2017
China Southern Airlines Co., Ltd
Corporate Social Responsibility Report

Flying with the sun, towards a better life
Flying with the sun, towards a better life
Flying with the sun, towards a better life

The world is moving rapidly, and flying has become the number one form of transportation. At China Southern, we carry more than 300,000 passengers to over 200 destinations in 40 countries and regions across the globe onboard our aircraft every day. Shouldering this immense responsibility, every departure marks our 100% commitment to our passengers.

Newly delivered aircraft: 79
Number of suppliers: 8,079

“Flying with the Sun” is the mantra of every flight. We strive to provide our customers with services that are as warm as the sun; we enjoy giving our warmth and strong care back to our society; we have created a vibrant network that connects families, friends and business partners alike and we place our Company under the sun by creating a transparent and responsible China Southern, adding dynamic colors to your life.

The world is changing and China Southern is changing as well but the 100,000 staff and management which make up our devoted China Southern family will stay true to ourselves in flying with the sun and moving together with you towards a better future.

20.662 million accumulated safe flight hours
218 consecutive months of flight safety
283 consecutive months of aviation security
63,000 tons of greenhouse gas emission reduction
Total employee: 96,234

Employees

Planning
Retired aircraft: 27
Fleet size: 754

Procurement
Marketing
New functions on “China Southern e-Travel” platform: 678
Million visits to “China Southern e-Travel” platform: 240
Million passenger throughputs: 126

Transportation

Service
Flight on-time performance: 73.1%
3,850 registered onboard medical volunteers
Effective complaint rate: 0.075 per 10,000

Community

15.3 million RMB worth of poverty-alleviation materials and investments
6.1 million RMB direct investment to targeted poverty-alleviation projects from the Group
2.8 million RMB donation to the “10-Fen” Care Foundation
63,000 hours of volunteer work
## ABOUT THIS REPORT

This is the 11th Corporate Social Responsibility Report of China Southern Airlines Company Limited (hereafter referred to as “we”, “the Company”, “China Southern” or “China Southern Airlines”).

We hope, through this report, to closely engage and communicate with you and we hope this report will boldly illustrate the harmonious, mutual, and sustainable development of China Southern and the society.

At this new starting point, we pledge to continue to make greater commitments to our corporate social responsibilities and work closely with all stakeholders to embark upon a journey towards a better life.

### Scope of report

This report is for the period from January 1, 2017, to December 31, 2017. Certain parts of this report may be traced back to previous years where applicable. The content of this report covers the Company and its majority-controlled subsidiaries.

### References

This Report has been prepared in accordance with the following:
- Guidelines Concerning State-owned Enterprises Fulfiling Social Responsibilities published by the State-owned Assets Supervision and Administration Commission (SASAC);
- Environmental, Social and Governance Reporting Guide published by the Hong Kong Stock Exchange;
- Guidelines on Sustainable Development Information Disclosure for Companies Listed on the Shanghai Stock Exchange published by the Shanghai Stock Exchange;
- G4 Sustainability Reporting Guidelines (GRI 4.0) and The National Standard GB/T36001-2015: Guideline on the Compilation of Corporate Social Responsibility Report

### Source of data

Financial data used in this report were sourced from Annual Reports and additional data were sourced from official corporate documents and statistics. The Board of Directors of the Company and all directors hereby guarantee that this report contains no false records, misleading statements, or major omissions.

The directors accept liabilities for the truthfulness, accuracy, and completeness of this report.

### Availability of this report

This Report is published in Chinese and English. In case of inconsistencies or ambiguities between the English version and the Chinese version, the Chinese version shall prevail. This report is available in printed and digital versions. The printed version may be found in China Southern Sky Pearl VIP Lounges, China Southern Ticketing Branches or China Southern Representative Offices. The digital version is available for download from our official website: www.csair.com.

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A New Chapter in a New Era

As our country forges ahead on the way to a national rejuvenation, China Southern Airlines as a potent dynamism in the building of a strong aviation nation and stands at a new historic threshold to fulfill the Chinese Dream with our spirit of “Diligence, Pragmatism, Inclusiveness, and Innovation”.

The Communist Party of China successfully held the 19th National Congress in 2017. This Congress formulated the action plan and an ambitious blueprint of the development of the Party and our nation. Socialism with Chinese characteristics has entered a new era. As our country forges ahead on the way to a national rejuvenation, China Southern Airlines as a potent dynamism in the building of a strong aviation nation and stands at a new historic threshold to fulfill the Chinese Dream with our spirit of “Diligence, Pragmatism, Inclusiveness, and Innovation”.

Looking back at Year 2017, we have achieved satisfactory results. Our fleet size has exceeded 750 aircraft and our total revenue reached 127.48 billion RMB, a year-on-year growth of 11.05%. Compared to Year 2016, our total profit grew by 1.75 billion RMB, achieving the A-rating assessment requirement of the State-owned Assets Supervision and Administration Commission. With a well-known “Sunshine Southeast” image; the construction of Beijing’s new airport; our Guangzhou-Beijing dual-hub; becoming the largest Chinese carrier along the “Belt and Road” full and thorough implementation of the spirit of the 19th National Congress of the CPC and our vibrant plans of becoming a world-class air transport enterprise collectively mark our solid steps into building a carrier brand that will be honored by time.

Regarding our safe-flight operations, safety has always been our paramount concern. We are protecting the safety “bottom line” on all operational fronts. We firmly apply the requirements of “zero-tolerance to safety hazards” principle raised by the Party General Secretary Xi Jinping and take the “100-day safe operation competition” and “Top 10 Safety models” activities as leverage to strictly and earnestly ensure flight safety. We have revised all safety management manuals to be in line with IOSA safety audit requirements, formulated The Decision on Further Strengthening Accountabilities for Safety in Operations and issued a checklist of zero-tolerance items. During Year 2017, our safety performance has pushed forward to new levels. We have achieved an accumulated 20,662.8 million hours of safe flights.

On environmental protection, we closely follow climate change and guard the environment that we all live in. In Year 2017, our investment to environmental protection also climbed to new frontiers. We have opened a new Office for Resources and Environmental Protection with specialists in relevant fields. We consistently refine our management procedures for energy savings and emission reductions by formulating emission reduction handbooks and energy and resource consumption handbooks that both plan and guide our work. We continually explore possibilities in increasing energy consumption efficiencies and in Year 2017, reduced more than 65,000 tons of greenhouse gas emissions. Last, but not least, we signed the Buckingham Palace Declaration to participate in the international community’s effort to fighting against the transportation and trade of wildlife animals and their parts.

Regarding our services, we have re-doubled our efforts to improve our service standards both in the air and on the ground. Our hub at Beijing Capital International Airport Guangzhou has become the first of its kind in China that fully supports through check-in and we are the first airline in China to introduce facial recognition boarding technology as well as our exclusive “Baggage Up” initiative and accessible websites. Additionally, we have optimized our automatic refund and re-routes processes and expanded the coverage of special meal reservations. During Year 2017, our on-time performance was ranked first among the three largest carriers in China; became one of the “World’s Top 50 Most Valuable Airline Brands” and earned an AAR rating, both were the best among all Chinese carriers. We were also awarded the “Customer Satisfaction Benchmark of 2017” by the China Association for Quality. Our service quality is well noted both locally and globally.

Regarding our staff and management, we have constantly improved the overall quality and professionalism of all team members. We made great strides to attract market leading talents, improve our internal training and refine incentive systems to form a diverse, competent, and professional team. We have carved out the “five-smaller” innovation initiative to encourage all staff and management to participate in day-to-day innovations. Throughout the year, more than 90% of all staff and management took part in this initiative and produced more than 1500 innovative new creative concepts. We will continue with our unique “promoting myself, achieving my dreams” employee quality enhancement program; care more for the working and living conditions of all staff and management and organize rich cultural and athletic events to meet our colleagues’ desires and aspirations of a better life.

On the front of reforms, we continue to deepen reform and development and accelerate the implementation of strategies. In Year 2017, the management of the Group and the Company were integrated, and new services were launched (i.e. the new air bridge linking Guangzhou and Mexico City) that marked a network coverage across all five continents. We extended our cooperation with Xiamen Airlines and Shenzhen Airlines to many resource sharing areas; our improved “China Southern e-Travel” platform has served 340 million on-line visits while many of its functions are industry trailblazers. We have reached a new strategic partnership with American Airlines, added new partners such as British Airways, Ethiopian Airlines and LATAM and are taking solid steps towards standardization, integration, intelligence and internationalization.

In the society, we actively contribute and assist in its harmonious development. Besides striving to move our Company to being bigger, better, and stronger, we also actively fulfill our corporate social responsibilities by taking up critical tasks for the country such as disaster relief; oversees Chinese repatriation and the transportation of peacekeeping forces and our dynamic “10-Fen” Care Foundation. In Year 2017, we completed the transportation and service tasks during the “Sept.11 Road” Summit; BRICS Summit; Guangzhou Fortune Global Forum; the transportation of the peacekeeping force and even a volcanic eruption at Bali. We have continuously implemented targeted poverty alleviation and other charitable activities. The Company provided poverty alleviation fund and materials worth 5.53 million RMB, the Group invested 6.1 million RMB to targeted poverty alleviation, and the “10-Fen” Care Foundation donated 2.8 million RMB, showcasing a responsible image as a state-owned enterprise.

At the same time, we continuously have enhanced communication and mutual understanding with our stakeholders. Our “Open Day” events have built bridges between the public, investors, and the Company. In 2017, we won the “Listed Company with Best Investment Potential” in the China Securities Golden Bauhinia Award. China Southern Airlines’ official accounts on Weibo and WeChat were awarded the “Most Influential New Media Account of State-owned Enterprises”.

2018 is the beginning of implementing the essence of the 19th National Congress of the CPC; it is the 40th Anniversary of China’s Reform and Opening-up and it is a critical juncture in securing a decisive victory in building a moderately prosperous society in all respects and implementing the 13th “Five-year” Plan. Year 2016 is also the launching point for China Southern’s in our quest to become a world-class carrier. The development of China Southern could not have been achieved without the care from everyone, and we are always most grateful.

This bold new era gives us new visions and new quests brings us new responsibilities. We look forward to being with everyone at this new beginning in history to open a new chapter of development.

Wang Changhui
Chairman
China Southern Airlines Company Limited
ABOUT US

China Southern was founded in Year 1995 and was listed in both HKEX and New York Stock Exchange in Year 1997 followed by a public listing on the Shanghai Stock Exchange in Year 2003. China Southern is headquartered at No. 278, Qian Road, Baiyun District, Guangzhou, Guangdong Province of P. R. China. Our primary business scope covers the provision of scheduled (and non-scheduled) domestic, regional, and international air transportation services for passengers, freight, mail, and baggage. China Southern is the largest airline company in the People’s Republic of China regarding fleet size, the number of routes and annual passenger throughput.

At a Glance

Organizational Structure

In Year 2017, we adjusted our organizational structure by consolidating the management members and administrative divisions of the China Southern Airlines Holding Company and the China Southern Airlines Co. Ltd. The total number of functional divisions has been reduced from 37 to 20. This reorganization serves as a firm foundation for the integrated operation and management of the Company.

China Southern operates 16 branches of Xinjiang, Northern, among others; six controlled subsidiaries of Xiamen Airlines, Guizhou Airlines, Hainan Airlines, Shantou Airlines, Zhuhai Airlines, and Chongqing Airlines; as well as China Southern General Aviation Co. Ltd in Zuhai.

In addition, 22 domestic sales offices can be found in major Chinese cities such as Hangzhou and Qingdao; and 16 international sales offices are located in major metropolitan cities such as Sydney and New York.

The total number of functional divisions

<table>
<thead>
<tr>
<th>Branch companies</th>
<th>Majority-controlled subsidiaries</th>
<th>Domestic</th>
<th>Overseas</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>16</td>
<td>6</td>
<td>22</td>
</tr>
</tbody>
</table>
● Fleet

<table>
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<tr>
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<tr>
<td>A320 Series</td>
<td>45</td>
</tr>
<tr>
<td>B737 Series</td>
<td>20</td>
</tr>
<tr>
<td>B777 Series</td>
<td>24</td>
</tr>
<tr>
<td>E190</td>
<td>26</td>
</tr>
<tr>
<td>A319 Series</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>754</td>
</tr>
</tbody>
</table>

● Route Network

Based on the four key hubs of Guangzhou, Beijing, Urumqi, and Chongqing, we continue to strengthen our airline route coverage as an international network carrier. Our hub at Bayin International Airport Guangzhou has become the largest gateway from mainland China to the Oceania, Southeast Asia, and South Asia regions. We operate an extensive domestic network with additional routes spanning the Asian region and is closely connected with Europe, North America, the Oceania, and Africa.

Each day, more than 2,000 China Southern flights bring passengers to more than 200 destinations in over 40 countries and regions with 300,000 daily seat capacity.

During the year, we continued to make steady progress, launching 35 new international and regional services including Guangzhou - Mexico City via Vancouver, Guangzhou - Cairo, Shanghai - Melbourne, Shanghai - Moscow, Guangzhou - Male (via Colombo), Guangzhou - Vienna, Guangzhou - Langkawi, and Beijing - Ho Chi Minh City.

As well as 230 new domestic services such as Shenzhen to Mohe.

By the close of Year 2017, China Southern Airlines operated a total number of 1,359 passengers and freight routes consisting of 905 domestic and 264 international and regional routes.

2,000 flights per day
905 domestic routes
264 international and regional routes

Network covers more than
200 destinations in over
40 countries and regions

300,000 daily seat capacity

● Main Awards

- 9th place in Brand Finance’s “Most Valuable Airline Brands” in 2017, with AAA rating, the best among all Chinese airlines
- CAIC General Aviation Flight Safety One-Star Award
- 23rd place in the Skytrax Top 100 Airlines ranking, improving from 32nd in Year 2016, the largest progression in China
- “Most Socially Responsible Enterprise” Award at the 9th China Corporate Social Responsibility Annual Conference
- “Most Outstanding Airlines in Asia” by Now Travel Asia magazine
- “Best Development in Electronic Air Cargo Transportation” by IATA
- “Happy Travel, Warm Way Home” volunteer project was nominated at the China Youth Volunteer Service Project Competition
- “Special Contribution” Award and the “Excellence in Organisation” Award at the first Civil Aviation Youth Volunteer Service Project Competition
- 2017 “Best Employers of China Top 30” and "Female Employee’s Most Favorite Employer" Awards
- Received A-rating in Information Disclosure of Shanghai Stock Exchange for four consecutive years
- “Listed Company with Best Investment Potential” in the 2017 China Securities Golden Bauhinia Award

2017 “Most Influential New Media Operator of State-owned Enterprises” Award

2017 "Best Employees of China Top 30" and "Female Employees' Most Favorite Employers" Awards

Received A-rating in Information Disclosure of Shanghai Stock Exchange for four consecutive years

“Listed Company with Best Investment Potential” in the 2017 China Securities Golden Bauhinia Award

● Key Performances

- Total passenger throughput: 126 million, an increase of 10.2%
- Total turnover: 27.321 billion, an increase of 12.0%
- Operating revenue: 127.489 billion, an increase of 11.05%
Strategic and Governance

Having a clear development strategy and standardized management system is an important foundation for an enterprise to achieve sustainable development. China Southern Airlines is actively planning its future development strategies and we have established a solid governance structure and modern management system to promote the steady development of the Company.

Corporate Strategy

Development is an ever-changing process and appropriate strategies should change with the ever-changing business environment. In Year 2017, China Southern conducted a comprehensive analysis of the international and domestic business community, as well as a two-step strategy and clear requirements of building a powerful nation of transportation and building world-class enterprises proposed in the 19th National Congress of the Communist Party of China. Having examined our development advantages and existing challenges, we have firmly proposed new missions, new strategies, new deployment, and new requirements.

These are to persist in the general tone of "steady progression" to boldly promote the 10 major strategic projects of China Southern to continue our pursuit in becoming a world-class air transport enterprise to plan for a great future to showcase new climate and new actions; and to launch a new chapter in China Southern’s development throughout the new year.

Corporate Governance

Since its foundation, China Southern has strictly abided by relevant national and local laws and regulations and has continued its effort to improve its governance structures. The Company has regulated and specified duties and obligations for different parties in addition to the setting up of a sound internal control system.

Comprehensive reform to facilitate development

Throughout the year, China Southern reform the Company from four areas of governance structure, system, mechanism, and relationships.

In terms of governance structure

- The Company has completed the term change of the Board of Directors and the Supervisory Committee. The human resources structures of the Board of Directors and the Supervisory Committee have been simplified and a Standing Committee of the Board of Directors and an Aviation Safety Committee has been established and the percentage of independent directors exceeded 50%.

In terms of governance system

- China Southern has comprehensively reviewed and revised the Articles of Incorporation, Rules of Board of Directors, Rules of Supervisory Committee, Rules of Shareholder Meetings, and the working details of each committee. Furthermore, contents relating to Party building have also been incorporated into the Articles of Incorporation.

In terms of governance mechanism

- China Southern has systematically reviewed the authority boundaries of the main governance bodies including the Board of Directors, the Standing Committee, and the Working Meeting of the General Manager to establish a clearly bounded, seamlessly connected and rational hierarchical authorization mechanism. China Southern has clarified its corporate decision-making process and mechanisms, effectively resolving the historical issue of having vague boundaries. The Company has clarified its relationships and procedures in the decision-making processes between the Party Committee and the Working Meeting of the General Manager, Standing Committee of the Board of Directors, and the Board of Directors to ensure that the Party Committee is both the governing and political core of the Company.

In terms of governance relationship

- China Southern has formulated a management system of directors and supervisors, established a standardized, clear, and smooth operational mechanism and control system.
In addition, China Southern has entered into a strategic cooperation with American Airlines. The two parties signed a Strategic Cooperation Framework Agreement, Share Purchase Agreement, and other business agreements. American Airlines through its purchase of China Southern shares, is expected to develop broader and higher-level cooperation with China Southern.

### Co-Development Through Integration

China Southern has established strategies for standardization, integration, intelligence, and internationalization. Based on the concept of “standardizing every action, documenting every standard, acting in accordance with every document”, China Southern joined forces with Xiamen Airlines and initiated the revision of eight sets of nine professional manuals. In Year 2017, China Southern actively explored the promotion of integration in maintenance and engineering and ground handling services and consolidated resources to build a “pan-China Southern brand”.

### Pan-China Southern Brands

#### Pan-China Southern Brands

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### Comprehensive and Strict Party Self-Governance

At the 19th National Congress of the Communist Party of China (CPC), Party General Secretary Xi Jinping raised the requirement of “exercising strict governance over the party and improving the party’s ability to govern and lead”. He pointed out the direction, path, spirit, historical mission, and the focus of effort of the Party in this new era. We at China Southern profoundly grasped the new situation of implementing comprehensive strict Party self-governance and clarified the new goal of implementing stronger strict Party self-governance, China Southern Airlines pledges to promote the deepening of comprehensive, strict Party governance and promote China Southern to support the Party to develop in depth with greater determination, greater strength, and greater courage. We will achieve these advances on all fronts of our business operations.

### Full and faithful application of the essence of the 19th National Congress of the CPC

After the 19th National Congress of the CPC, we saw a wave of learning, grasping, understanding, and comprehending the essence and requests of the Congress at China Southern. The learning and applying of the essence of the 19th National Congress of the CPC is, and will be, the first priority political task in the long run to deeply study and thoroughly implement the requirements and measures raised in the 19th National Congress of the CPC.

Base ourselves on the new orientation of the new era, unify our thinking and unify our actions. We take the building of a world-class air transport enterprise as the foothold in implementing the spirit of the 19th National Congress of the CPC. We firmly establish the “Four-Awarenesses”, conscientiously study and implement Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and implement the essence and implications of the 19th National Congress of the CPC and various decisions in all aspects of our operations. This will allow the Company to adapt to a new strategy and new mission, unswervingly fulfilling our duties in strengthening, expanding, and improving state-owned capital, earnestly assuming the political responsibility and political mission of state-owned enterprises.

### Strict Implementation in Building a Clean Operation

To adapt to the new climate and new thoughts, to firmly build a fine Party culture, and to keep its organizations clean, China Southern takes seriously the work of building a Party culture and keeping its organizations clean as the foundation in promoting comprehensive strict Party self-governance. Corruption shall be heavily punished. We have established a coordination mechanism and joint meeting system with the involvement of the Discipline Inspection Team, Audit Division, and the Supervisory Committee to form a new, mass-supervision structure of “multiple position in one”. We shall insist on keeping discipline in the forefront, conduct monthly activities of discipline education and learning, remind all during conversations and talks about clean operations. China Southern Airlines will constantly enhance a sense of integrity and self-initiation of the people and Party officials, strengthen the supervision of the “key minority”, strengthen the supervision and process of selecting and appointing personnel to ensure that we meet the political and clean operation standards. We aim to build an all-around line of defense from the system to the thoughts to protect the clean operation of the Company, and to provide a clean atmosphere and strong disciplinary structure to the building of “Sunshine Southern”.

### Deepening Strict Party Self-Governance

To implement new requirements and new deployment, to promote a comprehensive deepening of strict Party self-governance. China Southern Airlines will comprehensively strengthen the Party’s leading role and Party Building and select Party officials with expertise on the basis of capability, intention, and willingness to carry out duties to promote the professionalism of Party cadres. We pledge to conduct inspections and expand comprehensive and strict Party self-governance in all fronts. Party organizations at each level shall conduct the four forms of over sight discipline compliance and use correct verbal warnings and disciplinary interviews. We also pledge to comprehensively construct a new pattern of appropriate Party self-governance from every angle of every aspect.
Business Ethics

China Southern is consistently treating business ethics and honest business practice as important building blocks in the building of assets and brand. China Southern shall fully comply with laws, rules, and their legal principles; insist on operating with full compliance; implementing comprehensive risk control management to safeguard the healthy development of the Company.

Risk Control

China Southern always handles potential risks in its business operation with great care. In Year 2017, using the Financial Management Manual as its "ruler", China Southern regulated its operational controls, organized financing through multiple channels while continuously optimizing the Company’s debt structure and strengthened financial risk controls.

During Year 2017, no major risk event and monetary loss occurred.

Internal Audit

China Southern continues to improve its audit mechanism, expand its coverage, and carry out economic auditing projects. We implemented compulsory audits to managerial staff when leaving their posts and implemented regular periodic audit system to strengthen the performance supervision of managerial staff. Focusing on key areas of production and operation, issue-prone areas, and high-risk areas, we carried out special audits to strengthen risk prevention. Furthermore, we continue to carry out internal control auditing and inspection to ensure the effectiveness of our internal control systems.

In 2017, the Audit Division made 666 management recommendations, conducted 27 economic responsibility audits of managerial staff at all levels, and conducted 14 special audits.
2017 HIGHLIGHTS
Targeted Poverty Alleviation - New Responsibilities

China Southern Airlines is resolute in implementing the arrangements of the State, continuously taking duties of the country and the society as our two most important missions. We are eager to taking more responsibilities and offering more contributions to winning the battle against poverty. In Year 2017, China Southern was assigned to assist three state-level poverty-stricken regions, specifically Pishan County and Maryu County of Hotan Prefecture of Xinjiang and Wenggang Village in Limenai Township of Huiji County in Zhejiang, Guangdong in their poverty alleviation efforts. Our staff and management teams defined four action targets: (1) driven by industry, (2) led by education, (3) infrastructure first, and (4) efforts to lower the focus of poverty alleviation to all citizens, helping them to leave poverty and progress towards a better life.

Poverty Alleviation in Numbers

<table>
<thead>
<tr>
<th>Category</th>
<th>Overall</th>
<th>Industrial Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment</td>
<td>14.55M</td>
<td>3.48M</td>
</tr>
<tr>
<td>Direct and third-party</td>
<td>750,000</td>
<td>8</td>
</tr>
<tr>
<td>Material value</td>
<td></td>
<td>3.48RMB</td>
</tr>
<tr>
<td>Poverty alleviation</td>
<td></td>
<td>3.48RMB</td>
</tr>
<tr>
<td>projects implemented</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>3.48RMB</td>
</tr>
<tr>
<td>Job Relocation</td>
<td>290,000</td>
<td>1.50RMB</td>
</tr>
<tr>
<td>Investment in vocational</td>
<td>966</td>
<td>1.50RMB</td>
</tr>
<tr>
<td>trainings</td>
<td></td>
<td>1.50RMB</td>
</tr>
<tr>
<td>966</td>
<td></td>
<td>1.50RMB</td>
</tr>
<tr>
<td>registered impoverished</td>
<td>55</td>
<td>1.50RMB</td>
</tr>
<tr>
<td>individuals</td>
<td></td>
<td>1.50RMB</td>
</tr>
<tr>
<td>became employed</td>
<td></td>
<td>1.50RMB</td>
</tr>
<tr>
<td>Education</td>
<td>150,000</td>
<td>19</td>
</tr>
<tr>
<td>RMB Bursaries to students</td>
<td>280,000</td>
<td>8.85RMB</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>19 Other poverty</td>
<td></td>
<td>8.85RMB</td>
</tr>
<tr>
<td>alleviation projects</td>
<td></td>
<td>8.85RMB</td>
</tr>
</tbody>
</table>

There are 538 children in the China Southern Sky Pearl Kindergarten at Maryu County, 618 of them are from minority ethnic background. The Mandarin Chinese teaching quality at this kindergarten has become the best in the area.

China Southern helped Pinxi County to develop “backyard economy” in order to increase villagers income.

669 working team members, village officials, residents, and students attended a flag-raising ceremony.

Wang Jing from Xinjiang branch received a box of walnut after visiting her paired “buddy”.

Free-clinic to residents of Wenggang Village.
Driven by Industry

Alleviating poverty by building a self-sufficient industry is the essential measure in achieving sustainable increases in income in less developed regions of the country. Having conducted thorough inquiries in several impoverished regions, we have helped thousands establish industries that are best suited to their local characteristics so that local residents can combat poverty by generating new revenues themselves.

China Southern Airlines’ poverty alleviation efforts:
- Helped impoverished households of Fuxin Township in Pishan County to build grape racks and sheep sheds to develop household-based mini economies.
- Supported the construction of a dragon fruit farm in Wengang Village of Huji County to resolve employment challenges and develop new income sources.
- Assisted the “Grocery Express” project in Fuchang Village of Quhun County in Huanggang, Hubei to transport green grocers directly to the canteens of China Southern, resolving sales and marketing challenges of local producers.

Infrastructure first

Satisfying the basic living needs of residents is a vital part in improving the living standards of local residents. We have built roads and dug water wells in impoverished areas aiming to provide basic accessibility and drinking water.

China Southern Airlines’ poverty alleviation efforts:
- Funded the construction of a bridge at Pinxian Township of Pishan County to improve local transport facilities. The first bridge has been completed and is now bringing exciting new transportation opportunities to local residents.
- Gradually provided safe, clean drinking water to 715 individuals of 216 households in Huoqihai Township of Pishan County.

Led by education

Education is the core to China Southern Airlines’ poverty alleviation policies. We attach the greatest importance to the education of China’s youth, insisting on the combination of reducing poverty and illiteracy, increasing the investment in education, and helping more unprivileged students improve their educational levels, thereby cutting off the divisive chain of poverty that span generations.

China Southern Airlines’ poverty alleviation efforts:
- Funded the construction of a China Southern Sky Pearl Kindergarten in Moyu County and the China Southern Sky Pearl Primary School at Pishan County; supported underprivileged students to complete their education, improved local school facilities and promoted local bi-lingual Mandarin Chinese and Yoghur education.
- Funded the surface hardening project of a road leading to the Central Primary School of Lunshan Village, Fuchun Yao Ethnic, Autonomous County of Guaziqui, greatly improving the accessibility to school for local youth, as well as villagers living along the road.
- Long-term, one-to-one assistance pairs with local students have been formed at each assigned poverty alleviation region, establishing a long-term support mechanism.

Care and rescue

China Southern Airlines pays additional attention to those whose lives are severely impoverished due to special circumstances, providing a helping hand to those in desperate needs. It is our prayer that our Company can bring warmth and support to them during their most challenging times, and to restore their hope.

China Southern Airlines’ poverty alleviation efforts:
- Invested in the “Poppy” (same boat) project fund to provide special financial aids to families that are suffering from financial difficulties due to critical illnesses in Moyu County, aiming to reduce the cases of “poverty due to illness” and “poverty owned by poverty”.

Refurbished endangered houses for 31 households in Wengang Village, safeguarding the living space of local residents.

An elder in the village burst into tears and told me that their lifetime’s wish was to see the completion of this mountain road. Now that the road is thousands, he had no more requests.

— Lang Tao, First Party Secretary of the Party Committee of Shenzhong Branch and Leader of the Village-based Working Team
2017 HIGHLIGHTS
“Belt and Road” – New Layout

The “Belt and Road Initiative” is the key to promoting the forming of an all-round opening-up framework of China. It is a significant strategic decision to proactively respond to the deep change of global situations and to coordinate the national and global conditions. China Southern, as a large state-owned enterprise and a member of the  “national team” of China’s air transport companies, is actively responding to the “Belt and Road” advocacy, cultivating its dual-hub development strategy, refining our international network, strengthening cooperation with countries along the “Belt and Road”, and building a connected and interconnected Silk Road in the air for bringing in foreign investments and dispersing Chinese investments.

Creating a Dual-Hub Strategic Layout

China Southern’s dual-hub of Guangzhou and Beijing as well as other important hubs of Urumqi and Xiamen are highly compatible with the “Belt and Road” advocacy. These are the key pivotal in the building of a connected and interlinked “Belt and Road” system.

Building the Guangzhou hub

We are continuously enriching the contents of the “Canton Route” family of travel products. We are exerting every effort in the building our hub at Baiyun International Airport Guangzhou, launching “through-check-in” services on all flights connecting in Guangzhou to strengthen our transfer services. We have formed a network that is focused on Europe and the Oceans, supplemented by Southeast Asia, South Asia, and East Asia with comprehensive coverage in North America, the Middle East and Africa. China Southern is actively expanding our connections across all industries. We have signed government-enterprise cooperation agreements with the provincial governments of Xinjiang and Shanghai. The China Southern Airlines Holding Company has reached strategic cooperation agreements with large enterprise groups such as China Foreign Trade Center and Lingnan Group. By forming partnerships with other leading enterprises, we are achieving greater resource sharing, synergies, and innovative powers, promoting cooperation in trade and tourism along the “Belt and Road”.

Building the Beijing hub at a faster pace

We are determined to build a strong presence at Beijing’s new international airport. Having been selected as one of the main base airlines at this new airport, we are accelerating our construction schedule to meet the infrastructure requirements of serving 40% of the projected passenger throughput. We are determined to safeguard the quality of construction, operation, and management, ensuring that our new base of operations will be operational when the new airport opens its door in Year 2019.

Comprehensive International Cooperation

Internationalization is a requirement in serving the “Belt and Road” strategy and building a new, comprehensive opening-up framework. China Southern is gradually enhancing its efforts in international cooperation, taking more initiatives to become a world-leading air transportation Company.

In Year 2017, China Southern reached codeshare agreements with 15 airlines, including Saudia and Ethihad Airways, on 324 routes along the “Belt and Road”. These agreements have further strengthened China Southern’s global brand image and expanded its network coverage.

Refining the Route Network

We have built up a wide service network across key “Belt and Road” regions of South Asia, Southeast Asia, the South Pacific as well as Central and Western Asia. Our number of flights, service frequencies and market share are ranked the first among all Chinese carriers, becoming a leading player in connecting China with “Belt and Road” countries. In Year 2017, we launched new services and increased flight frequencies to key international destinations. For example, we added flights from Guangzhou to Mexico City (via Vancouver); to Malle (via Colombo); and from Guangzhou to Vienna, Langkawi, and Calais. These new services have complemented our service network commitment to “Belt and Road” countries and established passageways for Sino-foreign trade and communications. By the end of 2017, China Southern operated 372 services along the “Belt and Road” with 2200 return flights per week carrying over 15 million passenger a year. China Southern is the largest Chinese carrier serving the “Belt and Road”.

In the “Belt and Road” region, China Southern serves 68 cities in 38 countries with 172 routes, 2,200 weekly return flights, and carrying more than 15 million passenger every year.
2017 HIGHLIGHTS
“China Southern e-Travel” – New Connection

The rapid growth of the Internet has created a “seismic reaction” in the air transport sector that blends connectivity into traditional travel. Responding to China’s “Internet+” strategy and ATCA’s “Easy Travel” initiative, China Southern Airlines has once again upgraded its “China Southern e-Travel” product by launching 70+ new functions, encompassing six key areas of pre-flight, ground transportation, seating at the airport, in-flight, arrival-and-destination services. In addition, we have also launched new baggage inquiry functions alongside reservation services for special meal requests, unaccompanied elderly travelers and mobility-challenged passengers. We hope that “China Southern e-Travel” will be the connection between flights and passengers that will ease passengers’ travel by providing care-free experiences via one smartphone.

Easy Boarding with Facial Recognition

China Southern launched China’s first facial recognition boarding system at Nanyang Airport on June 28, 2017. Passengers can now enjoy easy boarding through facial recognition at security checks and gates once they have uploaded their photos to our on-line app. Easy boarding is realized by comparing whether the uploaded photo, ID photo, and real-time photo of the passenger match one another. This facial recognition boarding application has significantly improved passengers’ travel efficiencies while reducing the number of airline personnel needed and the work schedule of the ground staff. Furthermore, passenger identities can be confidentially checked at multiple locations, hence increasing flight security.

“China Southern e-Travel” in Numbers

- 678 functions
- 23.117 million followers on social media exceeded
- 12.74 million downloads and activations of the China Southern App

Smart China Southern and QR-Code Boarding

“China Southern e-Travel” Experience Center

The “China Southern e-Travel” Experience Center, based in Zhengzhou, opened its doors in May 2017. This experience center highlights China Southern’s goals and on-going developments in the latest mobile connectivity technology. The experience center also houses facial recognition and VR technologies. After entering the center, visitors can use “China Southern e-Travel” applications and try out our advanced technologies in flight bookings, check-in, and experience other exciting functions.

Onboard Wi-Fi

As the Internet has changed every aspect of our lives, our passengers expect to stay connected everywhere and anywhere. In Year 2017, we launched satellite onboard Wi-Fi connectivity on 15 Airbus A330-300 aircraft. Passengers can now enjoy onboard Internet service with their phones, pads, laptop computers, and other electronic devices for web-browsing, e-mail, and instant messaging services, as well as connecting to the rich IFE content. In the coming months, we will speed up our technological upgrades to provide more personalized services including additional onboard Wi-Fi and IFE on more flights to more passengers.
RESPONSIBILITY AND DEVELOPMENT

Social Responsibility Concepts

China Southern has blended its social responsibility with the revitalized corporate strategy, constructing a social responsibility conceptual framework that is based on delivering economic benefits for shareholders; creating social values for the society; delivering services for customers; creating opportunities for employees and using “green technology” to help preserve our precious environment.

Governance of Responsibility

To correspond with the integration of administrative functions of the Holding Group and the Company, we have streamlined our CSR management, renewed the CSR governance structure, and formulated the General Handbook of China Southern CSR Management (the “Handbook”) and the China Southern CSR Management Standard Operation Procedures (the “SOP”). This Handbook clarifies the management items, scope, and supervision, while the standard operating procedures details management procedures and their contents to ensure the standardization of CSR management and to lay a firm foundation for promoting the further integration of CSR concepts into daily management and operations.

Governance Structure

China Southern has established a three-tier, interlinked CSR governance structure consisting of CSR Guidance Committee, CSR Working Office, and the functional divisions of the headquarters as well as all subsidiaries and branch operations. This structure aims to achieve a horizontal synergy and a vertical connection across departments and hierarchies, ensuring an efficient CSR operation.

Management Contents

In accordance with relevant CSR regulations and in conjunction with accepted CSR practices, we have streamlined eight CSR management contents and clarified the procedures and duties of each item to promote the standardization of CSR management.

CSR operation structure

CSR Planning

CSR capacity building

CSR implementation management

CSR indicator system

CSR Assessment

Enhance communication with stakeholders

Regular communication with stakeholders

Provide communication contents

CSR report

CSR demonstration index

CSR report

Improving management and practice
Identification of Material Aspects

In accordance with the requirements of G4 Guideline and ESG, as well as industry characteristics and our own business outreach, we have identified a set of aspects that are most relevant to our business operations, and those that have, or may potentially have, great impacts to our stakeholders as key points in our fulfillment of responsibilities and communication with stakeholders.

Investigation of Aspects

Based on the significance of aspects on the two dimensions of both stakeholders and business development, China Southern conducts aspects analysis through Stakeholder Communication and Management Workshops. Stakeholder Communication focuses on assessing the importance of social responsibility issues from the perspective of stakeholders. Management Workshops focuses on the perspective of corporate business. In Year 2017, the Management Workshop invited 16 senior managers to rate the level of significance of these aspects.

Selection of Aspects

We have drawn a Material Aspect Matrix to select Material Aspects. The horizontal axis indicates the level of significance to the Company, while the vertical axis indicates the level of significance to the stakeholders. Aspects fallen in the second quadrant are internally identified as the Material Aspects.

Assessment of Aspects

Reviewed by management and experts, we have identified 26 Material CSR Aspects. In this report, we will monitor and disclose the management and information of these Material Aspects in a responsible manner and will actively collect feedback from the stakeholders.

List of Corporate Social Responsibility Material Aspects of China Southern

<table>
<thead>
<tr>
<th>Category</th>
<th>Aspects</th>
<th>Corresponding Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall business operation</td>
<td>Establishment of an appeal mechanism for corporate social responsibility</td>
<td>About Us</td>
</tr>
<tr>
<td>Economic</td>
<td>Compliance with laws and regulations</td>
<td>Harmonious Society</td>
</tr>
<tr>
<td>Product responsibility</td>
<td>Establishment of an appropriate procurement process and fine relationship with suppliers</td>
<td>Quality Service</td>
</tr>
<tr>
<td>Social</td>
<td>Reduction in flight delays</td>
<td>Quality Service</td>
</tr>
<tr>
<td>Labor practice and decent work</td>
<td>Assurance of passengers' health and safety</td>
<td>Safe Operation</td>
</tr>
<tr>
<td>Labor related human right Aspects</td>
<td>Attention to passenger satisfaction</td>
<td>Employee Development</td>
</tr>
<tr>
<td>Environmental</td>
<td>Establishment of a complete internal communication system ensuring a smooth communication channel between management and all levels of employees</td>
<td>Environmental Protection</td>
</tr>
<tr>
<td></td>
<td>Protection of occupational health and safety at work</td>
<td></td>
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<tr>
<td></td>
<td>Support to employee training and education</td>
<td></td>
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<tr>
<td></td>
<td>Ensuring multi-background of employees, equal opportunity, and equal pay for equal work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attention to employees' remunerations and benefits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resources invested in improving employees' rights</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No discrimination</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No child labor and forced labor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attention to the amount of resources used and the use of recyclable materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increase in energy efficiency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reduction in water consumption</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control of greenhouse gas emissions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attention to wastewater treatment and waste disposal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sufficient resources invested in environmental protection</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assistance to airports and authorities in the reduction of aircraft noise pollution</td>
<td></td>
</tr>
</tbody>
</table>
Responding to the UN Sustainable Development Goals

The United Nations announced the “2030 Agenda for Sustainable Development in December 2015” with the goal of bringing all countries together to resolve global issues. As an active participant in the international community and an important global enterprise, China Southern actively responds to the advocacy of the UN Agenda. In consideration of our own goals and values, our senior management team has identified eight priority actions from 17 Sustainable Development Goals. The Company plans to take part in resolving global issues by contributing our expertise and resources.

Communication with Stakeholders

We are committed to full and transparent communication with our stakeholders. By establishing and refining communication channels with the stakeholders, we strive to understand their expectations and requirements of us, and constantly increase our capabilities in fulfilling our responsibilities to achieve co-development with all parties.

Responsibility communication

We hold a series of specially-designed communication activities in Year 2017 to further strengthen our relationships with various stakeholders, increase understanding, promote mutual trust, and improve service quality.

LINK: Public Open Day

We organized multiple large-scale Public Open Day events with the themes of “The making of inflight meals,” “aircraft cleaning,” and “cabin crew training.” Through these and other events, we have provided a platform for the general public and the media to gain a deeper understanding of our operations, as we seek to earn the trust of the public and share additional awareness of aviation safety.

LINK: International Internet Impact Power

The School of Journalism and Communication of Beijing Normal University released a new document, entitled “The 2017 Report on Oversea Internet Impact Power of State-owned Enterprises” and China Southern Airlines was ranked first among all state-owned enterprises.

Communicating with Stakeholders

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<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Expectations and requirements</th>
<th>Means and channels of communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investors</td>
<td>A continuous and stable return on investment; Healthy corporate governance structure; Complete information disclosure system; Risk prevention system</td>
<td>Board of Directors; General meeting of shareholders; Meetings of Supervisory Board; Regular reports and announcements;</td>
</tr>
<tr>
<td>Government</td>
<td>Legal operation; Increase in tax contribution; Increase in employment</td>
<td>Special reports, visits and investigations; Project cooperation and business meetings; Statistical reports;</td>
</tr>
<tr>
<td>Environment</td>
<td>Energy saving and emission reduction; Climate change; Ecological preservation; Clean operation; Noise reduction</td>
<td>Fleet optimization and technological optimization; Management optimization, active participation in Carbon Trading; Advocacy of green living;</td>
</tr>
<tr>
<td>Customers</td>
<td>Continuous safety; Quality service; Reasonable price; Quick response to customer complaints and suggestions</td>
<td>Chain-of-service contact and customer feedbacks; Customer relationship management and online services;</td>
</tr>
<tr>
<td>Employees</td>
<td>Effective communications; Improve training; Improve employee benefits; Open, fair and healthy human resource policy</td>
<td>Employee Representatives General Meeting, Labor Union, Suggestion, forum, letter box; Training;</td>
</tr>
<tr>
<td>Suppliers</td>
<td>Ethical operation; Mutual benefit; Co-development</td>
<td>Business negotiations; Meetings and discussion of contracts, agreements; Training and technology exchange seminars;</td>
</tr>
<tr>
<td>Partners</td>
<td>Enhance debt repayment ability; Reduce risk</td>
<td>Contract negotiations; Business meetings and discussions;</td>
</tr>
<tr>
<td>Community</td>
<td>Establishment of a communication and interaction mechanism; Increase input to charity</td>
<td>“10-Fen” Care Foundation; Charitable activities and volunteers;</td>
</tr>
<tr>
<td>Specialists</td>
<td>Complete internal procedures; Increase resistance to external risk</td>
<td>Communications and sharing sessions; Interviews and visits;</td>
</tr>
<tr>
<td>Media</td>
<td>Establishment of information disclosure channels to timely expression of the voice of China Southern</td>
<td>Press conferences; Media Forums;</td>
</tr>
<tr>
<td>Other players in the industry</td>
<td>Fair competition; Friendly cooperation; Healthy and harmonious industry development</td>
<td>Forums and conferences; Communications;</td>
</tr>
</tbody>
</table>
**Government**
- Launched the “Light up your journey across the sky with Ecuadorian roses” event with PreEcuador
- Additional route product promotion events with Tourism Australia to enhance digital marketing and media promotions

**Media**
- Held Press Conferences for newly launched routes
- Invited media representatives to attend China Southern Open Day events

**Customers**
- “China Southern e-Travel”
- Set up a Web monitoring post to timely respond and process complaints on social media
- Started to provide onboard Wi-Fi service to improve passenger travel experience
- Launched accessible website for visually impaired passengers

**Suppliers**
- Established a centralized procurement management system, integrated, and optimized the allocation of resources
- Senior management maintained close contact with main suppliers such as Airbus and Boeing

**Investors**
- Published annual, biannual, and quarterly results reports
- Meetings of the Board of Directors and Meetings of the Supervisory Board

**Environment**
- Completed EU Carbon Trade requirements of reporting, verification, and payment
- Completed Guangdong Carbon Trade requirements of Year 2017
- Closely followed the Carbon Offsetting Scheme for International Aviation (CORSIA)
- Organized national Energy Saving Week and Low Carbon Day events

**Employees**
- Provided specialized English trainings to flight, cabin, engineering, operational control, and ground staff
- Developed and implemented mental health trainings to cabin attendants
- Held Employee Representative General Meeting and Demosocratic Meetings

**Specialists**
- Invited internet experts from Alibaba to conduct intelligent marketing training
- Invited instructors from the US to conduct new check-in function training
- Exchanged with delegation team from the Cooperation and Study Group of Regional Airlines in Africa

**Partners**
- Signed Strategic Cooperation Agreement with China Foreign Trade Center to enhance resource sharing
- Reached cooperation with Ali Cloud, became the first Chinese carrier to use the Cloud service
- Reached Strategic Cooperation Agreement with the Grameen Group, expanded into a new development mode of ticket-revenue tour
- Signed Strategic Cooperation Agreement with China General Technology Group to deepen cooperation in energy saving and environmental protection

**Other players in the industry**
- Deepened cooperation with Air France-KLM on the “Dragon Project”
- Reached codeshare agreement with Etihad Airways to expand network coverage in the Middle East
- Signed a four-party Joint Venture MoU with Xiamen Airlines, Air France, and KLM
- Promoted the establishment of an industry standard on non-voluntary re-route across SkyTeam member airlines
- Reached strategic cooperation with American Airlines
- Reached codeshare agreement with British Airways

**Community**
- Held the “From ground to sky with you” charity program to care for the left-behind children
- Transported peacekeeping forces, rescue teams and criminal suspects
- Implemented targeted poverty-alleviation, invested funds and material’s worth 15.3 million RMB
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SAFE OPERATIONS

Safety is the cornerstone to the development of any airline and likewise is our paramount concern and most important responsibility. We are committed to "Safety First" constantly improving our safety management to construct a safety control system that manages all aspects of flight operations as we push forward to become an airline that brings continuous safety to every passenger on every trip.

Safety Management

We are continuously refining our safety management system, actively cultivating a safety culture that ensures that safety is of paramount importance across all operations.

Safety System

The Safety Management System (SMS) of China Southern consists of rules and regulations, fulfillment of responsibilities, risk management, safety inspection and audit and information management. This system covers all aspects of flight deck operations, cabin, maintenance and engineering, aviation security, ground service, and dangerous goods transportation. The SMS is the foundation to achieving aviation safety and is consistently revised to solidify this cornerstone to our daily flight operations.

Safety Inspection

We conduct regular safety inspections on all flight operations. Focusing on the potential "weak links", we fully inspect and document all potential safety hazards, mitigate each of these hazards, circulate inspection reports and issue mitigation and correction bulletins. Through these comprehensive measures, we work to ensure that all inspections are thorough, no potential hazards are tolerated, all correction bulletins are strictly enforced, and the results meet all industry standards. In consideration of critical points of bi-annual schedule changes and peak season operations, we have implemented large-scale safety inspections to identify all types of potential hazards and our inspection results are included in the annual China Southern Airlines Performance Assessment.

Risk Management

Risk management is at the core of the SMS. We have established a closed-circuit supervision mechanism, consisting of daily reports, weekly discussions, monthly summaries, and quarterly rankins to strengthen risk control. We hold regular operational appraisal meetings to analyze "loopholes" to aid in raising awareness and increasing risk prevention capabilities. We target critical risks associated with newly launched routes such as Guangzhou – Vancouver – Mexico City as well as Guangzhou – Male – Colombo, and conduct risk evaluation which culminates in formulating control measures that will ensure the safe operation of these new services.
Safety Culture

Constant safety is dependent upon the efforts of and high commitment to safety of all our staff and management. We have established a core safety culture of capability, compliance, and honesty in our pilot team and we have organized a wide variety of safety educational events to embed the safety values into every staff/team member to make safety the primary concern of every member of the China Southern Airlines family.

Voluntary Safety Reporting

We operate a voluntary safety reporting system that encourages employees to voluntarily report any potential infractio that may be related to safety, in order to help the Company, discover potential safety hazards and “unsafe” situations and be proactive in preventing incidents from happening.

Safety Education

We offer an industry leading enhanced training program on newly updated regulations and handbooks such as the Operation Manual, Aviation Safety Management Handbook, and Cabin Crew Manual to standardize the code of conduct and operational standards of our staff and management team as well as organizing discussion sessions that offer flight operation and maintenance cases studies.

Safety Activities

Our safety activities include our exclusive 100-Day Safe Operation Contest, Top 10 Safe Operation Models and other industry leading programs. We thoroughly inspect potential safety hazards, promote the reduction of possible “human errors”, organized cultural activities, safety knowledge competitions, safety forums and safety micro story writing contests to raise safety awareness.

CASE: 100-Day Safe Operation Contest

We held the 100-Day Safe Operation Contest which included more than 100,000 staff and management from 42 operation units. During the contest, employees overcame many challenges such as poor environment and the mass passenger travel during the annual Chinese New Year period. We also completed critical safety assurance tasks during the NPC and the CPPCC meetings. Only 23 errors occurred during this year’s contest, the lowest in the past three years.

CASE: New “Standards of Aviation Safety Errors” Version

To further the prevention of potential safety hazards, China Southern has released an updated version of the Standards of Aviation Safety Errors to follow the latest industry safety standards. This revision categorizes potential “unsafe” events in greater details with emphasis on the “human element”, it increases the potential of error levels during certain events, strengthens penalty levels on potential unsafe events which are more prone to becoming safety incidents and in turn provides a more robust management of potential safety challenges.

Safety Audit

We see our internal safety audit structure as an important asset in assessing the level of standardization of an operation unit’s safety management. We use these safety audits to evaluate implementation and system compliance and management effectiveness to bridge all system gaps and to close potential safety “loopholes”. In Year 2017, we completed safety audits of 20 branches and subsidiaries (including the newly founded Sichuan and Yunnan branches). In addition, we assisted our Xinjiang base to pass its SAGO re-examination.

China Southern passed this year’s IOSA audit with zero incompeliance items - earning accolades from all audit team members.

In Year 2017, we completed safety audits of 20 branches and subsidiaries.

China Southern passed this year’s IOSA audit with 0 incompeliance item.
Safety Assurance

Challenged by a tough safety situation in the aviation industry, we have established risk control and management measures covering all aspects. In particular, we continuously focus our efforts on safety assurance measures in the critical areas of aircraft maintenance, pilot management, and new technological innovations from our aircraft partners – Airbus, Boeing, and Embraer – to ensure safety on every flight. Challenged by a tough safety situation in the aviation industry, we have established risk control and management measures covering all aspects. In particular, we continuously focus our efforts on safety assurance measures in the critical areas of aircraft maintenance, pilot management, and new technological innovations from our aircraft partners – Airbus, Boeing, and Embraer – to ensure safety on every flight.

Risk Control

Air transportation is an industry that has complex safety risks and numerous challenges in the field of safety management. Errors in any aspect could lead to profound consequences. We have identified the source of risk at different operational phases of ground maneuvers, take-off, climbing, cruising, approach, and landing and formulated corresponding prevention measures to ensure active control throughout flight operations and to increase our staff capabilities.

01 Ground maneuver

Main risks: Scratching with ground obstructions, aircraft collision, runway incursion.

Preventive measures: Strict adherence to ground operation regulations, enhancement of crew resource management.

02 Take-off

Main risks: Operation not following procedures, mechanical fault, adverse weather condition, scratching with ground obstructions.

Preventive measures: Strict compliance to SOP, enhancement of standard callout and checklist, timely and correct use of onboard equipment.

03 Climbing

Main risks: Wrong departure procedure and altitude, adverse weather conditions, mechanical fault, mid-air collision.

Preventive measures: Strict implementation of crosscheck, timely use of onboard equipment, accurate implementation of checklists, strict compliance to ATC instructions.

04 Cruising

Main risks: Wrong airway, adverse weather conditions, mechanical fault, terrain warning.

Preventive measures: Strict implementation of crosscheck, correct use of onboard equipment, strict compliance to ATC instructions, good decision awareness.

05 Descend and approaching

Main risks: Wrong arrival procedure and altitude, mechanical fault, terrain warning.

Preventive measures: Strict implementation of crosscheck, correct use of onboard equipment, strict compliance to ATC instructions, good decision awareness.

06 Landing

Main risks: Wrong runway, runway excursion, tail strike, heavy landing, controlled flight into terrain.

Preventive measures: Establishment of stable approach awareness, enhancement of standard callout and check, enhancement of go-around awareness, solid technique foundation.

Emergency landing after cargo hold fire warning

On November 13, 2017, a fire warning in the cargo hold of flight CZ6406 was given after take-off. The crew immediately initiated contingency response procedures and safely landed the aircraft at Changsha Airport ... 21 minutes after the initial warning. After landing, the crew guided all 151 passengers onboard through emergency evacuation procedures.

One passenger sustained a minor ankle injury.

The CAAC Central and Southern Regional Administration investigated this event. Their preliminary conclusion stated that the event was a flight alternative due to false fire warning caused by a system mechanical fault. This event does not constitute an accident or an incident with responsibility. The China Southern crew handled the event correctly, ground evacuation was prompt, and all were in compliance with safety regulations.
Aircraft Maintenance

Aircraft maintenance quality is an important foundation to flight safety. China Southern continuously enhances the all-round management of operational status of the fleet, formulate itemized checklists for each aircraft type and provide on-going inspection overall structure and critical system parts pre-flight and post-flight to achieve a transition from result-oriented to process-control and source management, thus improving the reliability of our fleet operation.

Promoting an Integrated Maintenance and Engineering System

In order to increase the collective competitiveness of all pan-China Southern operators, we are exploring the use of a synergetic maintenance and engineering (M&E) system. In cooperation with Xiamen Airlines and Sichuan Airlines, we are promoting an integrated M&E service and have selected Guangzhou, Shenyang, and Changchun as the first batch of trial bases by effectively integrating the collective M&E resources of the three to improve M&E service levels and to build a quality pan-China Southern M&E service brand.

Refining Maintenance Management System

China Southern takes the "Management - Procedure - Standard" (APS) maintenance safety management system as the core of maintenance safety. In Year 2017, China Southern continued to promote the application of APS into maintenance practices. We formulated and refined management systems such as the China Southern Maintenance Engineering Management System, China Southern Maintenance Standards among others, established mechanical fault inventory list of critical aircraft systems and parts, enhanced the standardization and operability of M&E manuals to improve maintenance levels.
CASE: Implementation of the New Marginal Error Management Mechanism

To further unify marginal error standards and assessment standards, China Southern has implemented its new Marginal Error Management Mechanism. The new mechanism categorizes marginal errors into A, B, C, and D. The mechanism has also outlined more quantifiable and rigorous management requirements on the time and quantity of marginal error reporting so as to increase the accuracy and M&E with refined management requirements.

CASE: First A380 6-Year Check in China

The Guangzhou Aircraft Maintenance Engineering Company Limited (GAMECO) is an aircraft maintenance Company in Guangzhou at Baiyun International Airport Guangzhou and provides maintenance, repair, and overhaul services. GAMECO saw the beginning of China’s first Airbus A380 six-year check as the entire process took 94 days, completed 1,550 items including painting, weighing, and test flights, totaling more than 100,000 work-hours, using 6,372 parts and tools. The total paint area has exceeded 4,000m². The success of this six-year check has not only further increases China Southern’s maintenance capability but also provided valuable industry experience for China Southern to expand into the wider A380 6-year overhaul market.

Responding to Emergencies

Challenged by an increase in potential terrorism situations, China Southern is continuously refining its internal policies and mechanisms in terms of emergency responses and anti-terrorism, optimized the handling procedures of emergency incidents while organizing various emergency response trainings and drills to enhance management and handling capabilities.

CASE: Joint Emergency Response Drills of Emergency Rescue of Aircraft Accidents

When testing its emergency response mechanism and further refining internal contingency plans, China Southern and other departments at Baiyun International Airport Guangzhou jointly organized a joint emergency response drill if emergency rescue of aircraft accident on the apron of Terminal 2. This was the largest, real-live joint drill with the highest level and largest number of participants organized by China Southern in recent years. It also had the greatest impact, covering all aspects in emergency rescue and handling of aftermath related to an aircraft incident.

CASE: Joint Emergency Rescue of the Emergency Response Drills with Safety and Security Departments

China Southern and the Airport Public Security Bureau of Guangdong Public Security Department co-organized 2017’s emergency response drill. Through air and ground cooperation, a simulated illegal interference incident was handled successfully, thus enhancing air ground cooperation.

LINK: Large-scale Engine Safety Inspection across the M&E

The M&E launched a large-scale engine safety inspection through self-checks and cross-checks, carried out internal audits on the implementation of prevention and control of engine mid-air breakdowns and fully inspected engine performances and safety situations.

SAFE OPERATIONS

Technological Innovation

Technological advancements provide innovative ideas and methods to safety management. China Southern continues to enhance our technological innovation capacities to promote flight technological evolution – which adds to the Company-wide safety environment.

- Aircraft Remote Diagnosis and Real-time Tracking System
  China Southern has developed an exclusive Aircraft Remote Diagnosis and Real-time Tracking System. It is the only aircraft health management system that is capable of monitoring major aircraft types manufactured by Airbus, Boeing, and Embraer. By analyzing systems platforms and using “big data,” this system can perform diagnosis and track aircraft status of all aircraft types operated by China Southern. Through intelligent analysis, the occurrence of mechanical faults can be forecast. This technology can effectively support the transformation from post-event emergency management to pre-event planned maintenance.

- The Rainbow System
  The Rainbow System is China Southern’s first self-developed, flight status control system that can dynamically monitor flight statuses and provide timely and rational solutions to dispatchers during flight delays based on a unique decision assistance function. Currently, the Rainbow System is handling dynamic monitoring and adjustments of more than 2,000 flights branches operated by 37 aircraft types at all China Southern Airlines offices. The application of this system has greatly increased flight operation efficiency.

- Operational Risk Control System
  The Operational Risk Control System (ORCS) is a self-designed product, exclusively developed by China Southern Airlines. ORCS is able to automatically obtain data from operational systems, analyze potential operational risks at each stage of flight operations and put calculated real-time risk values to different operational control systems. Thus providing effective decision making support to operational control, flight, and M&E teams.

- General Aviation Operation Management System
  China Southern has developed China’s first operation management system for general aviation (GFOSI), an information management platform for flight operational management and monitoring services which can effectively manage flight operations of each base and evaluate operational qualities by information sharing which will increase operational efficiency.

- Real-time Take-off Calculation System
  In spite of international technology blockade, China Southern has successfully achieved breakthroughs in performance calculation theories and developed its own, exclusive real-time take-off calculation system, approved by the CAAC. This system, currently in full operation, determines aircraft take-off and landing weight and speed based on runway length and height, obstructions in airport spaces, temperature, wind speed, wind direction (and other parameters) and can significantly increase aircraft take-off efficiency.
Safety Performance

2,567 million
civil flight hours

218
passenger million
of accidents

20,662 thousand
civil aviation flight hours

283
international flights
of aviation safety

0.0101
incident per 10,000 flight-hour
(Excluding Xiamen Airlines)

0
incident per 10,000 flights
in general aviation

Non-step Innovation

Since Year 2011, China Southern Airlines has boldly introduced a new generation of IT-based
aircraft types such as the Airbus A380 and the Boeing 787 Dreamliner. These massive computer
centers overcome heavy challenges for the Company and Mr. Liu and his team tackled these
challenges, seeking around the clock to overcome numerous challenges to successfully
develop remote diagnostic modules for the A380 and 787. Mr. Liu's team and the engineers from
CSNRC exchanged experiences in remote aircraft diagnosis, as Mr. Liu offered advice and counsel
in the development of an embedded information system for China's CR9 aircraft.

China Southern’s Remote Aircraft Diagnostic and Real Time Tracking System is an innovative,
generational upgrade and is rapidly gaining its capabilities with years of testing and analysis. The
system is now applicable to all aircraft types operated by China Southern, achieving
a technological breakthrough in the ability to monitor aircraft performance. It is expected that in the
future, this system will be compatible with more aircraft including the CSR9. Mr. Liu and his team
are poised to serve China’s market leading air transport sector and are already playing an
important part in this rising of China’s aviation industry.

Technological innovation is a challenging and long-tern journey and China Southern will
continue the reform in innovative developments that will not only upgrading her safe-based
experience of all passengers.
Environmental Management Policy

Environmental protection has become an inescapable element in the operation and development of China Southern Airlines. The company actively seeks measures on the impact of global climate change, greenhouse gas (GHG) emissions and biodiversity loss during its Company’s commercial development. China Southern actively supports the advancement and targeting goals of sustainable development set by global organizations including the United Nations (UN). Without the SkyPam – an integrated version system set by the Chinese government on energy saving and emission reduction – there is no possibility to significantly cut carbon emissions, reduce fuel consumption, and cut down on pollutants emitted to the environment.

In Year 2017, our investment in environmental-related matters reached new heights. We have fostered an office for energy and emissions management staff and management that is especially focused on energy savings, emission reductions and other environmental protection tasks. China Southern has further refined its energy-saving and emission-reduction management system, produced energy-saving and emission-reduction management guidelines, strengthened the general management manual for energy consumption and emission calculation manual, and set up a dedicated office for energy-saving and emission-reduction management.

Installed a diverse management style of guiding centralized management and responsibilities by integrating energy-saving and emission reduction tasks down to lower functions in the Mechanical and Engineering Division, Operational Control Center, and Cargo Emission as well as departmental controlled subduction.

Environmental Protection

China Southern was environmental excellence and sustainable development in a high-quality development. Green development and environmental protection are important performance indicators of sustainable development, and we expect to deliver change continuously, promote innovation in energy consumption, carbon emissions, and climate actions aimed at improving the environment.

Our Story

Remote Aircraft Diagnosis with “Dark Technology”

Airbus Southern aircraft utilize the sky, ground staff are overseeing real time "health status". Whenever aircraft is not able to provide technical guidance to the engineering team with a new maintenance system that effectively improves dispatch safety operation. This “dark technology” is the product of an Airbus-centered Advanced Maintenance Center China Southern.

Filling the Technological Void

Back in 1999, there were no standards for monitoring the performance of aircraft. In today’s fast-paced world, these standards must be met to ensure safety. Consequently, we established a new monitoring system for aircraft that could only be monitored after landing. Spares were only prepared after technical issues were discovered. Following this process, maintenance staff worked tirelessly to ensure safety of all flights. As air transportation entered an era of rapid growth, the traditional process no longer meets the growing demand. This led to the exploration of advanced aircraft diagnostic systems. China Southern invested in research and development to develop maintenance systems that could provide real-time data on the health of aircraft. This has been crucial in maintaining safety and improving efficiency on the ground. China Southern is now one of the few airlines in China with advanced aircraft diagnostic systems.
Responding to Climate Change

Climate change has become a severe environmental issue and we are witnessing strong moves towards acting against global climate change. The Company continues to explore different ways to increase efficiency in its use of energy sources, reduce carbon footprint by various means such as technological advancements, efficiency upgrades and the use of alternative fuels... all coupled to earnestly make use of carbon trading mechanisms and implement the emission reduction responsibilities that are compatible with our developmental stage and capability.

Greenhouse Gas Emissions

The main source of greenhouse gas emissions for any airline comes from the burning of jet fuel with a minor source coming from ground energy consumption including the burning and using of petrol, diesel, natural gas, liquified gases, coal and purchased electricity. In Year 2017, the Company aimed to build a stringent procedure framework from organization to systems, from systems to operation, and from operations to performance monitoring.

### Consumption

<table>
<thead>
<tr>
<th></th>
<th>Jet fuel</th>
<th>Petrol</th>
<th>Diesel</th>
<th>Coal</th>
<th>Natural gas</th>
<th>Liquefied gas</th>
<th>Electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2015</strong></td>
<td>7940.1</td>
<td>5553.65</td>
<td>7407.13</td>
<td>3450</td>
<td>29,9031</td>
<td>242.57</td>
<td>254,4421</td>
</tr>
<tr>
<td><strong>2016</strong></td>
<td>7940.1</td>
<td>5553.65</td>
<td>7407.13</td>
<td>3450</td>
<td>29,9031</td>
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</tr>
</tbody>
</table>

### CO2 emission (thousand tons)

<table>
<thead>
<tr>
<th></th>
<th>Jet fuel</th>
<th>Petrol</th>
<th>Diesel</th>
<th>Coal</th>
<th>Natural gas</th>
<th>Liquefied gas</th>
<th>Electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2015</strong></td>
<td>11682.1</td>
<td>16.9</td>
<td>23.3</td>
<td>7.2</td>
<td>66.7</td>
<td>0.7</td>
<td>155.2</td>
</tr>
<tr>
<td><strong>2016</strong></td>
<td>11682.1</td>
<td>16.9</td>
<td>23.3</td>
<td>7.2</td>
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<td>66.7</td>
<td>0.7</td>
<td>155.2</td>
</tr>
</tbody>
</table>

### Unit GHG emission (ton per thousand ton-kilometer)

<table>
<thead>
<tr>
<th></th>
<th>Jet fuel</th>
<th>Petrol</th>
<th>Diesel</th>
<th>Coal</th>
<th>Natural gas</th>
<th>Liquefied gas</th>
<th>Electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2015</strong></td>
<td>0.302</td>
<td>0.300</td>
<td>0.291</td>
<td>2.5</td>
<td>4.0</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td><strong>2016</strong></td>
<td>0.302</td>
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<td></td>
</tr>
</tbody>
</table>

**Total** 11740.2

N.B. The civil aviation industry uses CO2 as the measurement of GHG emission. The calculation of equivalent CO2 emission can be found in Civil Aviation Comprehensive Statistics Reporting System, and 2011-2012 China National Grid CO2 Emission Factor.
**Flying Green**

**Flight Plan**
- Optimize flight layout and route, fully utilize premium resources, increase number of non-stop flights, reduce flight time and fuel consumption.
- Build a greener fleet, optimize fleet composition, and introduce more new-generation aircraft such as the A350XWB.
- Winglet retrofit, optimize aircraft performance by introducing new generation engines such as GE9X and Trent1000.
- Comprehensive application of LIDO flight planning system, shorten flight distance by evaluating critical operation data such as route, altitude, and fuel quantity.
- Improve flight plan accuracy and fuel data accuracy, rationalize fuel loading quantity by monitoring actual payload, flight time, and altitude based on QNH fuel management system big data platform.
- Optimize aircraft center-of-gravity, promote centralized payload, and integrated the Guideline on Optimizing Center-of-Gravity for Fuel Saving through Payload to guide the practice of fuel saving by adjusting the center-of-gravity.

**Aircraft Weight Reduction**
- Paperless flight deck, application of Electronic Flight Bag (EFB)
- Precise drinking water filling standards
- Retrofit new overhead luggage compartment with lightweight materials to reduce aircraft weight
- Replace paper reading materials with electronic devices

**Flight Operation**
- Promote accuracy and standardization in payload reporting; avoid over-fueling by using payload prediction platform, deviation focus, and dynamic payload adjustment
- Precise fuel management by using "jet fuel e-cloud" big data platform
- Developing aircraft ground fuel collection system, enhance monitoring and reduce the use of APUs

**New aircraft** | **Retired aircraft** | **Reduction in jet fuel consumption** | **Reduction in CO2 emissions over 3.09**<br>**tons** | **Fleet unit fuel consumption**<br>**tons**
---|---|---|---|---
79 | 27 | 20,000 | 63,000 | 3.09
CASE: Electronic Air Waybill
China Southern is steadily promoting the standardization of the electronic air waybill which will optimize paperless operation capability of the internal IT system, and ramp-up the application of e-AWB. We have launched e-AWBs at domestic originating, cargo terminals and destination cargo terminals, as well as some international routes. The company estimates that we can save more than one million paper air waybills every year. If we were to stack these paper air waybills one on top of another, they would reach the height of two Canton Towers of 1,200 meters. In the future, the company will transform itself into an e-AWB and electronic cargo operation, gradually replacing existing paper cargo documents with electronic packs, achieving an end-to-end paperless transportation process for our cargo air operations.

CASE: Jet Fuel e-Cloud
The “Jet Fuel e-Cloud” data platform is an open data platform, developed exclusively by China Southern Airlines, which supports multiple systems and serves as a platform which consolidates data chains of jet fuel data of all China Southern flights. This “Jet Fuel e-Cloud” monitors and analyzes fueling and consumption status of each flight, dynamically and in real-time enabling dual data transmission with jet fuel providers. Benefitting by its abilities in calculating fuel consumption, we have achieved precise fueling supported by big data, which in turn reduces costs and energy consumption, resolving the issues of fuel burn by carrying redundant fuels.

LINK
In recognition of development in digital cargo, especially in international e-AWB, IATA awarded China Southern the Best Development in Electronic Air Cargo Transportation on July 18, 2017.

Estimated savings of paper Air Waybill
1 million
Equivalent to the height of 2 Canton Towers

Active Participation in Carbon Trading
As a pioneer in a domestic carbon trade trial scheme, the company is actively exploring latest ideas to significantly manage CO2 emissions. We see carbon trading as a new means and tool of reacting to climate change and controlling GHG emissions. We are building a standardized management system and preparing the Company for the challenges of carbon trading with positive attitude and actions.

Environmental Protection on the Ground
We care about flying, and we care more about the additional challenges we have brought to the environment due to flying. In this light, the Company makes significant efforts to minimize our environmental impact. In our daily operation and management, we enforce strict management policies and measures that enhance control from two areas of scale and emissions by reducing the use of resources and controlling the emissions of pollutants.

Water Treatment
Saving Water Resources
The company closely monitors if our use of water is reasonable to ensure that no water is wasted. We therefore review carefully if wastewater emissions meet the standards needed to ensure that no water is polluted. We are consistently planning how to use less water so that this precious resource can serve real needs. During Year 2017, Xiamen Airlines continued to implement a rational drinking water plan that focuses on every detail and exploits every opportunity to save water. Drinking water is loaded to each aircraft in precise quantities, based on the capacity of the aircraft water tank and flight distance. For example, when a Boeing 737-400 aircraft is deployed on flights less than 1.5 hours, only 40% of the water tank needs to be filled. Xiamen Airlines saved 9,456 tons of water from these precise water filling measures. In terms of aircraft maintenance, we introduced an advanced engine cleaning equipment, the EcoPower. EcoPower conforms to ISO 58001 Energy Management Systems and provides a meaningful commitment to continual improvement in energy performance. With the use of EcoPower, not only that the performance restoration result has been improved by 10%, water used in engine cleaning can now be recycled and reused, aiding in achieving zero emission during the engine cleaning processes. During Year 2017, China Southern consumed 768 million tons of water.
Wastewater Treatment
The cleaning of aircraft is one of the main sources of wastewater generation. The Company promotes the use of dry-clean technology, reducing wastewater from its source. Wastewater generated is primarily transported to our wastewater treatment plant through the sewage system. Wastewater is treated and emitted in strict compliance to the Comprehensive Wastewater Emission Standards of Guangdong and are checked by appropriate authorities on a regular basis.

Waste Control

Treatment of Hazardous Wastes
All hazardous solid wastes are being disposed of in accordance with the Law of the People’s Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste, as well as other relevant laws and regulations. We consistently strive to enhance the level of compliance of waste disposal from every stage in the generation of hazardous waste. Significant hazardous wastes generated in our daily operations include waste oil from aircraft maintenance; waste organic solvents from cleaning and waste fluorescent tubes from offices. The Company is using dedicated hazardous waste storage facilities, imposed regulations on disposal procedures and performance pre-treatment to flammable, explosive and volatile hazardous wastes. Impermissible materials are used in the storage facilities; wastes that are incompatible are stored separately to mitigate the risk of reactions. All wastes are properly collected and treated by qualified agencies after treatment(s) before storage and before transportation.

Treatment of Non-Hazardous Wastes
We follow the principles of “volume reduction” and “holding harmless” in the managing of non-hazardous wastes. We believe that the most effective means of reducing the amount of waste treatment is to recycle these wastes at their points of disposal and to reuse them as appropriate resources. The Company has commissioned specialized agencies to collect, recycle and reuse the wastes generated and we also advocate to our staff and management recycle at the points of disposal in order to increase the value of reuse and upcycling of all wastes.

Gas Emission Controls
Air pollution is one of the key issues in harming our living environment and health. In response to the goals of total quantity control raised by the Chinese government, as well as various policies on energy saving and emission reduction, the Company endeavors to make “green flying” the best practice of our efforts in reducing environmental impact by promoting energy savings and emission reduction technologies which in turn enhancing our fuel management and improve energy consumption efficiencies.

Noise Abatement
We prefer the use of quieter and cleaner engines to reduce aircraft noise from its source. During each aircraft engine testing phase, we use ground testing flow diversion walls and noise barriers; during operational phase, we optimize runway and routes and deploy noise reduction procedures to reduce engine running noise; during engine maintenance phases, we regularly check each engine to improve performance and reduce decibel levels. We also regularly monitor the effectiveness of the flow diversion walls to ensure that the noise levels meet the Emission Standard for Industrial Enterprises Noise at Boundary.

Advocating a Greener Lifestyle
We fully understand that the capability of any one, single Company to independently solve environmental and resource problems is highly limited. Therefore, we incorporate elements of environmental protection into various aspects of our business, present a rich and diverse set of environmental protection to the public and encourage more people to take part in environmental protection activities that are fun, educational and help turn environmental protection activities into a refreshing new experience.

Green Electronic Services
China Southern Airlines is dedicated to connecting low carbon footprint travel and flight services. Through innovative products and services, we have replaced traditional paper marketing with electronic means which in turn has significantly reduced the use of paper materials in our service processes. We consistently strive to motivate passengers to practice environmental protection through their own behaviors and raise their environmental awareness.

Electronic Boarding Pass
China Southern has expanded the use of smartphone-based QR code boarding passes to a wider coverage. Passengers can now go through security checks and boarding gates simply by scanning the QR codes on their smartphones without having to print traditional paper boarding passes which in turn effectively reduces paper use while improving passengers’ seamless pre-flight experiences.

Electronic Invoice
From paper invoices to e-invoices and from printed itineraries to e-invoices, China Southern embraces every change in the existing era of digitalization. July 20, 2017 saw the production of the first e-invoice in China’s civil aviation industry, this marked the official launch of e-invoice service on domestic flights to all passengers. During Year 2017, China Southern printed eight million passenger invoices. If these printed invoices can be replaced by instead switching to e-invoices, this is equivalent to the saving more than 3,200 trees.

Promoting Green Building
China Southern actively promotes the development of green building construction. Our new headquarters building, the China Southern Tower in Guangzhou was designed and constructed based on green building technologies and follows the principles of sustainable development. By applying the concepts of “green and balance” and through a scientific general design, the China Southern Tower has already achieved five key goals of energy savings, land use savings, water savings, material savings and environmental protection as advocated by China’s green building demonstration projects. In consideration of our own characteristics, the China Southern Tower project focused specifically on three areas of energy savings and emission reductions, low resource consumption, and a healthy and comfortable building environment.
Advocating Energy Saving

During the Antarctic Energy Saving 1st Phase Week, we held a meeting with Bureau Veritas and the Center for Marine Energy Conservation to adapt to the latest requirements of ship management. We have also been working to reduce our greenhouse gas emissions through various measures, including by optimizing our ship's energy efficiency, improving our operational processes, and investing in new technologies to reduce our carbon footprint.

CASE: The Antarctic Summit

The theme of the 2017 China Polar Tourist Season is "Sustainable and Responsible." The summit was held in the Antarctic region, and the event was attended by experts and representatives from various countries. The summit was aimed at raising awareness of the importance of protecting the environment and encouraging sustainable tourism in the Antarctic region.

Shielding Bio-diversity

China Southern Airlines continues to put the environment and animal protection at the forefront of its operations. We have taken measures to reduce our impact on the environment, such as limiting carbon emissions, optimizing flight routes, and promoting sustainable tourism. We believe that every effort counts in protecting the environment and bio-diversity.

Reducing the Use of Water

The fuselage of an Airbus A380 is 73.7 meters long and 17.7 meters high, and its wingspan is 88.8 meters. This size relates to its total water usage of 400,000 liters. Each washing cycle consumes 20 liters of water. If the company were to embark on a 50,000 km flight, the amount of water needed would be a tremendous amount. Thus, the environmental impact involved, we could not waste water resources on this scale.

Fuselage length

37.57 m

Height

11.76 m

Width

35.80 m

Cleaning area

800 sq. m

Water consumption

30 liter

The amount of "water" required to wash one aircraft is on average 20 kilograms of water, or an average of 1.5 liters per square meter. The water used in aircraft cleaning is usually treated to meet the standards of aviation water, and is returned to the water treatment system. The company has its own water recycling system, which can save a significant amount of water resources.
QUALITY SERVICES

Our Story

Start with “Superficial Effort” - End in “Green Flight”

By most people’s understanding, the role of washing either an airplane or a car might seem almost the same. Is superficial effort in washing, cleaning, and painting down to the clean and fast finishes. However, in the eyes of our engineers, aircraft washing is an effective way to save on energy consumption.

Say no to 1% Weight Gain

Aircraft surfaces are contaminated by pollutants in the air, on the ground, and from gas exhaust during flight and parking. Pollutants such as smoke, dust, oil, and particulate matter, and acids may be deposited on the surface of the fuselage and its components. The deposition of pollutants onto the fuselage causes rust in the presence of fractional resistance and the accumulation of static electricity. Most important, these pollutants may cover special coatings that impact the “shock” of certain aluminum compounds and overall flight safety. These pollutants may only account for a 1% weight gain, yet in total, it increases fuel consumption, resulting in 2-3% to 10% of environmental impact of more than 1%. Therefore, to ensure smooth and intact aerodynamic surface of each aircraft, China Southern requires a complete and thorough aircraft washing at least once every 24 days. One staff member from the Maintenance and Engineering Division cleans the aircraft thoroughly to ensure it is clean and smooth for efficient flight and flight safety when you travel. It gives a sense of mind where we know that the washing process does not require a lot of water.

“...it is exactly the same when the surface has a good reflective finish and feels smooth where you touch, it gives a sense of mind where we know that the cleaning process does not require a lot of water.”

Our staff member from the Maintenance and Engineering Division

Service Management

We formed a closed-circle management of service improvements by both investigating and collecting issues to continually work to provide passengers with high-quality professional services through improving the design of our service products, consistent evaluation by staff and management.

1. Product Design

With the applications of digitalization and “internet”, in services, we developed exciting new service products that enhance the travel experience.

2. Standard Setting

We continuously optimize and upgrade our ground handling and in-flight service standards and formulated the Transportation Service Management Manual and our service management tool to provide the services of business management manuals at various units in the service system.

3. Service Evaluation

Service issues are then collected and evaluated with a combination of feedback from passengers and our own China Southern analysis support system. Service improvement directions are then identified through case studies, discussions, and seminars.

4. Service Improvements

Through full process service quality monitoring system and targeted notification of key service issues, we timely analyze feedback and suggestions from air passengers to continually improve our service qualities.
Service Improvements

Providing a world-class service has always been our standard and our goal. We constantly refine service standards and procedures and promote our service board to ensure that we meet and exceed passengers’ expectations with higher service quality.

Improving Flight On-time Performance

We at China Southern Airlines know that on-time flight arrivals and departures are of the greatest concern to our passengers. We analyzed the cause to flight delays and constructed a consolidated operation mode as well as formulated an advanced control system which deploys specific measures to increase our on-time efficiency.

Refining Management Rules and Regulations

We have amended the Management Regulations for the On-time Performance of China Southern Flights, clarified our guiding principles, requirements, and staff management rewards in managing the on-time performance of our flights and revised numerous contingency plans for extensive flight delays in order to improve delay handling and recovery capabilities.

Improving Operational Efficiency

Externally, we work to maintain regular communication and coordination mechanisms with airports and air traffic control centers and present plans for flights, with priority in maintaining the operational environment. Internally, we have hired additional flight dispatchers as well as constant training procedures, standardized the cooperation and linkage with all our Company branches, subsidiaries, and units to improve operational command efficiency and collaboration levels.

Flights with Poor On-Time Performance

We have refined the early warning system for “delay-prone” flights in key metropolitan markets, conducted daily checks and received valued feedback of our flight plans that optimize flight management procedures by adjusting and improving the flight schedule structures from the source.

We have also organized flight on-time performance competitions and held operation review seminars to coordinate existing issues to improve on-time performance.
Quality Service

At China Southern Airlines, our passenger needs are our primary concern. Focusing on every possible detail, we are constantly innovating our products and services to improve passenger experiences both on the ground and in the air.

Baggage

Implemented the "Baggage Up" service standards at airport delivery to minimize possible damage to passengers’ checked baggage.

Introduced baggage compensation coupons to reduce compensation payment processing time.

Enhanced baggage information sharing to enable real-time checked baggage tracking.

Expanded our exclusive “through check-in” service coverage to benefit more passengers by delivering their checked baggage to their final destinations.

Ticketing

Easy ticketing through online booking engine and advance seat selection services.

Check-in

Optimized crowd management at check-in area to reduce waiting time for passengers.

Developed in-app verification ‘mini-programs’ to enhance efficiency and accuracy of identity checks.

Transfer

Fully implemented easy transfer services to improve passenger experience during transit.

Enhanced “backstage” re-route efficiency to reduce passenger wait time during flight interruption.

Flight Delay and Interruption

Improved hotel services and optimized passenger self-selection functions.

Refined service standards and transition procedures to improve services for passengers with a disability and with special needs.

Enhanced handling efficiency of delayed and interrupted flights, prompt information dissemination to affected passengers.

Onboard Services

Improved overall cabin crew quality

Upgraded service standards of our premium flight attendants to provide the finest passenger services.

Rationalized allocation of English proficient cabin crew members to improve passenger communication onboard.

Upgrade Cabin Services

Introduced new IFE interface and internet platforms and launched "push notification" of audio and video contents.

Implemented new cabin passenger audio announcements.

Improved inflight catering qualities to meet the personalized needs of our varied passengers.

Implemented cabin “deep cleaning” to create a comfortable and hygienic environment.

Organized various onboard activities to create warm and pleasant travel experience.
In June 2017, China Southern launched the “Baggage Up” initiative to improve corporate level. We formulated unified standards for the six baggage handling stages of check-in, ramp loading, aircraft loading, aircraft off-loading, ramp off-loading, and baggage reclaim. These standards have regulated baggage handling throughout the entire process to ensure that passengers’ checked bags are kept up at the same time as possible to reduce the possibility of damage. It is our corporate goal to deliver the first bag within 15 minutes after an aircraft is parked to reduce passengers’ waiting time at baggage claim.

China Southern has also ramped up the applications of PDA scans and communication among all loading personnel. Passengers can now track the location of their checked bags by scanning the QR code on their boarding passes.

Starting March 1, 2017, China Southern Airlines passengers connecting to/from international flights at Baiyun International Airport Guangzhou can enjoy through check-in services. Boarding passes of all flight segments can be issued at originating airports, which are checked through to the final destination. This greatly reduces challenges faced by passengers during point-to-point transfers.

In cooperation with Baiyun International Airport Guangzhou and China Customs, we have optimized our infrastructure and service for connecting passengers by: Expanding our waiting lounges dedicated to connecting passengers; introducing dedicated baggage inspection machines for transfer baggage; Optimized custom procedures for connecting passengers; Improved information management throughout connecting procedures so that more passengers can benefit from through check-in service.

In-flight Catering Services
China Southern Airlines has further consolidated our in-flight catering resources, gaining valued insight from leading catering providers in terms of standardized meal production to enhance our on-board product development and innovation. Our newly designed catering menu serves a wide array of international and contemporary Asian cuisines with a ‘Flavor of China Southern’ to our passengers. We have gradually launched various meal advance ordering channels including our website, on-flight app, WeChat official account, and call centers, allowing passengers to enjoy a gourmet onboard culinary experience.

“Through check-in” coverage in Year 2017
179 Flights
53 International services operated by China Southern at Guangzhou
98 Domestic destinations
49 Overseas destinations

After consolidating catering resources across the entire China Southern system, the new Nanland Air Catering Co. Ltd was founded on May 18, 2017. Nanland has evolved from the original company platform which now has a consolidated processing, supply, R&D, and distribution functions of all air catering businesses to promote a greater integration and transformation of onboard catering. The Nanland Catering Center strives to serve China’s finest cuisine to all passengers onboard China Southern flights.
Customer Care

We uphold the service concept of “Life First, People Oriented” as we focus on the special needs of passengers by constantly bringing specialized services that attend to their abilities in dealing with unique situations. Human care is an integral part of our service concepts and we work diligently to facilitate passengers traveling with special needs.

Prompt Medical Emergency Services

We have improved our abilities in handling emergency situations to ensure that every passenger with a medical emergency is taken care of in a timely and professional manner.

Managing Medical Emergencies

We attach the greatest importance to the well-being of our passengers. Our principles are to provide active help to cover upfront costs and to offer companionship during medical emergencies. China Southern has signed medical assistance agreements with Baiyun International Airport. Guangzhou to ensure that passengers can be promptly transferred to local or regional hospitals for further treatments.

Onboard Medical Volunteer

Program

Strongly supported by the National Health and Family Planning Commission, and through cooperation with medical institutions and volunteering organizations, China Southern continues to actively recruit onboard medical volunteers. We offer a reward scheme to our volunteers with air miles and at the end of Year 2017, we recorded a total number of 3,850 onboard medical volunteers.

CASE: Emergency Medical Repatriation

On May 11, 2017, an infant who had his palm fractured by a machine, travelled with us onboard flight CZ6404 from Kunming to Chongqing. This infant needed to be treated within 10 hours. Having learnt this situation, our Customer Care Center immediately was in touch with the operating branch of this flight, the airport of origin and the destination airport to streamline all operational details so that the flight would receive the highest priority in both departure and landing. During the flight, the infant was carefully looked after by the crew and upon landing, the infant and his companions were swiftly transferred to an awaiting and pre-arranged ambulance and were taken immediately to the hospital.

CASE: Cabin Crew Aided Seriously Ill Passenger

Onboard flight China Southern flight CZ3087 from Guangzhou to Harbin and during the massive air transportation during Chinese New Year, a passenger suddenly became ill. The passenger started to vomit blood and fell into a coma. The crew immediately reacted and assisted a doctor who was traveling onboard to treat this passenger. After diverting the aircraft to a nearby airport, the passenger was transferred to a hospital and fully recovered. Our in-flight crew successfully helped save a life with their calm professional skills.

CASE: Emergency Response at 30,000 Feet

On September 12, 2017, a passenger suddenly had a seizure when a flying from Guiyang to Shantou at its designated cruising altitude of 30,000 feet. The crew assisted a physician, who was traveling onboard, as he performed an emergency procedure. The flight was immediately diverted to Guangzhou and 73 minutes after take-off, the flight landed safely. The passenger was immediately transferred to a nearby hospital for follow-up treatments.

Total registered onboard medical volunteers in 2017: 3,850
Caring for Passengers with Special Needs

Assisting the traveling of passengers with special needs has always been our focus. China Southern is committed to ensuring the safety and comfort of the passengers with special needs by increasing our service standards and providing personalized and professional services.

Children

To our younger passengers, we have introduced a series of personalized products such as the “Kippik Kids” program, kid’s meal SMS ordering service, gift sets and cartoon channels on the IFE system, offering a safe and fun travel experience.

Elderly

For our senior citizen passengers aged 65 or above, our SMS platform sends out message instructions inviting them to make use of our dedicated counter at airports across China Southern’s network to provide more considerate service to their senior citizens.

Passengers with Special Meal Requests

A convenient electronic reservation service is provided to passengers with special meal requests. Passengers can make their meal reservation request online or via our on-line app. Passengers are also offered the opportunity to make their special meal request for all future bookings by replying to a system generated SMS.

Passengers with Impaired Mobility

To ease the travel of passengers with impaired mobility, we have launched a self-service booking function in our on-line app and introduced wheelchair service on 23 long-haul international flights.

CASE: Upgraded Maternal and Child Service

In cooperation with professional maternity care providers, China Southern has upgraded its maternal and child care service at Shanghai Pudong International Airport, becoming China’s first airline to have upgraded such facilities. After the upgrade, the station is now equipped with many advanced appliances, including ergonomically designed nursing chairs with elbow support with appropriate hardness and curvature to reduce the pressure on the arms and back nursing mothers. China Southern has also introduced “intelligent baby basins” which not only play soothing music, they can also be adjusted to suit different sleeping postures and feature special movement patterns to help infants fall asleep faster.

LINK: Visually Impaired Passengers

On December 19, 2017, China Southern’s accessible website was launched, specially designed to provide easy and professional web services to our visually impaired passengers. After entering the accessible site, visually impaired passengers can check flight information and make flight reservations with assistive functions such as larger font size, change of background colors and font colors, and audio narration of web contents. In the future, additional contents will be added. China Southern is also developing voice-based interfacing functions on our on-line app to better serve the needs of visually impaired passengers.

LINK: Guide Dog Services

December 2017 marked the one-year anniversary of the cooperation between China Southern and China Guide Dog Training Center, based in Dalian. Over the year, China Southern continuously refined the service system for guide dogs in the areas of flight booking, check-in, boarding, inflight and arrival. Services have been integrated to a seamless link formed by the airline’s marketing, ground service, and cabin service divisions.
Listening to Feedback

Passenger satisfaction is our ultimate goal. We listen carefully to passenger opinions, constantly improving and strengthening service management, striving to provide the most satisfactory service to our passengers.

Value Complaints

We highly value feedback and complaints from our passengers and consistently optimize service procedures and standards. We have a “pre-warning system” that takes proactive measures to handle passenger complaints in a timely manner so that every passenger is treated with the utmost respect.

Quick Response to Complaints

In cooperation with the Consumer Association of Guangdong and Consumer Affairs Center of the CLAC, we have launched a consumer rights protection “fast track” to specifically handle complaints relating to consumer rights and damages. China Southern has also improved its internal management of complaint processing efficiencies and expedited the processing time from three to five business days... down to one to two calendar days.

Optimization of Service Procedures

By summarizing and analyzing “hot” topics from passenger feedback, we identified the weakest links and shortcomings in our service procedures and standards and have set up a department responsible for service procedure implementation to ensure passenger satisfaction.

Active Passenger Care

We have established a tripartite event handling mechanism comprising the Customer Care Center, functional divisions, and responsible units in the complaint event to jointly resolve customer complaints, refine complaint processing and standardize compensation. Through this mechanism, we can ensure customer complaints are promptly and effectively dealt with, forming a positive direction of active care to increase passenger satisfaction rate.

Satisfaction Survey

China Southern is completely customer-oriented, issue-oriented, and result-oriented. Through customer evaluations, assessment by professional bodies and internal feedback, we have implemented a multi-level, multi-dimension, and systematic service control system to continuously improve customer satisfaction.

Collecting Passenger Feedback

To understand passengers’ opinions to our service on the ground and in the air to follow up on any unresolved complaints, we have established and exclusive SMS evaluation system, an on-line app-based flight service comment system and questionnaire survey of satisfaction on complaint processing.

Internal Service Evaluation and Monitoring

China Southern has founded the first crew service evaluation system in China that allows the chief pursers to evaluate on-board meal service, ground support and cabin cleaning at each airport and have recruited 40 service quality inspectors to conduct unannounced inspection of ground and air services on a monthly basis.

Monitoring Key Projects

China Southern has an important website analysis system that closely monitors passenger comments on travel websites, such as www.airlinequality.com and www.auditi.com. In respect of these comments, we conduct monthly summary analysis and rectification projects. In terms of other key areas such as lounge service and cabin announcements, we also conducted dedicated investigations to further glean from passenger opinions.
"Beechey boy" has become a hot topic in the scene as Ms. Zhang's story was reported widely in media. Ms. Zhang was the only China Southern personnel from the aviation industry who was named one of the "Herald of the Air" at the "Flight of the Transporter". When asked about it, Ms. Zhang said, "I was honored to have been recognized and awarded as an ordinary person because of an ordinary job. I will keep on being a pioneer of 37 degrees, always put on warmth and strength". Ms. Zhang Liubing is one of many in China Southern's service team and each and every one of us in China Southern practice warm service in our jobs, bringing passengers with professionalism, warmth, and sense of touch in every journey.

37℃ Energy Keeper

Five-heart Method

- Care
- Love
- Patience

All-round attention to passenger needs

"SSS" Method

- Smile
- Smart
- Speed
Our Story

To be the “Most Beautiful Stewardess” with “Warmth”

Because of a hug, Miss Zhang Kun, a half-person of China Southern, became the heartbreak of 2017... all in one night. The photo of a half-person in the front seat appeared on a major website and her special story was reported by various media including CCTV.

A Warm Hug

On the morning of January 16, 2017, a young female passenger onboard China Southern Flight 9077 from Shenzhen to Xi’an very suddenly broke down in tears. Miss Zhang had been wearing short sleeves, shivering, and staring at a stick and immediately turned to all ventilation as while passing the passenger from behind, she suddenly found the passenger was crying. Miss Zhang hugged the passenger and gently patted her back to console her. Miss Zhang was captured by the passengers onboard and quickly brought Miss Zhang, a nickname “warmth hug.”

The flight landed in Xi’an ahead of schedule, and the passenger gradually recovered. Miss Zhang asked what happened and said when she saw the half-person, she was so shocked that she almost collapsed. The passenger was still crying, and Miss Zhang continued to talk to her and eventually made her feel at ease.

“Five-Heart and 3S” Model

Since joining China Southern in 2009, Miss Zhang has treated each flight with passion. She meaningful a word that she called “Five-Heart and 3S”. The “Five-Heart” is hearts of meticulousness, love, patience, responsibility, and perseverance. The “3S” is Smile, Sniff, and Speed. The airline’s ongoing training onboard China Southern Airlines will have an exceptional trainee experience. The company has included the “Five-Heart and 3S” model into the training content of new flight attendants.

In the flight role, Miss Zhang always brings small items such as cutaneous comforts, tobacco, sandwiches, and chocolates to show her love and appreciation.

EMPLOYEE DEVELOPMENTS

The professional development of our staff and management is the foundation for the sustainable development of China Southern Airlines and we have integrated the core concepts of “Respect Talent” into the processes of management, training, and management. The Company constantly enhances the capabilities and overall quality of our staff and management and strives to create a fair and just work environment to facilitate a work-life balance and achieve the co-development of staff and the Company.

EMPLOYEE DEVELOPMENTS

We are committed to increasing our human resource policy in the area of employee welfare and we seek to create an environment that fosters a sense of belonging and a culture that promotes the well-being and development of our employees.

Human Resources Policy

China Southern continues to develop a human resources policy focused on developing an effective and professional team. The Company is committed to fostering a culture of respect, development, and continuous improvement, which we believe will contribute to the long-term success of the organization.

Fundamental Rights

China Southern fully adheres to international and national laws, respects and protects human rights that are recognized by international standards and is committed to preventing any form of discrimination. The Company does not engage in activities that violate labor and employment discrimination. We are committed to creating a safe and healthy work environment and treat each of our colleagues with the utmost respect, irrespective of gender, ethnicity, nationality, faith, ethnicity, political view, and marital status. During our 2017, 100% of our staff and management were fully protected by employment contracts.

Remuneration and Benefits

At present, the Company continues to grow and develop. We have established a remuneration strategy that is competitive with industry standards and is continuously improving our remuneration distribution to provide a competitive salary and benefit system for all staff and management. The Company aims to provide all staff with fair and competitive remunerations that are designed to attract and retain the best talent for the future. In 2017, we continued our efforts by introducing a Real employee evaluation system and have designed our reformat of the annual employee performance assessment system.

By the end of 2017, China Southern signed long-term employment contracts with 1,840 employees and renewed one-year employment contracts with 1,840 employees. The Company implemented a goal-based reward system and employee development program for ground service staff and front-line personnel.
Employee Structure

In order to provide multi-level quality talents to the Company, we have created professional growth paths for employees at different functions as we encourage diversified experiences.

Total number of employees: 96,234

By types of duty:
- Flight crew: 8,957 (9.31%)
- Cabin crew: 19,632 (20.40%)
- Air Marshal: 2,301 (2.39%)
- Maintenance and engineering: 16,031 (16.66%)
- Operational control: 2,519 (2.62%)
- Passenger transportation: 9,409 (9.78%)
- Freight transportation: 6,791 (7.06%)
- Ground services: 10,340 (10.74%)
- IT: 1,474 (1.53%)
- Finance: 2,485 (2.58%)
- Others: 16,295 (16.93%)

By educational level:
- Master’s Degree and above: 3,602 (3.75%)
- Bachelor’s Degree: 41,731 (43.36%)
- Associate Degree: 29,759 (30.92%)
- Vocational studies and below: 21,142 (21.97%)

Other statistics:
- Percentage of employment contract coverage: 100%
- Percentage of social insurance coverage: 100%
- Fatalities in the line of duty: 3
- Number of working days lost due to work-related injuries: 9,365
- Number of new employees: 4,446
- Number of non-Chinese employees: 1,282

*These statistics do not include B controlled subsidiaries of Mayan Logistics, CSN E-Commerce, Rondani Air Catering, Kiyun, Naksong International Cargo, CGL Hong Kong and oversea subsidiaries, and joint ventures.*
Growth of Employees

We see our staff and management as a critical resource in reaching sustainable development. Following the core concept of “training creates value”, we have organized multi-level, all-inclusive trainings to ignite the innovative powers and to promote the professional growth of each of our staff members.

Enhancing the Building of Online Training Platforms

In order to increase training quality and training efficiency, we re-organized the China Southern e-learning platform. This new platform encompasses teaching, research, service, and management functions and uses intelligent data analysis as a tool to provide dedicated support to the organization of effective employee trainings through online activities and micro lessons.

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<th>micro-lesson</th>
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<td>New micro-lessons</td>
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<td>292</td>
<td>2165</td>
</tr>
<tr>
<td>Total number of online lessons</td>
<td>Total micro-lesson chapters</td>
</tr>
</tbody>
</table>

PC e-Learning platform

- Visits to PC e-Learning platform in 2017: 66,000
- Total visits: 2.83 million
- Active e-Learning App users: 30,000
- Total visits: 358 thousand

Diverse Training

Pilot Training

The pilot training standard and system includes theory training, simulator training, routine training, and regular assessment. The system aims to help pilots to improve flying techniques continuously and our senior management team has rationalized training() on in accordance with different pilot demands during peak and off-peak seasons, designed scientific allocation plans and pilot substitute procedures to meet operational needs.

English Training

We have actively promoted “100 English Sentences in Cabin”, “Double-100 English Training” and “PEPEC English Assessment” among our pilots and flight attendants. Specific abilities such as using English at critical service points, were tested to improve communication skills on international flights and to promote the Company’s continued international development.

Young-Employee Cultivation

We have select key business elites to serve as mentors of younger employees and promote more “mentor-mentee” relationships to guide younger employees in their career planning and for the younger employees to achieve faster professional development.

Cabin Attendant Training

In order to build an integrated service team from the ground to the skies, we adjusted our training system to be in line with Xiamen Airlines’ 3+3 model which adds a ground service training element to the training contents of new flight attendants. This new system enables the transition from “efficient recruitment and fast deployment” to “scientific training and talent building”. At the same time, we established a flight attendant management trainee program to reserve a pool of management talents.

Foreign Pilot Training

To promote the level of internationalization of our pilot team, the Company has strengthened the training of foreign pilots. By forming a “foreign pilot recruitment inspection team”, hiring internationally-experience instructors, and increasing specialized foreign captain training, we have further enhanced foreign pilot capacity management to provide a solid human resource foundation for the international expansion of China Southern Airlines.

Total participants over 41,000

Completed training subjects: 1,880
An Innovative Team

Innovation is the first driving force to development. We have continued to innovate activities of “small inventions, small evolutions, small modifications, small designs, small suggestions” (the “Five-smalls”) to harness the creative power of our staff and management. During Year 2017, the output of the “Five-smalls activities” covered nine major functions of sales and marketing, flight, M&E, operational control, cargo, cabin, and ground services. More than 90% of our staff and management participated in these activities.

“My Aircraft” Mobile Application
GAMECO developed a “My Aircraft” mobile application that can obtain real-time parking position change and aircraft status. This application also incorporated a request for parts function which has improved maintenance quality and efficiency.

Data Calculation Application for International Shipments
The Cargo Division of China Southern’s Shanghai Branch developed an application that can automatically calculate shipping fees of international shipments within the cargo hold. Each shipment item is automatically matched to different calculation modules of international transfer, international direct and international accumulative. The average time taken to calculate shipping fees has been reduced from 2 hours to 30 minutes.

Parts Purchase and Send-for-Maintenance Request Approval System
The maintenance depot of Hainan Airlines developed a “parts purchase and send-for-maintenance request approval system” that effectively reduces approval time from up to two weeks to only 30 minutes. This system rapidly accelerated the transition time of parts inventory, improved purchases, and send-for-maintenance efficiency.

Video Recorder
The Company’s Cabin Division introduced the use of a video inspection “recorder” during cabin safety inspections. The collected audio and video footage are then used as part of the evaluation of flight attendants.

Aircraft Oil Can Opener
Using 3D survey and design tools and modular printing technologies, China Southern’s Hnan Branch developed a new aircraft oil can opener. This opener resolved many shortcomings using traditional methods and developed a new tool that is being used throughout China’s civil aviation sector. This tool has also earned a patent from the State Intellectual Property Office.

Troubleshooting Training Station
The China Southern M&E Division developed a Troubleshooting Training Station for Aircraft Electricity Power Distribution System which can simulate all types of complex malfunctions and quickly improve training efficiencies of maintenance trainers and enhance their understanding of the power distribution system.

Four-Level Pre-Warning System
A project team developed an exclusive regional thunderstorm four-level pre-warning system which can evaluate the number of flights and level of impact from thunderstorms at different times and at different airports to provide important reference to the decision making process of flight schedule adjustments.

Parts Dispatch System
The maintenance depot of Guizhou Airlines developed a user-friendly and standardized parts dispatching system which simplifies information submission, achieved the transition from manual filing to electronic submission and increased the filing accuracy rate from the previous 75% to a remarkable 99.9%.

Over 90% of our employees had participated in these activities.
Health Management

A good health guarantees the work and life of an employee. We pay close attention to the physical and mental health of our employees, continuously refine the health and safety management system to create a safe and healthy workplace.

**Employee Health Check**
China Southern Airlines organizes annual health check for our staff and management and created occupational health files for each team member. We regularly increase health checks and take effective measures to prevent accidents at the workplace to protect the safety of our staff and management.

**Public Health**
Aviation Health Assurance System: The Aviation Health Division has compiled aviation health assurance documents that provide theoretical evidences and technical support to flight operations covering areas such as prevention of onboard vector-borne diseases and medical emergencies onboard to further improve the health and safety protection.

Food Safety Inspection. During Year 2017, China Southern staff conducted food safety inspection at our headquarters and branches; dispatched 2,105 person-time inspectors; inspected food outlets 995 unit-time and issued 452 inspection reports on-site. The inspections have helped the guarding of food safety of our employees.

Communicable Disease Control. The Company has held 59 information sessions on the epidemic of communicable diseases, trained 4,771 person-time staff and equipped each division and work unit with protective materials to prevent the outbreak of disease.

**Mental Health Support**

**EAP Project**
To better care for the mental health of our frontline employees who work under constant stress, we have organized seminars of EAP Basic Theory: EAP Active Coaching Techniques: Mental Health Promotion Training and Practicing EAP at Work. The Company has also trained EAP specialists to provide high quality counselling services to our staff and management.

**Mental Health Trainings**
China Southern launched online “micro training sessions” and offline seminars, mental health growth classes and mental health micro counselling events specifically for new flight attendants. The launch of these training courses marked the beginning of raising training standards through psychological aid, to help Staff, management and flight attendants relieve their stresses.

**CASE: Stress Relief**
In order to help staff and management through the massive stress during peak travel seasons, we invited professional counsellors to offer complementary mental health seminars. The seminars are provided both online and offline, including online micro sessions and offline sharing sessions. These seminars include stress and emotion; relationship and family; parenting and personal growth and offer comprehensive counselling services to our Staff with a combination of learning and experiential learning.

**Employee health check rate**
81.05%

**Pilots and cabin attendants participated in health checks**
17,188 person-time

**Ground staff participated in health checks**
74,560 person-time

Happiness in the Workplace

We treasure the contribution of every China Southern Airlines staff and management... we care for the work-life balance of our staff and management and we work towards promoting the work-life balance and increase their happiness.

Caring for Staff with Special Needs

We continue to provide care and assistance to different groups of employees, such as imprisoned and retired employees.

**Care for female employees**
We care for the health of our female colleagues and during Year 2017, we secured 665,000 RMB of medical assistance on behalf of 47 female colleagues who suffered from critical illnesses and have continued the building of “Mother’s Room”, distributed anti-radiation maternity clothes to 1,910 pregnant colleagues.

**Care for Employees in Hardships**
The Company continues to aid financially challenged colleagues through our Mutual Fund for Critical Illnesses. The 48th session of the fund provided 3.344 million RMB financial assistance to 332 colleagues and Year 2017’s 5th session provided 355,000 RMB financial assistance to 97 colleagues.

**Care for Retired Employees**
The lives and health of our retired staff and management are of great concern to the Company and we have designed personalized healthcare plans for our valued retirees and we have invited these important cadres to offer suggestions and recommendations to the Company while organizing annual “positive energy” activities to showcase the healthy and positive attitudes of these retirees to promote healthy development .... both physically and mentally.
Enriching Lives Beyond Work

The Company actively cultivates a warm and hospitable corporate culture by organizing regular cultural and sport activities to enhance group cohesiveness and encourage employees to enjoy a superior work-life balance.

Spring Fun Fair

The Spring Fun Fair was held in February 2017 and attracted nearly 8,000 staff and their families with 12 fun and challenging games for all ages. At the end of the fair, more than 500 prizes were given, bringing joy to all participants.

Employee Cultural Festival

The 2nd China Southern Employee Cultural Festival, with the theme of “Sunshine Southern and Colorful Dream of the Sky”, was held from April 30 to June 30, 2017. The festival brought employees of different ages, different interests and from different jobs together through a series of activities including a basketball tournament, tug of war, mass dancing, book forum, storytelling, and letter exhibition.

Table Tennis Tournament

The “Ankang Cup” Table Tennis Tournament was held in November which attracted more than 400 participants from 44 secondary work units.

“The Voice of Cabin”

“The Voice of Cabin” and the Cabin Broadcaster Competition was held across our network from mid-April to June 2017. More than 14,000 flight attendants took part in the fierce competition which helped the improvement of cabin announcements and promoted an all-round cabin service image.

Mind Sports Games

The first “Mind Sports Games” was held in November 2017. More than 180 participants from 40 secondary units took part in his “Feast of Intelligence” by competing in four sports of “Tractor Game”, Chinese Chess, bridge, and the game of Go.
Years 2008 to 2009 brought even more challenges. Due to
unforeseen factors beyond her control, Li Li moved from
Panyu Aviation Academy to Yangyi Civil Aviation College
and then to Guanghan Flight Academy. But the net gave up.
Perhaps annoyed by her perseverance, the "God of Luck"
shyly set his sights on her and after graduating from
Guanghan in 2010 and was recruited by China Southern
as a cabin crew.

After joining China Southern, Li Li felt more physical and
mental stress in an industry that is dominated by men.
However, being up close to realizing her dreams, Li Li
spent hours studying flight theories, took numerous tests
training and simulated flight exercises to increase her
command capabilities and under the attentive guidance
of the instructors, Li Li achieved her breakthroughs, built
up her self-confidence and set new attention to details
and precision.

After two years of hard work, on April 28, 2012, the 79th
year after joining China Southern Airlines, having passed
different examinations, Li Li finally obtained her Captains
and was given the "touring" Captain insignia and the
shoulder epaulet that she held firmly. On Long River
A decade of hard work brought Li Li to the point of truly
feeling herself and she goes on to bring her passengers to
their destinations safely and happy on every flight. This is
the reason she sticks to her and her original goal:
Every passenger deserves to be respected and Li Li
Southern Airlines will always be there to provide fair
opportunities to each staff to continue a dream platform
and to help our staff realize their dreams.
Our Story

Discover Life’s Many Possibilities

If your dreams seem too fleeting, do practice the concepts presented. Our interview Captain Li Zhihui shares with her own experience that, as long as you do not place limits upon yourself, you will eventually be your “better self” even when there are obstacles and challenges along the way.

Charting a New Path

Captain Li Zhihui is a real-life role model. She was made for the world of a professional team. Unfortunately, an injury forced her to retire from tennis. This was Li’s biggest challenge. To reach herself, Li started studying at the University of Science and Technology. She became flight attendant after graduation and stayed at the job for 12 years. Yet, after getting married and having her own child, she started to feel that her lack of knowledge had become limiting her becoming a programmer. But a fate would have it, she was told by her brother who was also a professional one to go to an aviation academy to learn. As this was met with the challenge from the Insturamentaleer, she became a pilot after her life’s ambition. In January 2023, all the age of 27 Li Zhihui recorded near her first time flying in Airbus A350-900 and became the oldest cadet in the entire academy.

HARMONIOUS SOCIETY

China Southern values its social contribution as highly as its business development. We fulfill our commitments and fully exercise our strength and arrange special flights, social charity activities, and the promotion of cultural exchanges throughout the international community in important platforms in fulfilling its social responsibilities and reflecting the system of building a harmonious society.

Special Flights

High political awareness, bearing in mind the overall interests, and taking up relevant responsibilities are the style of all kinds of enterprises. During special flights, our activity takes international missions and performed multiple large and urgent tasks such as the transportation of peacemaking forces, government charter flights, and disaster relief.

Undertaking Special Tasks

Transportation of Peacekeeping Forces

We selected flight crews with the highest empathy and outstanding abilities to operate charter flights for peacemaking forces. We safely operated Flight to Moldova on May 12, 2023, and transported 150 the Balkans. In the region of East Asia and Africa to carry a distance of 2,761,000 meters and safely transported 250 peacemaking force members.

Serving Important Events

China Southern operated special charter flights for VIPs and were a major air partner to major global events, including: the World Forum, Belt and Road Forum; the Summit of China and Fortune Global Forum in Singapore.

Escorted Transportation of Criminal Suspects

China Southern arranged double crew and aviation security personnel with high political awareness and operating special transport flight for criminal suspects on July 22, 2023, experienced at a marsch of the “Golden Shells” were escorted. 79 individuals who were suspected of derision and blackmail from Hangzhou and Hangzhou, Cambodia, back to China.
Disaster Relief and Rescue Actions

Disaster Relief and Rescue
In August 2017, two earthquakes struck Jiuzhaigou, Sichuan Province, and Jiexi, Xinjiang Province. After the earthquakes, China Southern immediately initiated disaster rescue efforts to these two stricken areas. An emergency directing team was formed to keep in close contact with the CAAC, ATC, and each respective airport. A rescue team of 150 was standing by to participate in the rescue efforts.

Transportation of Materials
In September 2017, China Southern freighter aircraft departed from Shanghai Pudong International Airport, carrying 96 tons of rescue materials donated by the Chinese government to Mexico City.

Urgent Tasks
On the evening of July 19, 2017, the China Southern General Aviation Xinjiang Base received an emergency rescue alert. An emergency procedure was immediately launched and a helicopter immediately departed, taking only 92 minutes to bring back a worker at sea who suffered a head injury.

Charity and Philanthropy
China Southern Airlines is devoted to charitable causes through donations, poverty alleviation, volunteer efforts and other activities to fulfill our responsibilities to the society while promoting an integrated development of the company and the society.

Focus on Culture and Education
China Southern places the greatest value on education and we provide bursaries to underprivileged students, organize various volunteer activities, actively strive to improve the education and living standards of youth living in impoverished regions to create new opportunities for them to realize their dreams.

“10-Fen” Care Foundation Education Fund
Since its founding 12 years ago, the “10-Fen” Care Foundation has helped more than 1,500 college students (per year) complete their education. We have funded more than 13,000 underprivileged and outstanding students from across China, putting wings to their chasing of their dreams. The foundation has also conducted education aid activities at primary schools in remote areas in Heilongjiang, Xinjiang and Sichuan. We have donated computers, clothes and stationery to schools and left-behind children to help them realize their dreams.

Over the years, the foundation has brought hope to financially challenged but academically outstanding students at numerous institutions. During these years, the “10-Fen” Care Foundation donated an accumulated amount of more than 70 million RMB to education and poverty alleviation projects.

“Bookroom of Dreams”
“Bookroom of Dreams” was founded by China Southern Young Volunteers Association. Its purpose is to collect, donated books for students and left-behind children in impoverished regions, to create an environment that values knowledge and culture for them. January 7, 2017, the “Reading China Southern” project teamed up with “Bookroom of Dreams” to visit Tiande Primary School and Qingyang Primary School in Longshan, Huainan, marked the beginning of a series of school visits of the “Bookroom of Dreams” project. In this visit, the volunteers brought over more than 600 books and 150 culture and sports materials.
Passing on the Spirit of Volunteer Service

China Southern promotes and advocates the spirit of volunteer service, highlighting the leading role of the China Southern Young Volunteers Association, encouraging, and supporting our staff and management to initiate community-based volunteer activities and continuously help those in need.

"I Am Your Eyes"

The China Southern Xinjiang Branch has been visiting the Ursu School for the Blind for the last eight years. During Year 2017, they invited 15 visually-impaired students under the "I Am Your Eyes" project to visit cabin simulators at the China Southern Training Center in Guangzhou. Both volunteers and students had great fun when they shared aviation knowledge together. The volunteers introduced various kinds of aviation knowledge to the students through touching the seats, buttons, tray tables and other cabin equipment so that they could also experience the fun of flying.

"Kapok Classroom"

China Southern volunteers brought the "Kapok Classroom" into local schools to introduce civil aviation knowledge to primary and secondary school student through one-on-one lectures and demonstrations. Also, in connection with China Southern Open Day, the Company included more students to experience our frontline operations, to understand civil aviation and to build up safe travel concepts hence raising the safety awareness of the entire society.

LINK: China Southern nominated at the "100 Youth Volunteer Service Demonstration Project of China."

The 4th China Youth Volunteer Service Project Competition and the 2017 Volunteer Service Conference were held in Chengdu, Sichuan on December 2, 2017. China Southern’s ‘Happy Travel, Warm Way Home’ project was one of only two from the civil aviation industry nominated at the competition.

LINK: "Kapok Classroom" and "I Am Your Eyes" Projects Win Awards at the 1st Civil Aviation Youth Volunteer Service Project Competition.

The 1st Civil Aviation Youth Volunteer Service Project Competition was held in Guangzhou on November 22, 2017. The "Kapok Classroom" of China Southern Young Volunteers Association and the "I Am Your Eyes" project of the Company’s Xinjiang Branch were awarded individual prizes at the competition. China Southern won the Special Contribution Award and the "Excellence in Organization" Award.

Engaging with International Communities

China Southern is actively engaged in the "Belt and Road" advocacy and "Reaching Out" strategy. We respect the culture and customs of different countries, take part in local cultural events and sports activities to promote cultural exchanges and development. China Southern’s goal is to be the bridge between China and the international community and become a global corporate citizen.

International Cultural Festivals

China Southern has been sponsoring the largest cultural festival of the southern hemisphere, the Sydney Festival, for the last six consecutive years starting from Year 2012 to 2017. We have also reached an agreement that covers the next three years from 2018 to 2020 to deepen the positive relationships between China Southern and the Sydney Festival. Through a comprehensive brand image promotion, we have further integrated into the local societies and our international image has become more well-known among the varied regional communities.

Sports Development

China Southern has become a main partner of the longest-standing football team of Australia, the Melbourne City FC, and reached a three-year sponsorship for Years 2017 through 2019. China Southern also become one of the major sponsors of the Adelaide Crows of the Australian Football League during Year 2017. We have promoted our brand image and influence through supporting local sport events.

Partnership with Local Symphony Orchestras

China Southern is a proud platinum sponsor of the Adelaide Symphony Orchestra, one of the six professional orchestras of Australia and the largest performer in South Australia. Each year, the Adelaide Symphony Orchestra provides more than 100 musical performances of various genres. Through this cooperation, we are able to continuously expose our brand to the high-quality and high net-worth demographics located in South Australia.

Brand Promotions

China Southern has reached cooperation agreement with the world-renowned University of Canterbury and become one of its leading corporate partners. We have launched brand promotional events at Mt. John University Observatory, a popular tourist attraction and a prestigious space research institute of New Zealand. Such promotional events help China Southern build an international premium brand image and earn the trust from the local and regional communities.
Supply Chain Management

Chin Southern is committed to building an open cooperation platform. The goal of our “number one principle” of all transactions are treated with full transparency. We also actively encourage our suppliers to join us in fulfilling social responsibilities to share our values and grow together.

Procurement Management

Chin Southern adheres to the principle of procurement management. During 2017, we established a strategic system of our procurement management system and set up a procurement management system. We launched a set of rules on bidding to test supplier management and safeguard management. The Company also established a corporate procurement management system, standardized and simplified supply management processes to improve internal control and internal management systems.

Geographical Distribution of Suppliers

Total 8,079

Central and South 5,816
Northeast 923

North 261
Southwest 156
Northwest 465
Southeast 458

A Better Future

Apart from spending time with his family, Liu and his parents were visited to take part in the Science Camp in Shanghai. The camp included visits to China Southern’s headquarters, BMW Shanghai Manufacturing Center, and the Guangzhou Science and Technology Center. On July 22, 2017 Liu and his parents from his home, parted ways with his beautiful white airplane and visited the Training Center of China Southern’s headquarters.

In addition to visiting the simulator and learning about flight simulation services, the parents also experienced emergency evacuation procedures at the center. Accompanied by their parents, the youth changed into training uniforms and evacuated from the simulator through the evacuation slide immediately after the experience. Liu told his mother excitedly that he had no such fun and he wanted to be an airman when he grew up.

A story of how 80% of the children of poor children to find their parents and he also brought the goodwill of the entire Chin Southern with them. Through such events, these and other children have a chance to see the outside world and the world outside their villages.

This experience may also serve to encourage them to have their own dreams. In the future, Chin Southern will continue to promote the “lauding and children knowledge around” project to additional organizations so that the seed of more left behind children can fulfill their own responsibilities and meaningful action.
ESG INDICATORS INDEX

Our Story

A relay of love that brought more than a family reunion

A small group of people from China made an effort that moved others. They formed a relay team where each person carried a specific segment of the journey, allowing them to make progress even when faced with difficulties. They showed how love and support can bring people together.

Crossing a Thousand Miles

We were able to support and care for the children of China with the support of the entire society. On June 2, 2020, we held a ceremony to celebrate the childcare workers and their families. The ceremony marked the start of a new chapter for them.

Report: ESG Indicators Index

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This document provides a comprehensive overview of the company's ESG performance and includes detailed information on various aspects, such as health and safety, food and safety, production, environment, labor standards, child care, and social responsibility. It is designed to inform stakeholders about the company's commitment to sustainability and social responsibility.

Life of Cao Shu (Shanghai Sunshine Children's Home) - Sun Xiaoping

Sun Xiaoping was one of the leaders of an organization dedicated to child welfare. He passed away suddenly after a 1,000-kilometer journey. His impact on the organization and the children he worked with will continue to be remembered.
# G4 Indicators Index

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