

# Statistical Bulletin of Civil Aviation Industry Development in 2017

## I. Transport Aviation

In 2017, given the steady recovery of global economy and the steady and good momentum of China's economy, China's civil aviation industry once again maintained steady and rapid growth in the performance of key transport indicators.

**1. Transport Turnover** . In 2017, the whole industry recorded a total transport turnover of 108.33 billion ton-km, up by 12.6% from 2016. The transport turnover on domestic routes reached 69.46 billion ton-km, increasing by 11.7% over the previous year, among which the transport turnover on Hong Kong, Macao and Taiwan routes stood at 1.61 billion ton-km, increasing by 4.3% from 2016. The international routes witnessed a transport turnover of 38.848 billion ton-km increasing by 14.3% over that of 2016 (refer to Figure 1).

A passenger turnover of 951.304 billion person-km was registered, representing an increase of 13.5% from 2016. The passenger turnover on domestic routes hit 703.653 billion person-km, an increase of 13.2% from 2016, of which 14.825 billion person-km was attributable to Hong Kong, Macao and

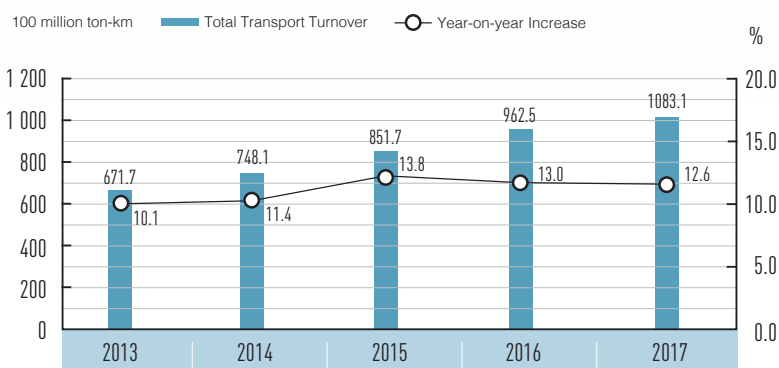


Figure 1 Total Transport Turnover of Civil Aviation 2013-2017

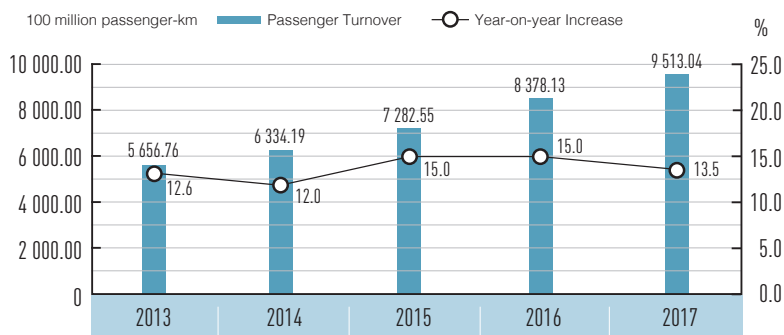


Figure 2 Passenger Turnover of Civil Aviation 2013-2017

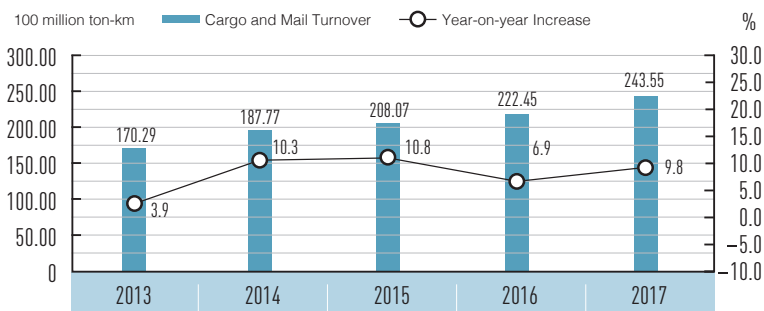


Figure 3 Cargo and Mail Turnover of Civil Aviation 2013-2017

Taiwan routes, an increase of 2.9% from 2016. The passenger turnover on international routes reached 247.651 billion passenger-km, an increase of 14.6% from 2016 (refer to Figure 2).

The whole industry completed a cargo and mail turnover of 24.355 billion ton-km, increasing by 9.8% from 2016, of which 7.297 billion ton-km was attributable to domestic routes, increasing by 1.2% from 2016, including 305 million ton-km on Hong Kong, Macao and Taiwan routes, increasing by 11.0% from 2016. The cargo and mail turnover on international routes reached 17.059 billion ton-km, increasing by 13.9% over 2016 (refer to Figure 3).

**2. Passenger Traffic.** In 2017, the whole industry transported 551.56 million passengers, up by 13.0% from a year earlier. 496.11 million passengers were transported on domestic routes, up by 13.7% from 2016, including 10.27 million on Hong Kong, Macao and Taiwan routes, down by 4.3% from 2016; the international routes saw a passenger traffic of 55.45 million, up by 7.4% from 2016 (refer to Figure 4).

**3. Cargo and Mail Turnover.** In 2017, the whole industry transported 7.059 million tons of cargo and mail, up by 5.6% from a year earlier. 4.838 million tons of cargo and mail was transported on domestic routes, up by 1.9% from 2016, including 242 thousand tons on Hong Kong, Macao and Taiwan routes, up by 10.0% from 2016; the international routes saw a mail and cargo traffic of 2.221 million tons, up by 15.0% from 2016 (refer to Figure 5).

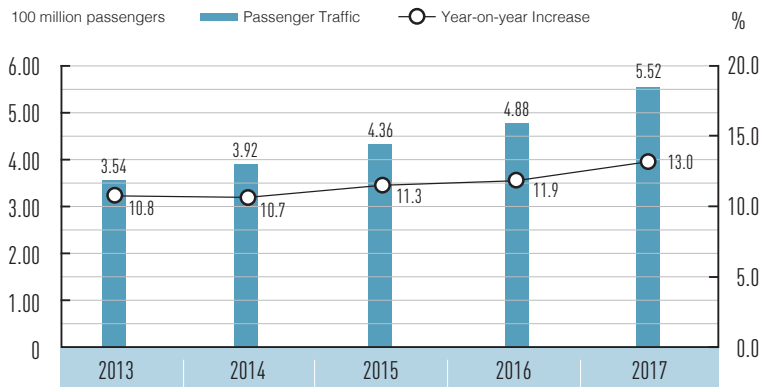


Figure 4 Passenger Traffic of Civil Aviation 2013-2017

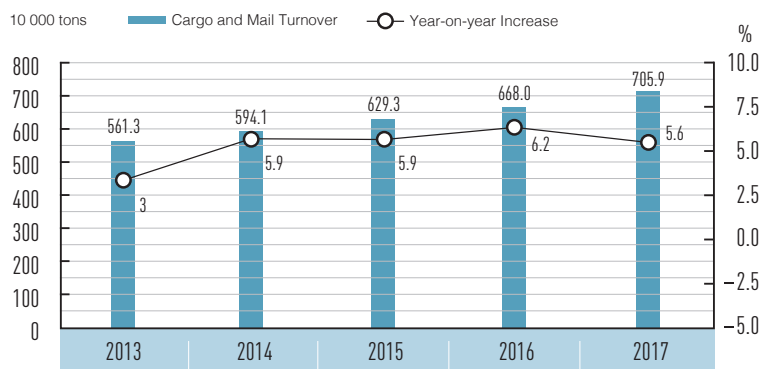


Figure 5 Cargo and Mail Transported by Civil Aviation 2013-2017

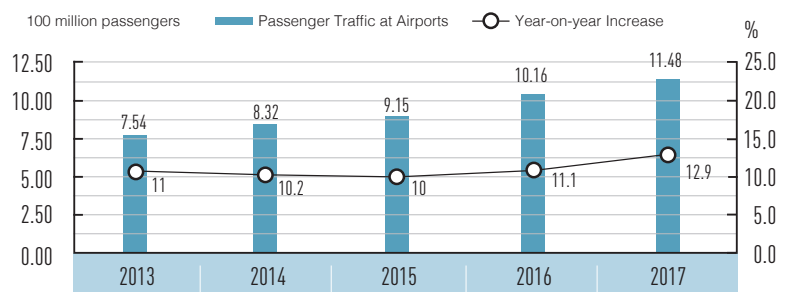


Figure 6 Passenger Traffic at Civil Transport Airports 2013-2017

**4. Traffic at Airports.** In 2017, the civil transport airports nationwide realized a passenger traffic of 1.148 billion, up by 12.9% from 2016 (refer to Figure 6).

Specifically, 614 million passengers were transported by airports in East China; 72 million by airports in Northeast China; 122 million by airports in Central China; and 340 million by airports in West China in

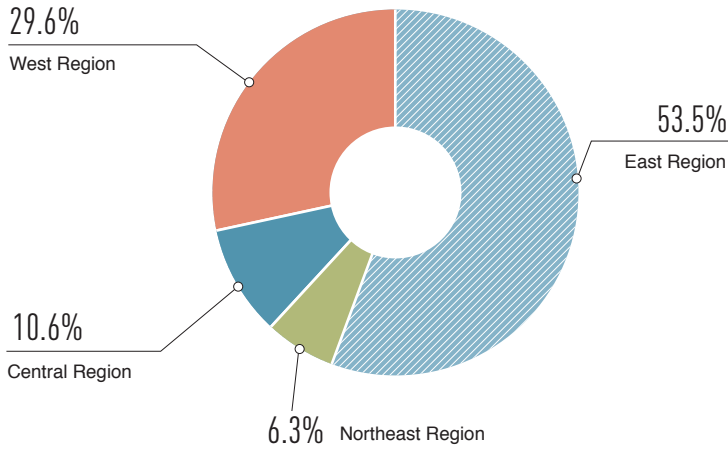


Figure 7 Distribution of Cargo and Mail Traffic at Airports by Region in 2017

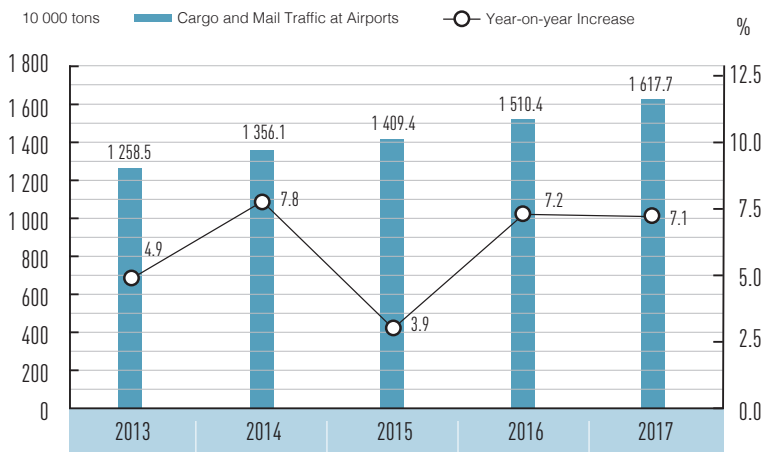


Figure 8 Cargo and Mail Traffic at Civil Transport Airports 2013-2017

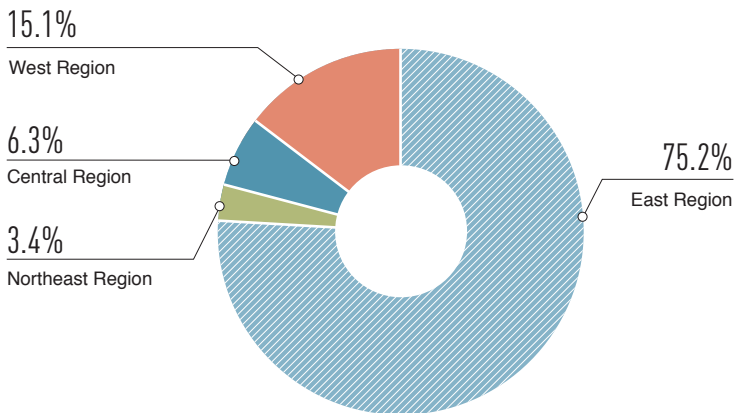


Figure 9 Distribution of Cargo and Mail Traffic at Airports by Region in 2017

2017 (refer to Figure 7).

In 2017, the civil transport airports nationwide realized a cargo and mail traffic of 16.1773 million tons, up by 7.1% from 2016 (refer to Figure 8).

Specifically, 12.1589 million tons of cargo and mail was transported by airports in East China; 547.4 thousand tons by airports in Northeast China; 1.0261 million tons by airports in Central China; and 2.4449 million tons by airports in West China in 2017 (refer to Figure 9).

In 2017, the civil transport airports nationwide realized 10.249 million flight movements, up by 10.9% from 2016 (refer to Figure 10).

In 2017, there were 84 transport airports with a passenger traffic exceeding 1 million, among which the airports of Beijing, Shanghai and Guangzhou contributed 24.3% to the total (refer to Table 1).

In 2017, there were 52 transport airports with a cargo and mail traffic of more than 10 thousand tons, among which, the cargo and mail traffic at the airports of Beijing, Shanghai and Guangzhou accounted for 49.9% of the total (refer to Table 2).

In 2017, Beijing Capital International Airport posted a traffic of 96 million passengers, ranking the second in the world for the 7th straight year; Shanghai Pudong Airport realized a cargo and mail traffic of 3.824 million tons, ranking the third in the world for ten years in a row.

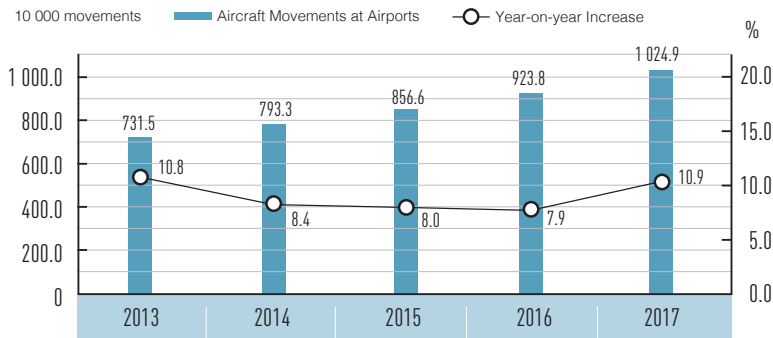


Figure 10 Aircraft Movements at Civil Transport Airports 2013-2017

Table 1 Number of Airports with Passenger Traffic Exceeding 1 Million in 2017

Annual Passenger Traffic	Number of Airports	Increase from 2015	Percentage of Total (%)
More Than 10 Million Passengers	32	4	81.0
1~10 Million Passengers	52	3	14.9

Table 2 Number of Airports with Cargo and Mail Traffic Exceeding 10 000 Tons in 2017

Annual Cargo and Mail Traffic	Number of Airports	Increase from 2015	Percentage of Total (%)
10 000 Tons or Above	52	2	98.5

Table 3 Number of Certified Transport Airports by Region in 2017

Region	Number of Certified Transport Airports	Percentage of the Total (%)
Nationwide	229	100.0
Including: Northeast Region	27	11.8
East Region	54	23.6
West Region	114	49.8
Central Region	34	14.8

Table 4 Number of Scheduled Flight Routes and Mileage in China in 2017

Indicator	Value
Number of Air Routes	4 418
Domestic Air Routes	3615
Including: Hong Kong, Macao and Taiwan Air Routes	96
International Air Routes	803
Air Route Mileage Including Overlapped Distance (10 000 km)	1 082.9
Domestic Air Routes	706.6
Including: Hong Kong, Macao and Taiwan Air Routes	15.3
International Air Routes	376.3
Air Route Mileage Excluding Overlapped Distance (10 000 km)	748.3
Domestic Air Routes	423.7
Including: Hong Kong, Macao and Taiwan Air Routes	14.8
International Air Routes	324.6

**5. Transport Aircraft Fleet.** By the end of 2017, the civil aviation industry had 3 296 registered transport aircraft, 346 more than that by the end of 2016.

**6. Number of Airports.** By the end of 2017, there were 229 certified transport airports in China, up by 11 from 2016. Newly built airports in 2017 were Lancang Airport in Yunnan, Yarkant Airport in Xinjiang, Huolinguole Airport of Inner Mongolia, Songyuan Airport in Jilin, Baicheng Airport in Jilin, Shangrao Airport in Jiangxi, Chengde Airport in Henbei, Shaoyang Airport in Hunan, Maotai Airport in Guizhou, Wudalianchi Airport in Heilongjiang, and Jiansanjiang Airport in Heilongjiang, and Ankang Airport of Shaanxi ceased operation (refer to Table 3).

**7. Route Network.** By the end of 2017, there were 4 418 scheduled flight routes in China with a mileage of 10.829 million km including the overlapped distance, or 7.483 million km excluding the overlapped distance (refer to Table 4).

By the end of 2017, there were 224 Chinese cities with domestic scheduled flights (excluding Hong Kong, Macao and Taiwan); Chinese airlines operated scheduled international flights to 158 cities in 60 countries; domestic airlines operated scheduled flights to Hong Kong from 30 mainland cities and to Macao from 12 mainland cities and to Taiwan from 46 mainland cities.

**8. Foreign Relations.** By the end of 2017, China had already signed

122 bilateral air service agreements with other countries or regions, up by 2 (Panama and Slovenia) from 2016, including 44 in Asia (including ASEAN), 24 in Africa, 37 in Europe, 10 in Americas and 7 in Oceania.

**9. Operations of Transport Airlines (Groups).** By the end of 2017, there were a total of 58 transport airlines in China, a net decrease of 1 from that in 2016. By the type of ownership, there were 43 state-holding airlines and 15 private and privately-holding airlines. Among all the transport airlines, there were 8 all-cargo airlines, 10 joint venture airlines and 7 publicly listed airlines.

China National Aviation Holding Group recorded 2.533 million flight hours and a total transport turnover of 28.64 billion ton-km, up by 9.4% from a year earlier; it carried 126 million passengers, up by 9.2% from 2016 and 2.011 million tons of cargo and mail, up by 4.9% from 2016.

China Eastern Air Holding Group recorded 2.111 million flight hours and a total transport turnover of 21.32 billion ton-km, up by 8.2% from a year earlier; it carried 111 million passengers, up by 8.9% from 2016 and 1.439 million tons of cargo and mail, up by 3.1% from 2016.

China Southern Air Holding Group recorded 2.566 million flight hours and a total transport turnover of 27.29 billion ton-km, up by 11.9% from a year earlier; it carried 126 million passengers, up by 10.2% from 2016 and 1.672 million tons of cargo and mail, up by 3.7% from 2016.

Hainan Airlines Group recorded 1.674 million flight hours and a total transport

turnover of 16.83 billion ton-km, up by 18.9% from a year earlier; it carried 98 million passengers, up by 19.1% from 2016 and 783 thousand tons of cargo and mail, down by 0.3% from 2016.

All other airlines together recorded 1.714 million flight hours and a total transport turnover of 14.23 billion ton-km, up by 20.9% from a year earlier; they carried 90 million passengers, up by 22.4% from 2016 and 1.155 million tons of cargo and mail, up by 18.7% from 2016 (refer to Figure 11).

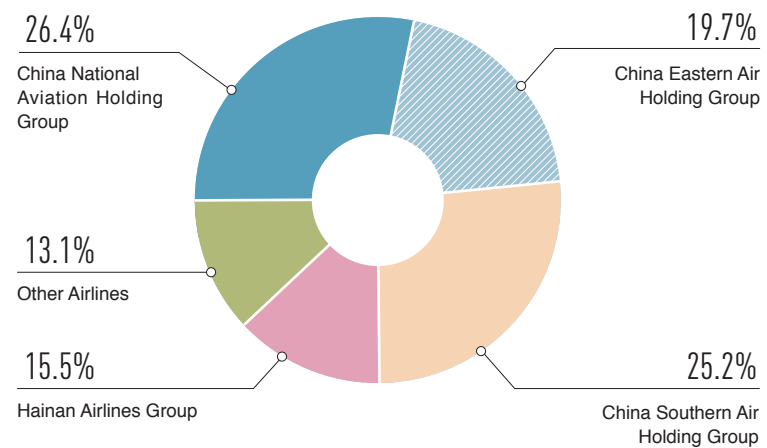


Figure 11 Proportions of Total Transport Turnover by Airlines (Groups) in 2017

## II. General Aviation

**1. Flight Hours.** In 2017, the whole general aviation industry posted 837.5 thousand flight hours, up by 9.5% from a year earlier, including 89.3 thousand hours of industrial aviation operations, up by 7.8% from 2016; 59.6 thousand hours of agricultural and forestry aviation operations, up by 16.8%; and 688.6 thousand hours of other general aviation operations, up by 9.2%.

**2. General Aviation Enterprises.** By the end of 2017, there were 365 certified general aviation enterprises, including 92 in North China, 77 in Central Southern China, 80 in East China, 32 in Northeast China, 40 in Southwest China, 32 in Northwest China and 12 in Xinjiang.

**3. Aircraft Fleet Size.** By the end of 2017, there were a total of 2 297 registered general aviation aircraft, including 680 aircraft for training.

### III. Transport Efficiency and Financial Performance

**1. Transport Efficiency.** In 2017, the average daily use rate of registered transport aircraft industrywide stood at 9.49 hours, down by 0.08 hours from 2016. Specifically, the average daily use rate of medium and large sized aircraft was 9.63 hours, up by 0.06 hours from a year earlier, whereas that of small-sized aircraft was 7.04 hours, up by 0.4 hours.

In 2017, the passenger load factor for scheduled flights averaged 83.2%, up by 0.6 percentage points from 2016.

In 2017, the weight load factor for scheduled flights averaged 73.5%, up by 0.8 percentage points from 2016 (Refer to Table 5).

**2. Financial Performance.** According to preliminary statistics, in 2017, the whole civil aviation industry made 746.06 billion yuan in business revenue, up by 15.3% from 2016, and 65.23 billion yuan in profit, up by 7.17 billion yuan from a year earlier. Specifically, airlines made 533.38 billion yuan in business revenue, up by 11.9% from a year earlier, and 40.82 billion yuan in profit, up by 3.26 billion yuan from 2016; airports made 95.80 billion yuan in business revenue, up by 14.6% from 2016, and 15.40 billion yuan in profit, up by 3.09 billion yuan from 2016; support businesses made 116.88 billion yuan in business revenue, up by 35.1%, and 9.01 billion yuan in profit, up by 810 million yuan from a year earlier.

Table 5 Passenger Load Factor and Weight Load Factor for Scheduled Flights in 2017

Indicator	Value (%)	Increase from 2016 (Percentage Point)
Passenger Load Factor of Scheduled Flights	83.2	0.6
Domestic Air Routes	84.8	1.0
Including: Hong Kong, Macao and Taiwan Air Routes	80.2	2.4
International Air Routes	78.9	-0.5
Weight Load Factor of Scheduled Flights	73.5	0.8
Domestic Air Routes	75.9	0.4
Including: Hong Kong, Macao and Taiwan Air Routes	67.5	1.9
International Air Routes	69.6	1.5

According to preliminary statistics, in 2017, across the whole industry, the revenue per ton-km was 4.57 yuan, down by 0.08 yuan from the previous year. Passenger revenue per ton-km was 5.51 yuan, down by 0.18 yuan from 2016; cargo and mail revenue per ton-km was 1.48 yuan, up by 0.15 yuan from 2016.

According to preliminary statistics, in 2017, the taxes payable by the whole civil aviation industry stood at 38.14 billion yuan, up by 5.6% from 2016.

### IV. Aviation Safety and Service Quality

**1. Aviation Safety.** In 2017, the civil aviation industry of China maintained a stable safety situation. There was no transport aviation accident, with the 10-year rolling value of the major transport accident rate per one million hours standing at 0.015 compared with the world average level of 0.175. There were 6 general aviation accidents, resulting in 4 deaths.

From August 25, 2010 to the end of 2017, transport aviation had been operating safely for 88 months, with an accumulated 56.82 million hours of safe flight.

2017 saw 587 incidents, including 19 severe transport aviation incidents representing increases of 12.45% and 5.56% respectively from 2016. The rate of severe incidents and the rate of incidents caused by human factors per 10 000 flight hours were 0.018 and





0.030 respectively. All safety indicators fell within the value ranges set for the year.

In 2017, 41 transport airlines of the industry were free of human factor incidents.

**2. Aviation Security.** In 2017, the civil aviation security inspection departments screened 566 million passengers, 319 million items of checked baggage, 443 million items of air cargo (excluding mails and express deliveries), and 199 million mails and express deliveries, and handled 52 cases of unlawful interferences involving falsified terrorist threat information.

**3. Flight Regularity Rate.** In 2017, passenger airlines in China operated 4.039 million flights in total, among which 2.895 million flights were regular, with an average flight regularity rate of 71.67%.

In 2017, major airlines operated 2.988 million flights in total, among which 2.129 million flights were punctual, with an average flight regularity rate of 71.25% (refer to Table 6).

In 2017, the average delay time of passenger flights in China was 24 minutes, up by 8 minutes on a year-on-year basis.

**4. Passenger Complaints.** In 2017, CAAC, its regional administrations, CAAC Consumer Affairs Center and China Air Transport Association accepted 24 781 aviation consumer complaints in total, up by 5 615, representing an increase of 29.3%.

Table 6 Causes of Flight Irregularity in 2017

Item	% of the Total	Growth from 2016(%)
<b>Causes of Flight Irregularity for All Airlines</b>	<b>100.00</b>	<b>0.00</b>
Including: Weather	51.28	-5.24
Airlines	8.62	-0.92
ATC	7.72	-0.51
Others	32.38	6.67
<b>Causes of Flight Irregularity for Major Airlines</b>	<b>100.00</b>	<b>0.00</b>
Including: Weather	51.47	-4.99
Airlines	9.26	-0.37
ATC	8.12	-0.17
Others	31.15	5.53

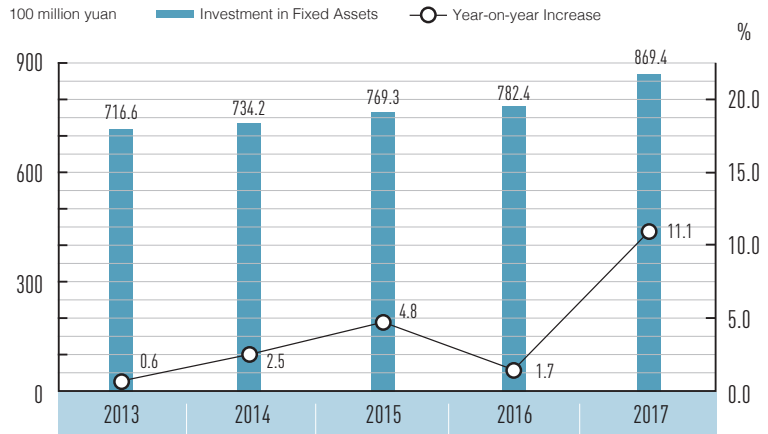


Figure 12 Investment in Civil Aviation Infrastructure Development and Technological Upgrading 2013-2017

## V. Investment in Fixed Assets

In 2017, China's civil aviation made investment in fixed assets to the tune of 180.69 billion yuan, of which 86.94 billion yuan went to civil aviation infrastructure development and technological upgrading, up by 11.1% from 2016 (refer to Figure 12).

Investment in infrastructure development and technological upgrading can be classified as follows: airport system made investment in fixed

assets worth 74.14 billion yuan, up by 8.10 billion; the ATM system made investment in fixed assets to the tune of 2.33 billion yuan, nearly flat with the previous year. 140 million yuan investment was made in civil aviation information system development, 1.46 billion yuan in civil aviation scientific studies and education system, 320 million yuan in civil aviation security system, 200 million yuan in civil aviation mechanic maintenance system, 1.52 billion yuan in transport service system, 1.0 billion yuan in public facility investment and 5.83 billion yuan in other systems.

## VI. Energy Conservation and Emissions Reduction

In 2017, the ton-km energy consumption of China's civil aviation stood at 0.293 kg, down by 13.82% from 2005 (the base year for the industry's energy conservation and emissions reduction target); the energy consumption per passenger at airports fell by 22% from the end of the 12th Five-Year Plan period.

In 2017, 355 thousand flights used temporary routes, cutting the a flight distance by 13.43 million km, saving fuel consumption of 72 thousand tons and cutting carbon dioxide emissions by 228 thousand tons. By the end of 2017, 90% of the airports with an annual traffic volume of over 5 million passengers completed the APU alternative equipment installation and put them into operation.

By the end of 2017, 459 electric vehicles and 213 recharging facilities became

operational under the pilot project of oil-to-electricity at 6 airports including Beijing Capital Airport and Chengdu Shuangliu Airport, leading to roughly 2 000 tons reduction of gasoline and diesel consumption.

## VII. Education and Science and Technology

In 2017, the enrollment by universities and colleges directly under CAAC totaled 21 636, among which, 882 were postgraduate students, 18 573 undergraduates and junior college students, and 2 181 adult students.

In 2017, the number of registered students at universities and colleges directly under CAAC stood at 70 291, among which 2 743 were postgraduate students, 62 706 undergraduates and junior college students, 4 842 adult students.

In 2017, a total of 16 846 students graduated from universities and colleges directly under CAAC, among which, there were 822 postgraduates, 13 868 undergraduates and junior college students, and 2 156 adult students.

In 2017, CAAC inspected and accepted a total of 20 scientific and technological achievements, and elected 28 for the awards for science and technology of CATA, certified 14 key labs and engineering and technology research centers in civil aviation.

## VIII. Number of Pilots

Table 7 Statistics of Civil Aviation Pilots of China in 2017

Type of License		Number	Year-on-year Increase
Aircraft	Private Pilot License	2 642	182
	Commercial Pilot License	27 349	2 105
	Airline Transport Pilot License	22 195	2 502
	Multi-crew Pilot License	147	43
Helicopter Pilot License		2 741	341
Other Aircraft Pilot License		805	97

By the end of 2017, there were 55 765 licensed pilots in the industry, up by 5 261 from 2016 (refer to Table 7). ■