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2016年 民航行业发展统计公报

2016年，全行业深入贯彻党的十八大、十八届六中全会和中央经济工作会议精神，认真落实中央领导批示精神和《国务院关于促进民航业发展的若干意见》，在“一二三四”的总体工作思路指引下，坚持安全第一，稳中求进，深化改革，各项工作取得较大成绩，实现了“十三五”的良好开局。

一、运输航空

2016年，在世界经济和贸易增速处于7年来最低水平，国内经济下行压力加大的情况下，民航主要运输指标继续保持平稳较快增长。

1. 运输总周转量

2016年，全行业完成运输总周转量962.51亿吨公里，比上年增长13.0%。国内航线完成运输总周转量621.93亿吨公里，比上年增长11.2%，其中港澳台航线完成15.43亿吨公里，比上年下降4.9%；国际航线完成运输总周转量340.58亿吨公里，比上年增长16.4%。（见图1）

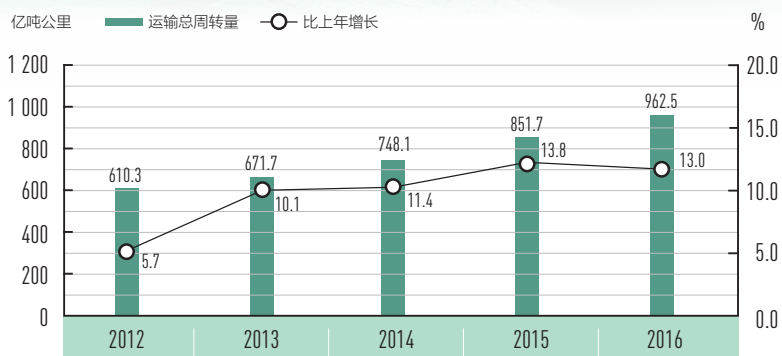


图1 2012—2016年民航运输总周转量

全行业完成旅客周转量8 378.13亿人公里，比上年增长15.0%。国内航线完成旅客周转量6 217.75亿人公里，比上年增长11.7%，其中港澳台航线完成144.10亿人公里，比上年下降5.1%；国际航线完成旅客周转量2 160.38亿人公里，比上年增长25.8%。（见图2）

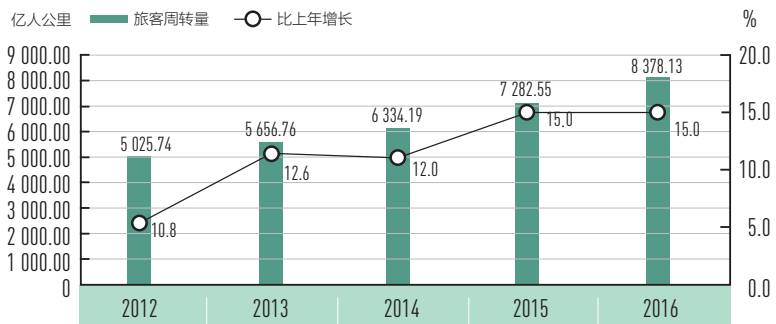


图2 2012—2016年民航旅客周转量

全行业完成货邮周转量222.45亿吨公里，比上年增长6.9%。国内航线完成货邮周转量72.11亿吨公里，比上年增长7.7%，其中港澳台航线完成2.75亿吨公里，比上年下降3.4%；国际航线完成货邮周转量150.34亿吨公里，比上年增长6.5%。（见图3）

2. 旅客运输量

2016年，全行业完成旅客运输量48 796万人次，比上年增长11.9%。国内航线完成旅客运输量43 634万人次，比上年增长10.7%，其中港澳台航线完成985万人次，比上年下降3.4%；国际航线完成旅客运输量5 162万人次，比上年增长22.7%。（见图4）

3. 货邮运输量

2016年，全行业完成货邮运输量668.0万吨，比上年增长6.2%。国内航线完成货邮运输量474.8万吨，比上年增长7.3%，其中港澳台航线完成22.0万吨，比上年下降0.6%；国际航线完成货邮运输量193.2万吨，比上年增长3.4%。（见图5）

4. 机场业务量

2016年，全国民航运输机场完成旅客吞吐量10.16亿人次，比上年增长11.1%。（见图6）

其中：2016年东部地区完成旅客吞吐量5.51亿人次，东北地区完成旅客吞吐量0.62亿人次，中部地区完成旅客吞吐量1.02亿人次，西部地区完成旅客吞吐量3.01亿人次。（见图7）

2016年全国民航运输机场完成货邮吞吐量1 510.40万吨，比上年增长7.2%。（见图8）

其中：2016年东部地区完成货邮吞

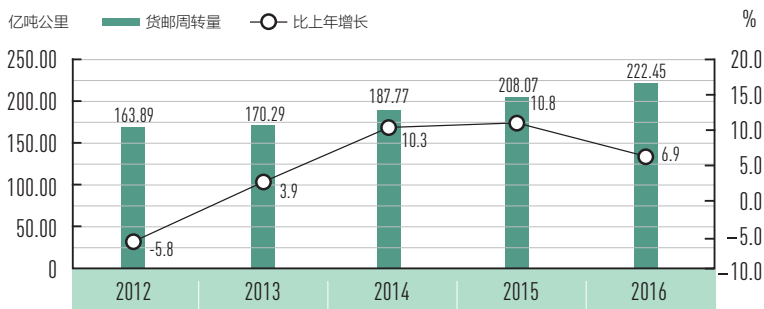


图3 2012—2016年民航货邮周转量

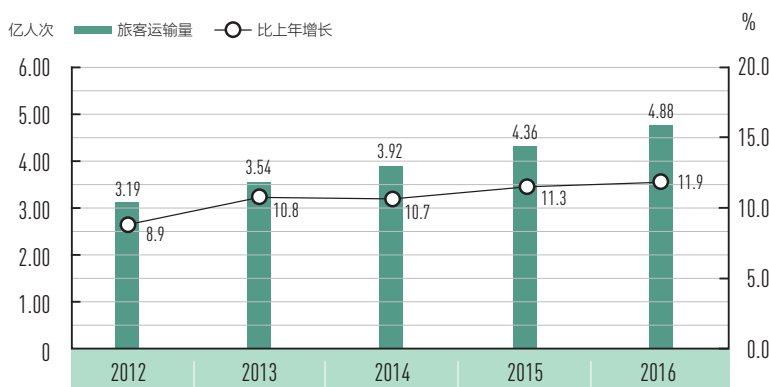


图4 2012—2016年民航旅客运输量

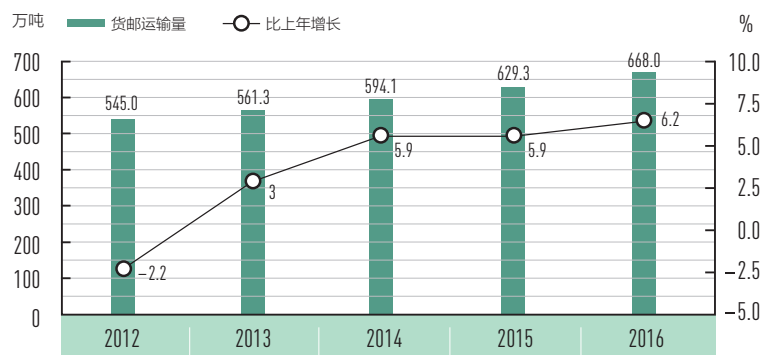


图5 2012—2016年民航货邮运输量

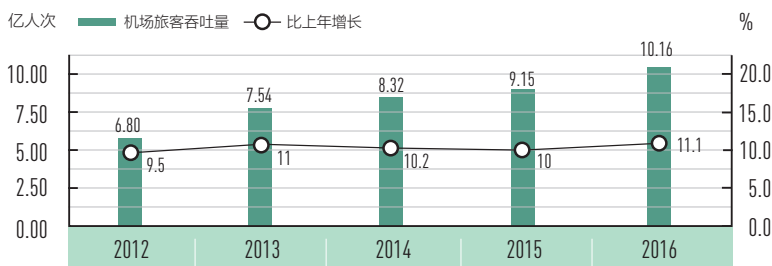


图6 2012—2016年民航运输机场旅客吞吐量

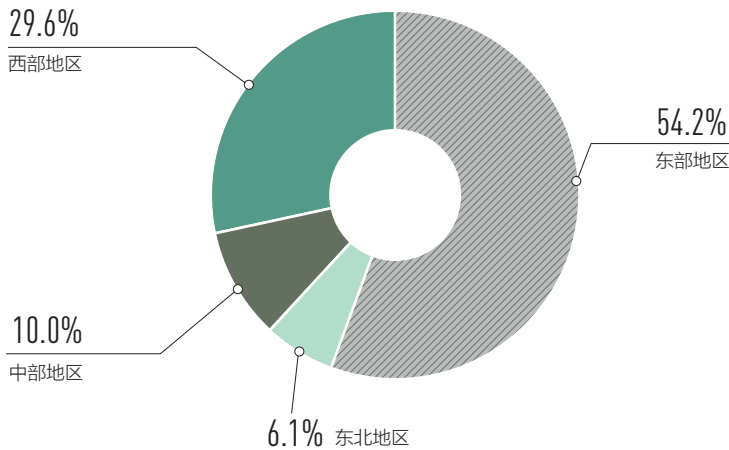


图7 2016年民航运输机场旅客吞吐量（按地区分布）

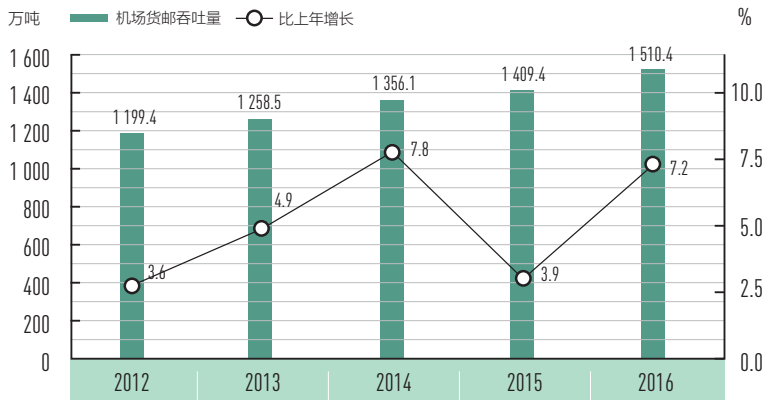


图8 2012—2016年民航运输机场货邮吞吐量

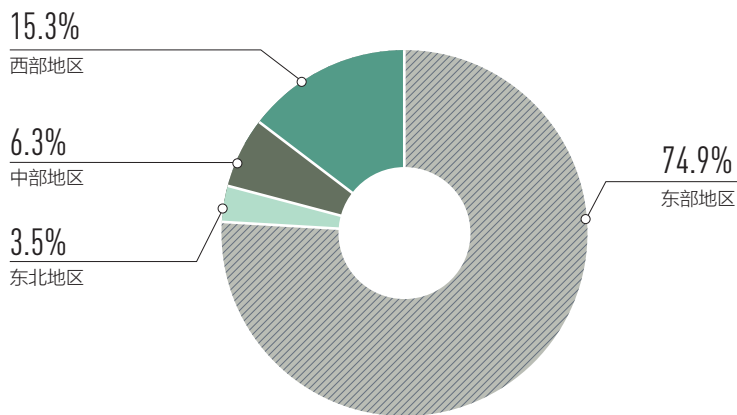


图9 2016年民航运输机场货邮吞吐量（按地区分布）

吐量1 131.37万吨，东北地区完成货邮吞吐量53.10万吨，中部地区完成货邮吞吐量95.45万吨，西部地区完成货邮吞吐量230.49万吨。（见图9）

2016年，全国民航运输机场完成起降架次923.8万架次，比上年增长7.9%。（见图10）

2016年，年旅客吞吐量100万人次以上的运输机场77个，其中北京、上海和广州三大城市机场旅客吞吐量占全部境内机场旅客吞吐量的26.2%。（见表1）

2016年，年货邮吞吐量1万吨以上的运输机场50个，其中北京、上海和广州三大城市机场货邮吞吐量占全部境内机场货邮吞吐量的49.6%。（见表2）

2016年，北京首都机场完成旅客吞吐量0.94亿人次，连续七年位居世界第二；上海浦东机场完成货邮吞吐量344.0万吨，连续九年位居世界第三。

5. 运输机队

截至2016年底，民航全行业运输飞机期末在册架数2 950架，比上年底增加300架。

6. 机场数量

截至2016年底，我国共有颁证运输机场218个，比上年底增加8个。2016年新增机场分别为山西临汾机场、湖北十堰机场、福建三明机场、海南琼海机场、青海果洛机场、内蒙古乌兰察布机场、内蒙古扎兰屯机场、海南三沙机场、云南沧源机场。另外，完成了河北秦皇岛机场、新疆且末机场迁建。陕西安康机场停航，江西九江机场注销（2016年5月）。（见表3）

7. 航线网络

截至2016年底，我国共有定期航班

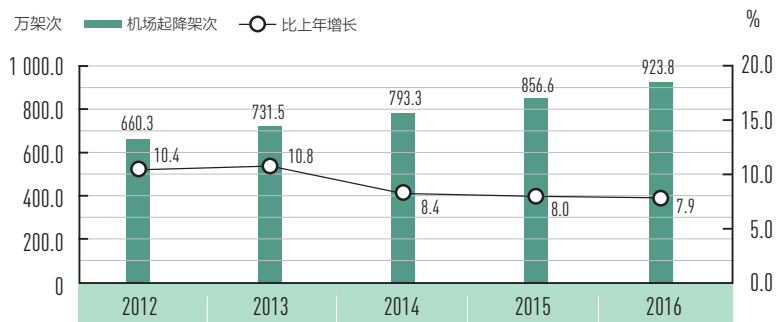


图10 2012—2016年民航运输机场飞机起降架次

表1 2016年旅客吞吐量100万人次以上的机场数量 单位: 个

年旅客吞吐量	机场数量	比上年增加	吞吐量占全国比例 (%)
1 000万人次以上	28	2	79.1
100~1 000万人次	49	5	16.7

表2 2016年货邮吞吐量万吨以上的机场数量 单位: 个

年货邮吞吐量	机场数量	比上年增加	吞吐量占全国比例 (%)
10 000 吨以上	50	-1	98.3

表3 2016年各地区颁证运输机场数量 单位: 个

地区	颁证运输机场数量	占全国比例 (%)
全国	218	100.0
其中: 东北地区	23	10.6
东部地区	53	24.3
西部地区	110	50.5
中部地区	32	14.7

表4 2016年我国定期航班航线条数及里程

指标	数量
航线条数 (条)	3 794
国内航线	3 055
其中: 港澳台航线	109
国际航线	739
按重复距离计算的航线里程 (万公里)	919.3
国内航线	580.1
其中: 港澳台航线	17.3
国际航线	339.1
按不重复距离计算的航线里程 (万公里)	634.8
国内航线	352.0
其中: 港澳台航线	16.7
国际航线	282.8

航线3 794条,按重复距离计算的航线里程为919.3万公里,按不重复距离计算的航线里程为634.8万公里。(见表4)

截至2016年底,定期航班国内通航城市214个(不含香港、澳门、台湾)。我国航空公司国际定期航班通航56个国家的145个城市,国内航空公司定期航班从38个内地城市通航香港,从10个内地城市通航澳门,大陆航空公司从48个大陆城市通航台湾地区。

8. 对外关系

截至2016年底,我国与其他国家或地区签订双边航空运输协定120个,比上年底增加2个(萨摩亚、巴布亚新几内亚),其中:亚洲有44个(含东盟),非洲有24个,欧洲有36个,美洲有9个,大洋洲有7个。

9. 运输航空(集团)公司生产

截至2016年底,我国共有运输航空公司59家,比上年底增加4家,按不同所有制类别划分:国有控股公司44家,民营和民营控股公司15家;全部运输航空公司中:全货运航空公司8家,中外合资航空公司11家,上市公司7家。

中航集团完成飞行小时237.4万小时,完成运输总周转量261.7亿吨公里,比上年增长10.1%,完成旅客运输量1.15亿人次,比上年增长9.3%,完成货邮运输量191.6万吨,比上年增长7.0%。

东航集团完成飞行小时197.3万小时,完成运输总周转量197.3亿吨公里,比上年增长10.6%,完成旅客运输量1.02亿人次,比上年增长8.6%,完成货邮运输量139.5万吨,比上年下降0.3%。

南航集团完成飞行小时237.5万小时,完成运输总周转量243.9亿吨公里,

比上年增长8.9%，完成旅客运输量1.15亿人次，比上年增长4.8%，完成货邮运输量161.3万吨，比上年增长6.7%。

海航集团完成飞行小时139.5万小时，完成运输总周转量142.1亿吨公里，比上年增长22.9%，完成旅客运输量0.83亿人次，比上年增长22.4%，完成货邮运输量78.4万吨，比上年增长0.8%。

其他航空公司共完成飞行小时137.7万小时，完成运输总周转量117.5亿吨公里，比上年增长22.4%，完成旅客运输量0.73亿人次，比上年增长22.7%，完成货邮运输量97.3万吨，比上年增长19.6%。（见图11）

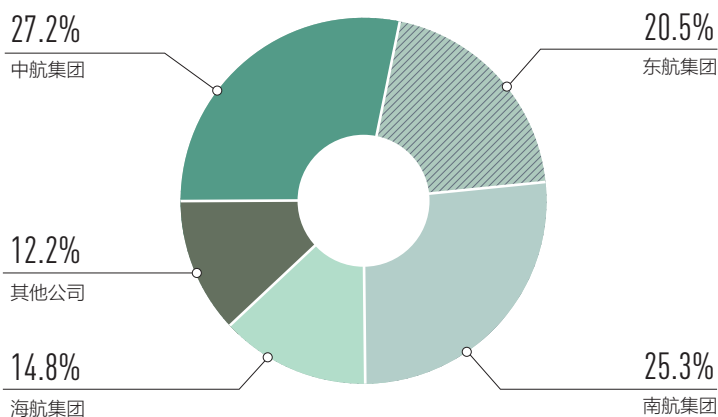


图11 2016年各航空（集团）公司运输总周转量比重

表5 2016年正班客座率和正班载运率

指标	指标值（%）	比上年增长（百分点）
正班客座率	82.6	0.5
国内航线	83.8	0.8
其中：港澳台航线	77.8	1.0
国际航线	79.4	0.1
正班载运率	72.7	0.5
国内航线	75.5	1.4
其中：港澳台航线	65.6	1.8
国际航线	68.1	-0.7

二、通用航空

1. 飞行小时

2016年，全行业完成通用航空生产飞行76.47万小时，比上年下降1.9%。其中：工业航空作业完成8.29万小时，比上年下降3.0%；农林业航空作业完成5.10万小时，比上年增长21.3%；其他

通用航空飞行63.08万小时，比上年下降3.2%。

2. 通用航空企业

截至2016年底，获得通用航空经营许可证的通用航空企业320家，其中，华北地区79家，中南地区65家，华东地区66家，东北地区31家，西南地区43家，西北地区29家，新疆地区7家。

3. 机队规模

2016年底，通用航空企业在册航空器总数达到2 096架，其中教学训练用飞机621架。

三、运输效率与经济效益

1. 运输效率

2016年，全行业在册运输飞机平均日利用率为9.41小时，比上年减少0.08小时。其中，大中型飞机平均日利用率为9.57小时，比上年减少0.09小时，小型飞机平均日利用率为6.64小时，比上年增加0.06小时。

2016年，正班客座率平均为82.6%，比上年提高0.5个百分点。

2016年，正班载运率平均为72.7%，比上年提高0.5个百分点。（见表5）

2. 经济效益

据初步统计，2016年，全行业累计实现营业收入6 393亿元，比上年增长6.3%，利润总额568.4亿元，比上年增加81.7亿元。其中，航空公司实现营业收入4 694.7亿元，比上年增长8.2%，利润总额364.8亿元，比上年增加37.9亿元；机场实现营业收入832.5亿元，比上年增长7.2%，利润总额117.7亿元，比上年增加17.1亿元；保障企业实现营业收入865.8亿



元，比上年下降3.5%，利润总额85.9亿元，比上年增加26.7亿元。

据初步统计，2016年，全行业运输收入水平为4.51元/吨公里，比上年下降0.28元/吨公里。其中，客运收入水平5.5元/吨公里，比上年下降0.42元/吨公里；货邮运输收入水平1.3元/吨公里，比上年下降0.09元/吨公里。

据初步统计，2016年，民航全行业应交税金296.5亿元。

四、航空安全与服务质量

1. 航空安全

2016年，民航安全形势平稳。全行业未发生运输航空事故，运输航空百万小时重大事故率10年滚动值为0.016（世界平均水平为0.217）。发生通用航空事故10起，死亡19人。

自2010年8月25日至2016年底，运输航空连续安全飞行76个月，累计安全飞行4 623万小时。

2016年，全年共发生运输航空事故征候519起，其中运输航空严重事故征候18起。严重事故征候和人为责任原因事故征候万时率分别为0.019和0.039，各项指标均较好控制在年度安全目标范围内。

2016年，全行业共有37家运输航空公司未发生责任事故征候。

2. 空防安全

2016年，全国民航安检部门共检查旅客5.15亿人次，检查旅客托运行李2.92亿件次，检查航空货物（不含邮件、快件）3.89亿件次，检查邮件、快件1.56亿件次，处置违规和不文明旅客行为14 740起，处置编造虚假恐怖威胁信息非法干扰

事件75起。

3. 航班正常率

2016年，全国客运航空公司共执行航班367.9万班次，其中正常航班282.4万班次，平均航班正常率为76.76%。

2016年，主要航空公司共执行航班284.6万班次，其中正常航班217.8万班次，平均航班正常率为76.54%。（见表6）

表6 2016年航班不正常原因分类统计

指标	占全部比例（%）	比上年增长（百分点）
全部航空公司航班不正常原因	100.00	0.00
其中：航空公司原因	9.54	-9.56
空管原因	8.24	-22.44
天气原因	56.52	26.99
其他	25.70	5.01
主要航空公司航班不正常原因	100.00	0.00
其中：航空公司原因	9.63	-8.42
空管原因	8.30	-21.79
天气原因	56.46	26.30
其他	25.61	3.91

2016年，全国客运航班平均延误时间为16分钟，同比减少5分钟。

4. 旅客投诉情况

2016年，民航局、各地区管理局、民航局消费者事务中心和中国航空运输协会共受理航空消费者投诉19 952件。2016年全年受理投诉总量比上年增加10 849件，增长84%。

五、固定资产投资

2016年，民航固定资产投资总额1 700.0亿元，其中：民航基本建设和技术改造投资782.4亿元，比上年增长1.7%。（见图12）

基本建设和技术改造投资按系统划分如下：机场系统完成固定资产投资总额660.0亿元，比上年增长0.6%。空管系统完成固定资产投资24.2亿元，比上年增加6.52亿元。民航其他系统完成固定资产投资总额98.24亿元，比上年增加2.74亿元，其中：民航信息系统建设投资11.83亿元，民航科研、教育系统投资5.87亿元，民航安全保卫

系统投资3.02亿元，民航机务维修系统投资2.33亿元，运输服务系统投资14.77亿元，公共设施系统投资11.13亿元，其他系统投资49.29亿元。

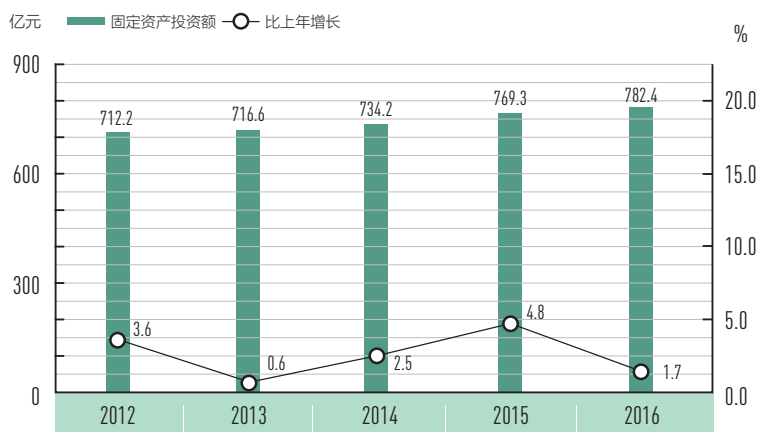


图12 2012—2016年民航基本建设和技术改造投资额

六、节能减排

2016年，中国民航吨公里油耗为0.293公斤，较2005年（行业节能减排目标基年）下降13.82%；机场每客能耗较“十二五”末(2013-2015)均值下降8.4%。

2016年，积极推动全行业采取行动，控制和减少能源消耗及排放，对行业内符合《民航节能减排专项资金项目指南》要求的67个项目提供支持。

截至2016年，全国年旅客吞吐量500万人次以上机场中90%以上的单位已完成APU替代设备安装并投入使用。全年共有32.6万架次航

表7 2016年中国民航飞行员统计表

执照种类		数量 (个)	比上年度增加 (个)
飞机	私用驾驶员执照	2 460	10
	商用驾驶员执照	25 244	2 374
	航线运输驾驶员执照	19 693	2 091
	多成员机组驾驶员执照	104	69
直升机驾驶员执照		2 400	347
其他航空器驾驶员执照		708	99

班使用临时航路，缩短飞行距离979万公里，节省燃油消耗5.3万吨，减少二氧化碳排放约16.6万吨。

七、教育与科技

2016年，民航直属院校共招收学生20 633人，其中：研究生970人，普通本专科生17 948人，成人招生1 715人。

2016年，民航直属院校在校生数达到71 078人，其中：研究生3 435人，普通本专科生60 598人，成人在校生7 045人。

2016年，民航直属院校共毕业学生16 843人，其中：硕士研究生919人，普通本专科14 006人，成人学生1 918人。

2016年，民航共验收科技成果28项，评选民航协会科学技术奖26项。

八、飞行员数量

截至2016年底，全行业取得驾驶执照飞行员50 504人，比上年底增加4 981人。（见表7）

九、工会工作

经中国民航工会申报，民航系统2个先进单位被授予“全国五一劳动奖状”、5名先进个人被授予“全国五一劳动奖章”、10个先进班组被授予“全国工人先锋号”荣誉称号。

2016年，在全行业“安康杯”竞赛活动中，共有411个单位、26 632个班组、547 899名职工参加。

2016年，在评选2014—2015年度“安康杯”竞赛活动奖项中，共有135个先进集体、44名先进个人受到表彰。■

Statistical Bulletin of Civil Aviation Industry Development in 2016

In 2016, China's civil aviation industry acted upon the guiding principles of the 18th National Congress of CPC, its 6th Plenary Session and Central Economic Work Conference, and earnestly implemented the instructions of CPC Central Committee and the State Council Opinions on Promoting Civil Aviation Development. Under the guidance of the overarching strategy of "One, Two, Three, Three and Four" (practice one concept, promote the development of public transport aviation and general aviation, safeguard three bottom lines, improve three networks and make up for four weaknesses), the whole industry adhered to the principle of Safety First, made progress while maintaining stability, deepened reform, and recorded fruitful results in various fronts of work, realizing a good start to the 13th Five-Year Plan period.

I. Total Transport Aviation

In 2016, despite the lowest growth rates of the world economy and trade in 7 years and the growing downward pressure on the domestic economy, China's civil aviation industry continued to maintain steady and rapid growth in the performance of key transport indicators.

1. Transport Turnover

In 2016, the whole industry recorded a total transport turnover of 96.251

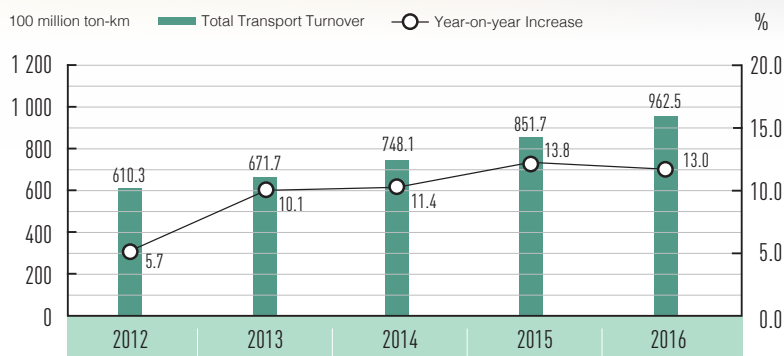


Figure 1 Total Transport Turnover of Civil Aviation 2012-2016

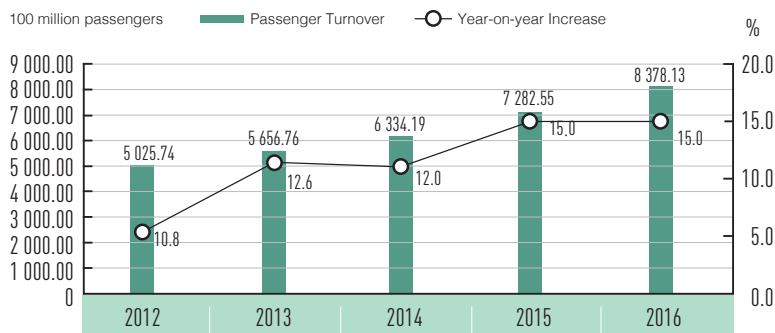


Figure 2 Passenger Turnover of Civil Aviation 2012-2016

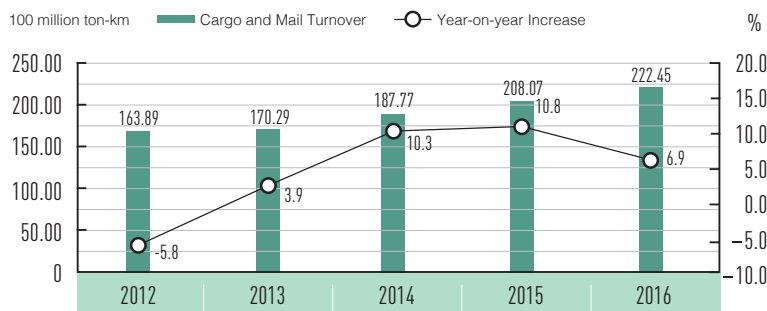


Figure 3 Cargo and Mail Turnover of Civil Aviation 2012-2016

billion ton-km, up by 13.0% from 2015. The transport turnover on domestic routes reached 62.193 billion ton-km, increasing by 11.2% over the previous year, among which the transport turnover on Hong Kong, Macao and Taiwan routes stood at 1.543 billion ton-km decreasing by 4.9% from 2015. The international routes witnessed a transport turnover of 34.058 billion ton-km increasing by 16.4% over that of 2015 (refer to Figure 1).

A passenger turnover of 837.813 billion person-km was registered, representing an increase of 15.0% from 2015. The passenger turnover on domestic routes hit 621.775 billion person-km, an increase of 11.7% from 2015, of which 14.410 billion person-km was attributable to Hong Kong, Macao and Taiwan routes, a decrease of 5.1% from 2015. The passenger turnover on international routes reached 216.038 billion person-km, an increase of 25.8% from 2015 (refer to Figure 2).

The whole industry completed a cargo and mail turnover of 22.245 billion ton-km, increasing by 6.9% from 2015, of which 7.211 billion ton-km was attributable to domestic routes, increasing by 7.7% from 2015, including 275 million ton-km on Hong Kong, Macao and Taiwan routes. The cargo and mail turnover on international routes reached 15.034 billion ton-km, increasing by 6.5% over 2015 (refer to Figure 3).

2. Passenger Traffic

In 2016, the whole industry transported 487.96 million passengers, up by 11.9% from a year earlier. 436.34 million passengers were transported on domestic routes, up by 10.7% from

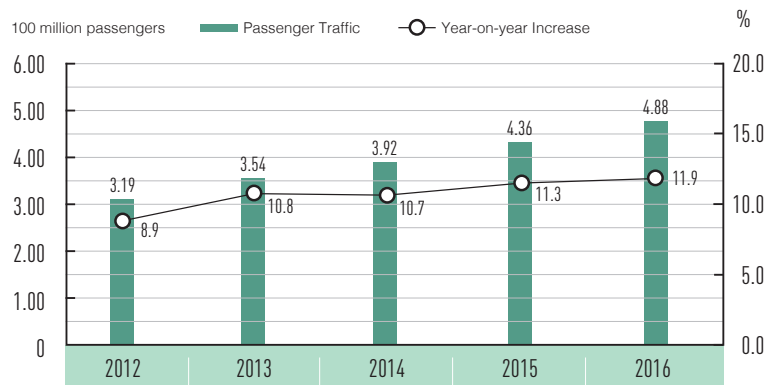


Figure 4 Passenger Traffic of Civil Aviation 2012-2016

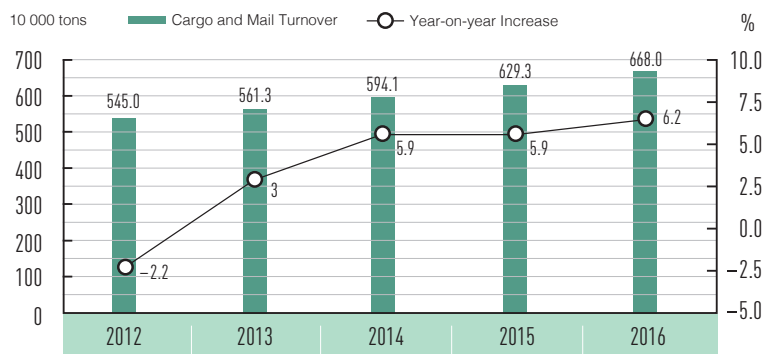


Figure 5 Cargo and Mail Transported by Civil Aviation 2012-2016

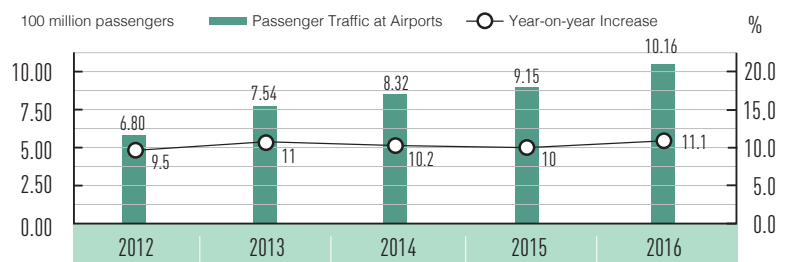


Figure 6 Passenger Traffic at Civil Transport Airports 2012-2016

2015, including 9.85 million on Hong Kong, Macao and Taiwan routes, down by 3.4% from 2015; the international routes saw a passenger traffic of 51.62 million, up by 22.7% from 2015 (refer to Figure 4).

3. Cargo and Mail Turnover

In 2016, the whole industry transported 6.680 million tons of cargo and mail, up by 6.2% from a year earlier. 4.748 million tons of cargo and mail was transported on domestic routes, up by 7.3% from 2015, including 220 thousand tons on Hong Kong, Macao and Taiwan routes down by 0.6% from 2015; the international routes saw a mail and cargo traffic of 1.932 million tons, up by 3.4% from 2015 (refer to Figure 5).

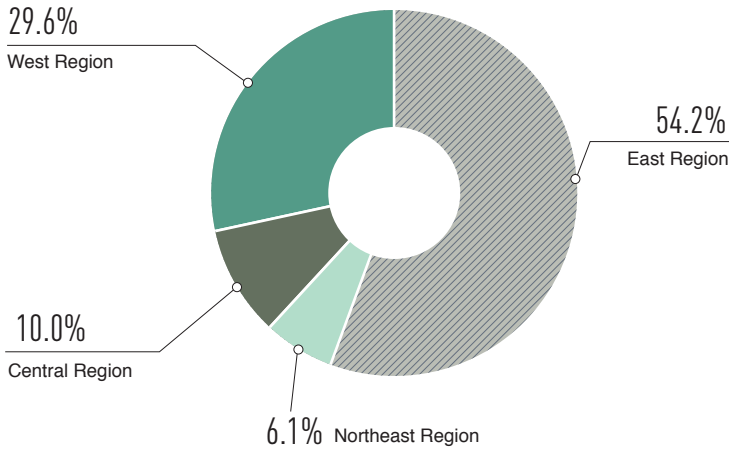


Figure 7 Distribution of Passenger Traffic at Airports by Region in 2016

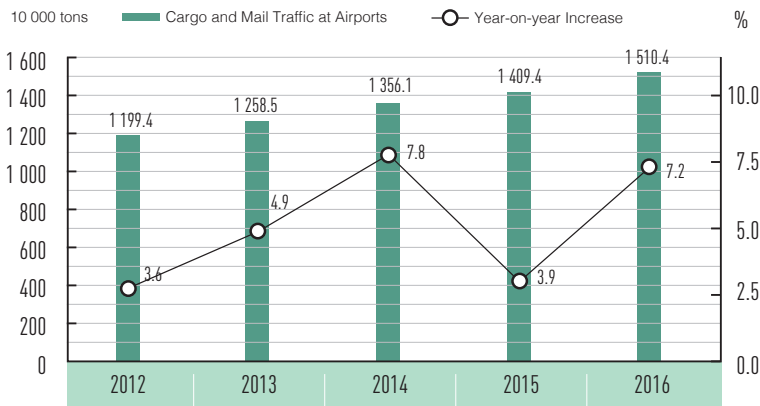


Figure 8 Cargo and Mail Traffic at Civil Transport Airports 2012-2016

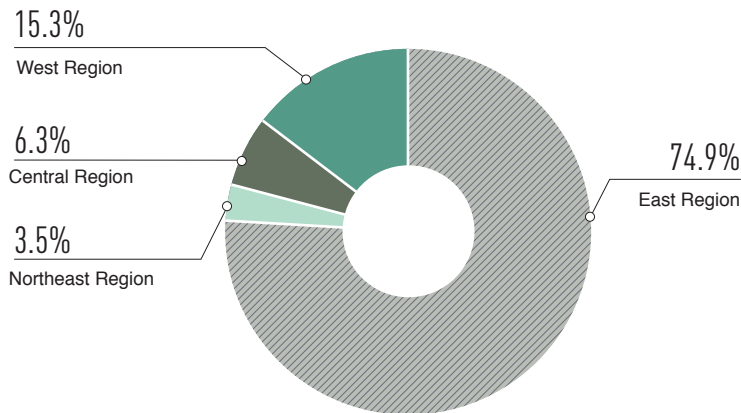


Figure 9 Distribution of Cargo and Mail Traffic at Airports by Region in 2016

4. Traffic at Airports

In 2016, the civil transport airports nationwide realized a passenger traffic of 1.016 billion, up by 11.1% from 2015 (refer to Figure 6).

Specifically, 551 million passengers were transported by airports in East China; 62 million by airports in Northeast China; 102 million by airports in Central China; and 301 million by airports in West China (refer to Figure 7).

In 2016, the civil transport airports nationwide realized a cargo and mail traffic of 15.1040 million tons, up by 7.2% from 2015 (refer to Figure 8).

Specifically, 11.3137 million tons of cargo and mail was transported by airports in East China; 531.0 thousand tons by airports in Northeast China; 954.5 thousand tons by airports in Central China; and 2.3049 million tons by airports in West China (refer to Figure 9).

In 2016, the civil transport airports nationwide realized 9.238 million flight movements, up by 7.9% from 2015 (refer to Figure 10).

In 2016, there were 77 transport airports with a passenger traffic exceeding 1 million, among which the airports of Beijing, Shanghai and Guangzhou contributed 26.2% to the total (refer to Table 1).

In 2016, there were 50 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 49.6% of the total (refer to Table 2).

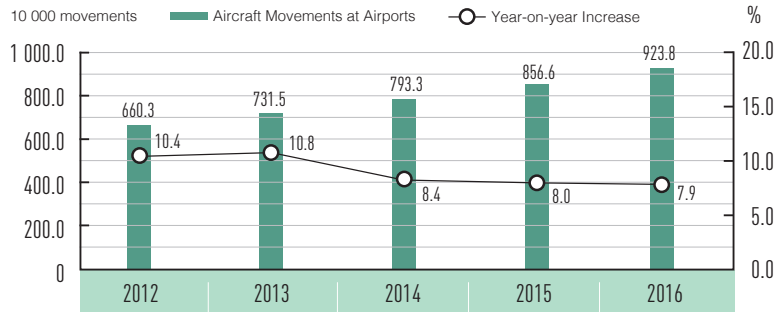


Figure 10 Aircraft Movements at Civil Transport Airports 2012-2016

Table 1 Number of Airports with Passenger Traffic Exceeding 1 Million in 2016

Annual Passenger Traffic	Number of Airports	Increase from 2015	Percentage of Total (%)
More Than 10 Million Passengers	28	2	79.1
1~10 Million Passengers	49	5	16.7

Table 2 Number of Airports with Cargo and Mail Traffic Exceeding 10 000 Tons in 2016

Annual Cargo and Mail Traffic	Number of Airports	Increase from 2015	Percentage of Total (%)
10 000 Tons or Above	50	—1	98.3

Table 3 Number of Certified Transport Airports by Region in 2016

Region	Number of Certified Transport Airports	Percentage of the Total (%)
Nationwide	218	100.0
Including: Northeast Region	23	10.6
East Region	53	24.3
West Region	110	50.5
Central Region	32	14.7

Table 4 Number of Scheduled Flight Routes and Mileage in China in 2016

Indicator	Value
Number of Air Routes	3 794
Domestic Air Routes	3 055
Including: Hong Kong, Macao and Taiwan Air Routes	109
International Air Routes	739
Air Route Mileage Including Overlapped	919.3
Distance (10 000 km)	
Domestic Air Routes	580.1
Including: Hong Kong, Macao and Taiwan Air Routes	17.3
International Air Routes	339.1
Air Route Mileage Excluding Overlapped	634.8
Distance (10 000 km)	
Domestic Air Routes	352.0
Including: Hong Kong, Macao and Taiwan Air Routes	16.7
International Air Routes	282.8

In 2016, Beijing Capital International Airport posted a traffic of 94 million passengers, ranking the second in the world for seven straight years; Shanghai Pudong Airport realized a cargo and mail traffic of 3.440 million tons, ranking the third in the world for nine years in a row.

5. Transport Aircraft Fleet

By the end of 2016, the civil aviation industry had 2 950 registered transport aircraft, 300 more than that by the end of 2015.

6. Number of Airports

By the end of 2016, there were 218 certified transport airports in China, up by 8 from 2015. Newly built airports in 2016 were Linfen Airport in Shanxi, Shiyan Airport in Hubei, Sanming Airport in Fujian, Qionghai Airport in Hainan, Guoluo Airport in Qinghai, Ulanqab Airport in Inner Mongolia, Zhalantun Airport in Inner Mongolia, Sansha Airport in Hainan, and Cangyuan Airport in Yunnan. In addition, Hebei Qinhuangdao Airport and Xinjiang Qiemo Airport were relocated. Shaanxi Ankang Airport ceased operation, and Jiangxi Jiujiang Airport was de-registered in May 2016 (refer to Table 3).

7. Route Network

By the end of 2016, there were 3 794 scheduled flight routes in China with a mileage of 9.193 million km including the overlapped distance, or 6.348 million km excluding the overlapped distance (refer to Table 4).

By the end of 2016, there were 214 Chinese cities with domestic scheduled flights (excluding Hong Kong, Macao and Taiwan); Chinese airlines operated scheduled international flights to 145 cities in 56 countries; domestic airlines operated scheduled flights to Hong Kong from 38 mainland cities and to Macao from 10 mainland cities and to Taiwan from 48 mainland cities.

8. Foreign Relations

By the end of 2016, China had already signed 120 bilateral air service agreements with other countries or regions, up by 2 (Samoa and Papua New Guinea) from 2015, including 44 in Asia (including ASEAN), 24 in Africa, 36 in Europe, 9 in Americas and 7 in Oceania.

9. Operations of Transport Airlines (Groups)

By the end of 2016, there were a total of 59 transport airlines in China, with a net addition of 4 to the number of 2015. By the type of ownership, there were 44 state-holding airlines and 15 private and privately-holding airlines. Among all the transport airlines, there were 8 all-cargo airlines, 11 joint venture airlines and 7 publicly listed airlines.

China National Aviation Holding Group recorded 2.374 million flight hours and a total transport turnover of 26.17 billion ton-km, up by 10.1% from a year earlier; it carried 115 million passengers, up by 9.3% from 2015 and 1.916 million tons of cargo and mail, up by 7.0% from 2015.

China Eastern Air Holding Group recorded 1.973 million flight hours and a total transport turnover of 19.73 billion ton-km, up by 10.6% from a year earlier; it carried 102 million passengers, up by 8.6% from

2015 and 1.395 million tons of cargo and mail, down by 0.3% from 2015.

China Southern Air Holding Group recorded 2.375 million flight hours and a total transport turnover of 24.39 billion ton-km, up by 8.9% from a year earlier; it carried 115 million passengers, up by 4.8% from 2015 and 1.613 million tons of cargo and mail, up by 6.7% from 2015.

Hainan Airlines Group recorded 1.395 million flight hours and a total transport turnover of 14.21 billion ton-km, up by 22.9% from a year earlier; it carried 83 million passengers, up by 22.4% from 2015 and 784 thousand tons of cargo and mail, up by 0.8% from 2015.

All other airlines together recorded 1.377 million flight hours and a total transport turnover of 11.75 billion ton-km, up by 22.4% from a year earlier; they carried 73 million passengers, up by 22.7% from 2015 and 973 thousand tons of cargo and mail, up by 19.6% from 2015 (refer to Figure 11).

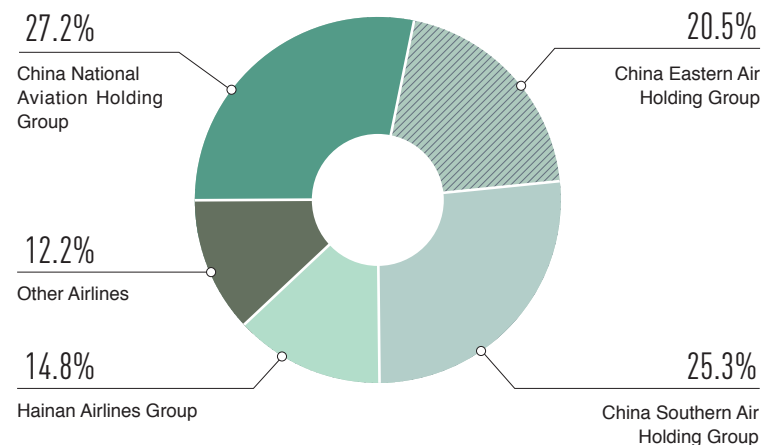


Figure 11 Proportions of Total Transport Turnover by Airlines (Groups) in 2016

II. General Aviation

1. Flight Hours

In 2016, the whole general aviation industry posted 764.7 thousand flight hours, down by 1.9% from a year earlier, including 82.9 thousand hours of industrial aviation operations, down by 3.0% from 2015; 51 thousand hours of agricultural and forestry aviation operations, up by 21.3%; and 630.8 thousand hours of other general aviation operations, down by 3.2%.

2. General Aviation Enterprises

By the end of 2016, there were 320 certified general aviation enterprises, including 79 in North China, 65 in Central China, 66 in East China, 31 in Northeast China, 43 in Southwest China, 29 in Northwest China and 7 in Xinjiang.

3. Aircraft Fleet Size

By the end of 2016, there were a total of 2 096 registered general aviation aircraft, including 621 aircraft for training.

III. Transport Efficiency and Financial Performance

1. Transport Efficiency

In 2016, the average daily use rate of registered transport aircraft industry-wide stood at 9.41 hours, down by 0.08 hours from 2015. Specifically, the average daily use rate of medium and large sized aircraft was 9.57 hours, down by 0.09 hours from a year earlier, whereas that of small-sized aircraft was 6.64 hours, up by 0.06 hours.

In 2016, the passenger load factor for scheduled flights averaged 82.6%, up by 0.5 percentage points from 2015.

In 2016, the weight load factor for scheduled flights averaged 72.7%, up by 0.5 percentage points from 2015 (Refer to Table 5).

2. Financial Performance

According to preliminary statistics, in 2016, the whole civil aviation industry made 639.3 billion yuan in business revenue, up by 6.3% from 2015, and 56.84 billion yuan in profit, up by 8.17 billion yuan from a year earlier. Specifically, airlines made 469.47 billion yuan in business revenue, up by 8.2% from a year earlier, and 36.48 billion yuan in profit, up by 3.79 billion yuan from 2015; airports made 83.25 billion yuan in business revenue, up by 7.2% from 2015, and 11.77 billion yuan in profit, up by 1.71 billion yuan

Table 5 Passenger Load Factor and Weight Load Factor for Scheduled Flights in 2016

Indicator	Value (%)	Increase from 2015 (Percentage Point)
Passenger Load Factor of Scheduled Flights	82.6	0.5
Domestic Air Routes	83.8	0.8
Including: Hong Kong, Macao and Taiwan Air Routes	77.8	1.0
International Air Routes	79.4	0.1
Weight Load Factor of Scheduled Flights	72.7	0.5
Domestic Air Routes	75.5	1.4
Including: Hong Kong, Macao and Taiwan Air Routes	65.6	1.8
International Air Routes	68.1	-0.7

from 2015; support businesses made 86.58 billion yuan in business revenue, down by 3.5%, and 8.59 billion yuan in profit, up by 2.67 billion yuan from a year earlier.

According to preliminary statistics, in 2016, across the whole industry, the revenue per ton-km was 4.51 yuan, down by 0.28 yuan from the previous year. Passenger revenue per ton-km was 5.5 yuan, down by 0.42 yuan from 2015; cargo and mail revenue per ton-km was 1.3 yuan, down by 0.09 yuan from 2015.

According to preliminary statistics, in 2016, the taxes payable by the whole civil aviation industry stood at 29.65 billion yuan.

IV. Aviation Safety and Service Quality

1. Aviation Safety

In 2016, 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 0.016 compared with the world average level of 0.217. There were 10 general aviation accidents, resulting in 19 deaths.

From August 25, 2010 to the end of 2016, transport aviation had been operating safely for 76 months, with an accumulated 46.23 million hours of safe flight.

2016 saw 519 incidents, including 18 severe transport aviation incidents. The rate of severe incidents and the rate of incidents caused by human factors per 10 000 flight hours were 0.019 and 0.039 respectively. All safety indicators fell within the value ranges set for the year.



In 2016, 37 transport airlines of the industry were free of human factor incidents.

2. Aviation Security

In 2016, the civil aviation security inspection departments screened 515 million passengers, 292 million items of checked baggage, 389 million items of air cargo (excluding mails and express deliveries), and 156 million mails and express deliveries, and handled 14 740 cases of infractions and unruly behaviors and 75 cases of unlawful interferences involving falsified terrorist threat information.

3. Flight Regularity Rate

In 2016, passenger airlines in China operated 3.679 million flights in total, among which 2.824 million flights were regular, with an average flight regularity rate of 76.76%.

In 2016, major airlines operated 2.846 million flights in total, among which 2.178 million flights were regular, with an average flight regularity rate of 76.54% (refer to Table 6).

In 2016, the average delay time of passenger flights in China was 16 minutes, down by 5 minutes on a year-on-year basis.

4. Passenger Complaints

In 2016, CAAC, its regional administrations, CAAC Consumer Affairs Center and China Air Transport Association accepted 19 952 aviation consumer complaints in total, up by 10 849, representing an increase of 84%.

Table 6 Causes of Flight Irregularity in 2016

Item	% of the Total	Growth from 2015(%)
Causes of Flight Irregularity for All Airlines	100.00	0.00
Including: Airlines	9.54	-9.56
ATC	8.24	-22.44
Weather	56.52	26.99
Others	25.70	5.01
Causes of Flight Irregularity for Major Airlines	100.00	0.00
Including: Airlines	9.63	-8.42
ATC	8.30	-21.79
Weather	56.46	26.30
Others	25.61	3.91

V. Investment in Fixed Assets

In 2016, China's civil aviation made investment in fixed assets to the tune of 170 billion yuan, of which 78.24 billion yuan went to civil aviation infrastructure development and technological upgrading, up by 1.7% from 2015 (refer to Figure 12).

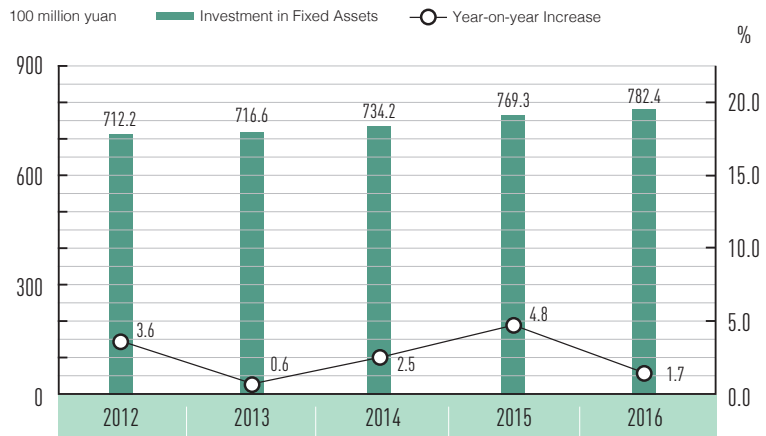


Figure 12 Investment in Civil Aviation Infrastructure Development and Technological Upgrading 2012-2016

Investment in infrastructure development and technological upgrading can be classified as follows: airport system made investment in fixed assets worth 66.00 billion yuan, up by 0.6%; the ATM system made investment in fixed assets to the tune of 2.42 billion yuan, up by 652 million yuan; and other civil aviation divisions made investment in fixed assets worth 9.824 billion yuan in total, up by 274 million yuan including: 1.183 billion yuan in civil aviation information system development, 578 million yuan in civil aviation scientific studies and

education system, 302 million yuan in civil aviation security system, 233 million yuan in civil aviation mechanic maintenance system, 1.477 billion yuan in transport service system, 1.113 billion yuan in public facility investment and 4.929 billion yuan in other systems.

VI. Energy Conservation and Emissions Reduction

In 2016, 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 8.4% from the end of the 12th Five-Year Plan period.

In 2016, CAAC actively promoted efforts across the whole industry to control and reduce energy consumption and emissions, and supported 67 projects meeting the requirements of Guide for Civil Aviation Energy Conservation and Emissions Reduction Fund Projects.

By the end of 2016, 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. 326 thousand flights used temporary routes, reducing a flight distance of 9.79 million km, saving fuel consumption of 53 thousand tons and cutting carbon dioxide emissions by 166 thousand tons.

VII. Education and Science and Technology

In 2016, the enrollment by universities and colleges directly under CAAC

totaled 20 633, among which, 970 were postgraduate students, 17 948 undergraduates and junior college students, and 1 715 adult students.

In 2016, the number of registered students at universities and colleges directly under CAAC stood at 71 078, among which 3 435 were postgraduate students, 60 598 undergraduates and junior college students, 7 045 were adult students.

In 2016, 16 843 students graduated from universities and colleges directly under CAAC in total, among which, there were 919 postgraduates, 14 006 undergraduates and junior college students, and 1 918 adult students.

In 2016, CAAC inspected and accepted a total of 28 scientific and technological achievements, and elected 26 for the awards for science and technology of CATA.

VIII. Number of Pilots

By the end of 2016, there were 50 504 licensed pilots in the industry, up by 4 981 from 2015 (refer to Table 7).

Table 7 Statistics of Civil Aviation Pilots of China in 2016

Type of License		Number	Year-on-year Increase
Aircraft	Private Pilot License	2 460	10
	Commercial Pilot License	25 244	2 374
	Airline Transport Pilot License	19 693	2 091
	Multi-crew Pilot License	104	69
Helicopter Pilot License		2 400	347
Other Aircraft Pilot License		708	99

IX. The Work of Trade Union

Through the filing of National Civil Aviation Trade Union, 2 entities were awarded the National May 1st Prize for Labors, 5 outstanding individuals were awarded the National May 1st Medal for Labors, and 10 outstanding task forces were awarded the Honorary Title of Pioneering Worker.

In 2016, 411 entities, 26 632 task forces and 547 899 workers participated in the industrial competition of Safety and Health Cup.

In 2016, 135 outstanding entities and 44 outstanding individuals were commended in the activities of Safety and Health Cup 2014-2015. ■