-B will also allow reduced separation of aircraft over the oceans so that we can complete our trips quicker and with less fuel and fewer emissions, while providing air traffic control with a near real-time picture of traffic.
• In this same regard, NextGen air traffic control is essential and should be accelerated.

Another timely aviation technology topic is, of course, drones. It’s clear that aviation, led by the military, is moving toward optionally and remotely piloted aircraft or drones. While we see a logical transition to unmanned small-freighter aircraft, we believe well-trained air crews will be required for large commercial, all-cargo aircraft for the foreseeable future for many reasons including sociological concerns, safety, and operational flexibility.

However, given the challenge of replacing an estimated 500,000 pilots over the next 20 years, all commercial aviation—particularly all-cargo operators—need to use advanced technologies to improve both safety and productivity by enhancing air crew capabilities. In this vein, we have work underway to explore ground-based supernumeraries, to achieve these objectives.

In the long run, measures such as ADS-B and remote crew augmentation will enhance safety and save money at the same time.

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To sum up, all-cargo aviation stands at the crossroads of several issues that will dramatically affect the future of the industry.

• Continued growth of international trade in general and air cargo/air express will require adapting to customer preferences and adopting innovative systems to make the world supply chain for high-tech and high-value added products more efficient.
• When it comes to deregulation and open skies, we must continue to support policies that make the global marketplace flexible and open.
• And finally, when it comes to air transport safety, the industry must support new standards and embrace modern technologies to simultaneously improve safety and productivity.
I believe if we make the right decisions on these issues, the air cargo industry will fly high for many years to come.

Thank you. Now I’ll be glad to take questions.