



**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K**

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2019
or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____
Commission file number 1-442

THE BOEING COMPANY

(Exact name of registrant as specified in its charter)

Delaware	91-0425694
<small>(State or other jurisdiction of incorporation or organization)</small>	<small>(I.R.S. Employer Identification No.)</small>
100 N. Riverside Plaza, Chicago, IL	60606-1596
<small>(Address of principal executive offices)</small>	<small>(Zip Code)</small>

Registrant's telephone number, including area code (312)-544-2000

Securities registered pursuant to Section 12(b) of the Act:

Common Stock, \$5.00 Par Value	BA	New York Stock Exchange
<small>(Title of each class)</small>	<small>(Trading Symbol)</small>	<small>(Name of each exchange on which registered)</small>

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of June 30, 2019, there were 562,702,606 common shares outstanding held by nonaffiliates of the registrant, and the aggregate market value of the common shares (based upon the closing price of these shares on the New York Stock Exchange) was approximately \$204.8 billion.

The number of shares of the registrant's common stock outstanding as of January 24, 2020 was 563,152,208.

DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates information by reference to the registrant's definitive proxy statement, to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year ended December 31, 2019.

Forward-Looking Statements

This report, as well as our annual report to shareholders, quarterly reports, and other filings we make with the SEC, press and earnings releases and other written and oral communications, contain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as “may,” “should,” “expects,” “intends,” “projects,” “plans,” “believes,” “estimates,” “targets,” “anticipates” and similar expressions generally identify these forward-looking statements. Examples of forward-looking statements include statements relating to our future financial condition and operating results, as well as any other statement that does not directly relate to any historical or current fact.

Forward-looking statements are based on expectations and assumptions that we believe to be reasonable when made, but that may not prove to be accurate. These statements are not guarantees and are subject to risks, uncertainties and changes in circumstances that are difficult to predict. Many factors, including those set forth in the “Risk Factors” section below and other important factors disclosed in this report and from time to time in our other filings with the SEC, could cause actual results to differ materially and adversely from these forward-looking statements. Any forward-looking statement speaks only as of the date on which it is made, and we assume no obligation to update or revise any forward-looking statement whether as a result of new information, future events or otherwise, except as required by law.

Item 1A. Risk Factors

An investment in our common stock or debt securities involves risks and uncertainties and our actual results and future trends may differ materially from our past or projected future performance. We urge investors to consider carefully the risk factors described below in evaluating the information contained in this report.

The 737 MAX fleet is currently grounded, and we have temporarily suspended production of the 737 MAX. We are subject to a number of risks and uncertainties related to the 737 MAX. These risks include uncertainties regarding the timing and conditions of 737 MAX regulatory approvals, delays in the resumption of production, lower than planned production rates and/or delivery rates, increased considerations to customers, increased supplier costs and supply chain health, changes to the assumptions and estimates made in our financial statements regarding the 737 program, and potential outcomes of various 737 MAX-related legal proceedings and government investigations.

On March 13, 2019, the Federal Aviation Administration (FAA) issued an order to suspend operations of all 737 MAX aircraft in the U.S. and by U.S. aircraft operators following two fatal 737 MAX accidents. Non-U.S. civil aviation authorities have issued directives to the same effect. Deliveries of the 737 MAX have been suspended until clearance is granted by the appropriate regulatory authorities. The grounding has reduced revenues, operating margins, and cash flows, and will continue to do so until production and deliveries resume and production rates return to pre-grounding levels. In connection with the effort to return the 737 MAX to service, we have developed software updates for the 737 MAX, together with an associated pilot training and supplementary education program. We continue to work with the FAA and other non-U.S. civil aviation authorities to complete remaining steps toward certification and readiness for return to service, including addressing their questions on the software updates and how pilots will interact with the airplane controls and displays in different flight scenarios. Any delays in certification and/or the resumption of deliveries or other liabilities associated with the accidents or grounding could have a material adverse effect on our financial position, results of operations, and/or cash flows. In addition, multiple legal actions have been filed against us related to the 737 MAX. We also are fully cooperating with U.S. government investigations related to the accidents and the 737 MAX, including investigations by the U.S. Department of Justice and the Securities and Exchange Commission. Any adverse results with respect to any such litigation or investigation could have a further material impact on our financial position, results of operations and/or cash flows.

During the second quarter of 2019, we announced plans to reduce the 737 production rate from 52 aircraft per month to 42 per month. During the fourth quarter of 2019, we announced plans to temporarily suspend 737 MAX production beginning in January 2020. Impacts related to the reduction in production rate followed by the production suspension have significantly increased costs to produce aircraft included in the current accounting quantity and will result in reduced 737 program and overall BCA segment operating margins when deliveries resume. We have also made significant assumptions regarding estimated costs expected to be incurred in 2020 and 2021 that should be included in program inventory and those estimated costs that will be expensed when incurred as abnormal production costs. If we are unable to return the 737 MAX aircraft to service in one or more jurisdictions or begin deliveries to customers on the schedule and/or at a pace consistent with our current expectations, we will incur significant additional costs and/or delay the resumption and subsequent ramp-up of 737 production. These delays would also result in significant additional disruption to the 737 production system once production resumes and would further delay efforts to restore and/or implement previously planned increases in the 737 production rate. Cash flows continue to be negatively impacted by delayed payments from customers, higher costs and inventory levels, and payments made to customers in connection with disruption to their operations. In addition, we have experienced claims and assertions from customers in connection with the grounding, and we recorded an earnings charge of \$8,259 million, net of insurance recoveries of \$500 million, in 2019, in connection with an estimate of potential concessions and other considerations to customers for disruptions related to the grounding and associated delivery delays.

Any further delays in regulatory approval of the 737 MAX, the resumption of 737 production and/or deliveries, further disruptions to suppliers and/or the long-term health of the production system, supplier claims or assertions, or changes to estimated concessions or other considerations we expect to provide to customers could have a material adverse effect on our financial position, results of operations, and/or cash flows. The FAA and other non-U.S. civil aviation authorities will determine the timing and conditions of return to service in each relevant jurisdiction. We have assumed that regulatory approval will enable 737 MAX deliveries to resume during mid-2020. This assumption reflects our best estimate at this time based on factors such as the estimated duration of regulatory approval and final pilot training requirements. In the event of unanticipated additional training requirements in one or more jurisdictions, delays in regulatory approval, and/or delays in our ability to resume deliveries, we may be required to take actions with longer-term impact, such as further changes to our production plans, employment reductions and/or the expenditure of significant resources to support our supply chain and/or customers.

We have made significant estimates with respect to the 737 program regarding the number of units to be produced, the period during which those units are likely to be produced, and the units' expected sales prices, production costs, program tooling and other non-recurring costs, and routine warranty costs. In addition to the estimated timing of the resumption of deliveries, we have made assumptions regarding outcomes of accident investigations and other government inquiries, timing of future 737 production rate increases, timing and sequence of future deliveries, supply chain health as we implement our production plans, as well as outcomes of negotiations with customers. Any changes in these estimates and/or assumptions with respect to the 737 program could have a material impact on our financial position, results of operations, and/or cash flows. For additional information, see our discussion under "Management's Discussion and Analysis-Critical Accounting Policies and Estimates-737 MAX Grounding" on page 45.

Our Commercial Airplanes and Global Services businesses depend heavily on commercial airlines, and are subject to unique risks.

Market conditions have a significant impact on demand for our commercial aircraft and related services. The commercial aircraft market is predominantly driven by long-term trends in airline passenger and cargo traffic. The principal factors underlying long-term traffic growth are sustained economic growth and political stability both in developed and emerging markets. Demand for our commercial aircraft is further influenced by airline profitability, availability of aircraft financing, world trade policies, government-to-government relations, technological advances, price and other competitive factors, fuel prices, terrorism, epidemics

and environmental regulations. Traditionally, the airline industry has been cyclical and very competitive and has experienced significant profit swings and constant challenges to be more cost competitive. Significant deterioration in the global economic environment, the airline industry generally, or the financial stability of one or more of our major customers could result in fewer new orders for aircraft or services, or could cause customers to seek to postpone or cancel contractual orders and/or payments to us, which could result in lower revenues, profitability and cash flows and a reduction in our contractual backlog. In addition, because our commercial aircraft backlog consists of aircraft scheduled for delivery over a period of several years, any of these macroeconomic, industry or customer impacts could unexpectedly affect deliveries over a long period.

We enter into firm fixed-price aircraft sales contracts with indexed price escalation clauses which could subject us to losses if we have cost overruns or if increases in our costs exceed the applicable escalation rate. Commercial aircraft sales contracts are often entered into years before the aircraft are delivered. In order to help account for economic fluctuations between the contract date and delivery date, aircraft pricing generally consists of a fixed amount as modified by price escalation formulas derived from labor, commodity and other price indices. Our revenue estimates are based on current expectations with respect to these escalation formulas, but the actual escalation amounts are outside of our control. Escalation factors can fluctuate significantly from period to period. Changes in escalation amounts can significantly impact revenues and operating margins in our Commercial Airplanes business.

We derive a significant portion of our revenues from a limited number of commercial airlines. We can make no assurance that any customer will exercise purchase options, fulfill existing purchase commitments or purchase additional products or services from us. In addition, fleet decisions, airline consolidations or financial challenges involving any of our major commercial airline customers could significantly reduce our revenues and limit our opportunity to generate profits from those customers.

Our Commercial Airplanes business depends on our ability to maintain a healthy production system, achieve planned production rate targets, successfully develop new aircraft or new derivative aircraft, and meet or exceed stringent performance and reliability standards.

The commercial aircraft business is extremely complex, involving extensive coordination and integration with U.S and non-U.S. suppliers, highly-skilled labor from thousands of employees and other partners, and stringent regulatory requirements and performance and reliability standards. In addition, the introduction of new aircraft programs and/or derivatives, such as the 777X, involves increased risks associated with meeting development, testing, production, and certification schedules. The 737 program has also experienced significant disruption due to the grounding of the 737 MAX and associated suspension of 737 MAX production. As a result, our ability to deliver aircraft on time, satisfy regulatory and customer requirements, and achieve or maintain, as applicable, program profitability is subject to significant risks.

We must minimize disruption caused by production changes and achieve productivity improvements in order to meet customer demand and maintain our profitability. We have plans to adjust production rates on several of our commercial aircraft programs, as well as to resume 737 MAX production at low levels once timing and conditions of return to service are better understood. At the same time we are engaging in significant ongoing development, testing and production of the 777X aircraft. In addition, we continue to seek opportunities to reduce the costs of building our aircraft, including working with our suppliers to reduce supplier costs, identifying and implementing productivity improvements, and optimizing how we manage inventory. If production rate changes at any of our commercial aircraft assembly facilities are delayed or create significant disruption to our production system, or if our suppliers cannot timely deliver components to us at the cost and rates necessary to achieve our targets, we may be unable to meet delivery schedules and/or the financial performance of one or more of our programs may suffer.

Operational challenges impacting the production system for one or more of our commercial aircraft programs could result in production delays and/or failure to meet customer demand for new aircraft, either

of which would negatively impact our revenues and operating margins. Our commercial aircraft production system is extremely complex. Operational issues, including delays or defects in supplier components, failure to meet internal performance plans, or delays or failures to achieve required regulatory approval, such as the with the 737 MAX, could result in significant out-of-sequence work and increased production costs, as well as delayed deliveries to customers, impacts to aircraft performance and/or increased warranty or fleet support costs.

If our commercial airplanes fail to satisfy performance and reliability requirements, we could face additional costs and/or lower revenues. Developing and manufacturing commercial aircraft that meet or exceed our performance and reliability standards, as well as those of customers and regulatory agencies, can be costly and technologically challenging. These challenges are particularly significant with newer aircraft programs. Any failure of any Boeing aircraft to satisfy performance or reliability requirements could result in disruption to our operations, higher costs and/or lower revenues.

Changes in levels of U.S. government defense spending or overall acquisition priorities could negatively impact our financial position and results of operations.

We derive a substantial portion of our revenue from the U.S. government, primarily from defense related programs with the U.S. DoD. Levels of U.S. defense spending are very difficult to predict and may be impacted by numerous factors such as the evolving nature of the national security threat, U.S. foreign policy, the domestic political environment, macroeconomic conditions and the ability of the U.S. government to enact relevant legislation such as authorization and appropriations bills.

The Bipartisan Budget Act of 2019 raised preexisting spending limits on federal discretionary defense and non-defense spending for fiscal years 2020 and 2021 (FY20 and FY21), reducing budget uncertainty and the risk of sequestration. Although FY20 appropriations have been enacted and FY21 topline funding levels have been agreed to, the timeliness of FY21 and future appropriations for government departments and agencies remains a recurrent risk. A lapse in appropriations for government department or agencies would result in a full or partial government shutdown, which could impact the Company's operations. Alternatively, Congress may fund government departments and agencies with one or more Continuing Resolutions; however, this could restrict the execution of certain program activities and delay new programs or competitions. In addition, long-term uncertainty remains with respect to overall levels of defense spending beyond FY21 and it is likely that the U.S. government discretionary spending levels will continue to be subject to pressure.

In addition, there continues to be uncertainty with respect to future acquisition priorities and program-level appropriations for the U.S. DoD and other government agencies (including NASA), including tension between modernization and sustainment investments, within the overall budgetary framework described above. Future budget cuts or investment priority changes, including changes associated with the authorizations and appropriations process could result in reductions, cancellations, and/or delays of existing contracts or programs. Any of these impacts could have a material effect on the results of the Company's operations, financial position and/or cash flows.

In addition, as a result of the significant ongoing uncertainty with respect to both U.S. defense spending levels and the nature of the threat environment, we also expect the U.S. DoD to continue to emphasize affordability, innovation, cybersecurity, and delivery of technical data and software in its procurement processes. If we can no longer adjust successfully to these changing acquisition policies our revenues and market share could be impacted.

Item 6. Selected Financial Data

Five-Year Summary (Unaudited)

(Dollars in millions, except per share data)

	2019	2018	2017	2016	2015 ⁽²⁾
Revenues	\$76,559	\$101,127	\$94,005	\$93,496	\$96,114
Net (loss)/earnings	(\$636)	\$10,460	\$8,458	\$5,034	\$5,176
Basic (loss)/earnings per share	(\$1.12)	\$18.05	\$14.03	\$7.92	\$7.52
Diluted (loss)/earnings per share	(1.12)	17.85	13.85	7.83	7.44
Dividends declared per share ⁽¹⁾	8.22	7.19	5.97	4.69	3.82
Cash and cash equivalents	\$9,485	\$7,637	\$8,813	\$8,801	\$11,302
Short-term and other investments	545	927	1,179	1,228	750
Total assets	133,625	117,359	112,362	109,076	94,408
Total debt	27,302	13,847	11,117	9,952	9,964
Operating cash flow	(\$2,446)	\$15,322	\$13,346	\$10,496	\$9,363
Total backlog	\$463,403	\$490,481	\$474,640	\$473,492 ⁽²⁾	\$489,299
Year-end workforce	161,100	153,000	140,800	150,500	161,400

⁽¹⁾ Cash dividends have been paid on common stock every year since 1942.

⁽²⁾ Amounts prior to 2016, along with 2016 Backlog, do not reflect impact of the adoption of ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606); ASU No. 2017-07, Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost; ASU 2016-18 Statement of Cash Flows (Topic 230) Restricted Cash; in the first quarter of 2018.

Program Accounting

Program accounting requires the demonstrated ability to reliably estimate the relationship of sales to costs for the defined program accounting quantity. A program consists of the estimated number of units (accounting quantity) of a product to be produced in a continuing, long-term production effort for delivery under existing and anticipated contracts. The determination of the accounting quantity is limited by the ability to make reasonably dependable estimates of the revenue and cost of existing and anticipated contracts. For each program, the amount reported as cost of sales is determined by applying the estimated cost of sales percentage for the total remaining program to the amount of sales recognized for airplanes delivered and accepted by the customer.

Factors that must be estimated include program accounting quantity, sales price, labor and employee benefit costs, material costs, procured part costs, major component costs, overhead costs, program tooling and other non-recurring costs, and warranty costs. Estimation of the accounting quantity for each program takes into account several factors that are indicative of the demand for the particular program, such as firm orders, letters of intent from prospective customers, and market studies. Total estimated program sales are determined by estimating the model mix and sales price for all unsold units within the accounting quantity, added together with the sales prices for all undelivered units under contract. The sales prices for all undelivered units within the accounting quantity include an escalation adjustment for inflation that is updated quarterly. Cost estimates are based largely on negotiated and anticipated contracts with suppliers, historical performance trends, and business base and other economic projections. Factors that influence these estimates include production rates, internal and subcontractor performance trends, customer and/or supplier claims or assertions, asset utilization, anticipated labor agreements, and inflationary or deflationary trends.

To ensure reliability in our estimates, we employ a rigorous estimating process that is reviewed and updated on a quarterly basis. Changes in estimates are normally recognized on a prospective basis; however, when estimated costs to complete a program exceed estimated revenues from undelivered units in the accounting quantity, a loss provision is recorded in the current period for the estimated loss on all undelivered units in the accounting quantity.

The program method of accounting allocates tooling and other non-recurring and production costs over the accounting quantity for each program. Because of the higher unit production costs experienced at the beginning of a new program and substantial investment required for initial tooling and other non-recurring costs, new commercial aircraft programs, such as the 777X program, typically have lower initial margins than established programs. In addition, actual costs incurred for earlier units in excess of the estimated average cost of all units in the program accounting quantity are included within program inventory as deferred production costs. Deferred production, unamortized tooling and other non-recurring costs are expected to be fully recovered when all units in the accounting quantity are delivered as the expected unit cost for later deliveries is below the estimated average cost as learning curve and other improvements are realized.

Due to the significance of judgment in the estimation process described above, it is reasonably possible that changes in underlying circumstances or assumptions could have a material effect on program gross margins. If the combined gross margin percentages for our commercial airplane programs had been estimated to be 1% higher or lower it would have an approximately \$400 million impact on operating earnings for the year ended December 31, 2019.

737 MAX Grounding

On March 13, 2019, the Federal Aviation Administration (FAA) issued an order to suspend operations of all 737 MAX aircraft in the U.S. and by U.S. aircraft operators following two fatal 737 MAX accidents. Non-U.S. civil aviation authorities have issued directives to the same effect. The grounding is having a significant adverse impact on our operations and creates significant uncertainty.

[Table of Contents](#)

Multiple legal actions have been filed against us as a result of the October 29, 2018 accident of Lion Air Flight 610 and the March 10, 2019 accident of Ethiopian Airlines Flight 302. Further, we are fully cooperating with all ongoing governmental and regulatory investigations and inquiries relating to the accidents and the 737 MAX, including investigations by the U.S. Department of Justice and the Securities and Exchange Commission. We cannot reasonably estimate a range of loss, if any, not covered by available insurance that may result given the ongoing status of these lawsuits, investigations, and inquiries. We have also experienced claims and/or assertions from customers and suppliers in connection with the grounding. As a result of the grounding, we reduced the 737 production rate from 52 per month to 42 per month in 2019 and in December 2019, we announced plans to temporarily suspend 737 production beginning in January 2020. We have concluded that the suspension of production and the gradual resumption of production at low production rates will result in abnormal production costs which will be expensed when incurred rather than inventoried. Prior to the grounding, we had planned to increase the production rate to 57 per month in 2019.

In the preparation of our financial statements, we have made assumptions regarding outcomes of accident investigations and other government inquiries, timing and conditions of return to service, the duration of the 737 MAX production suspension and timing of future 737 production rate increases, supplier readiness to support production rate changes, timing and sequence of future customer deliveries as well as outcomes of negotiations with customers impacted by the grounding. We have also made significant assumptions regarding estimated costs expected to be incurred in 2020 and 2021 that should be included in program inventory and those costs that should be expensed when incurred as abnormal production costs. While these assumptions reflect our best estimate at this time, they are highly uncertain and significantly affect the estimates inherent in our financial statements.

The FAA and other non-U.S. civil aviation authorities will determine the timing and conditions of the 737 MAX return to service in each relevant jurisdiction. We have assumed that regulatory approval of the 737 MAX will enable deliveries to resume during mid-2020. We have also assumed that, as a condition of return to service, regulators will require 737 MAX pilots to undergo computer and simulator training. We have assumed that we will resume 737 MAX aircraft production at low rates in 2020 as timing and conditions of return to service are better understood, and then we expect to gradually increase to previously planned production rates over the next few years. We are also assuming that 737 MAX airplanes produced during the grounding and included within inventory will be delivered over several quarters with the majority of them delivering during the first year after the resumption of deliveries. The cumulative impacts of changes to assumptions regarding timing of return to service and timing of planned production rates have increased the estimated costs to produce aircraft included in the current accounting quantity by approximately \$6.3 billion, which will be recorded in program inventory. In addition, the suspension of 737 MAX production and lower production rates is expected to result in approximately \$4.0 billion of abnormal production costs in 2020 and 2021 that will be expensed as incurred. The increases in the estimated costs accounted for as program inventory will reduce 737 program and overall BCA segment operating margins in future periods after deliveries resume. Production costs incurred while production is suspended and a portion of production costs incurred while we gradually increase production rates to a normal level will be expensed as incurred as abnormal costs and will not be included in program inventory. We may face additional costs, delays in regulatory approval of the 737 MAX and/or the resumption of deliveries, and/or further delays in planned production rate increases which may result in further increases in program costs and/or abnormal production costs.

We recorded an earnings charge and corresponding liability of \$6.1 billion, in the second quarter of 2019, in connection with an estimate of potential concessions and other considerations to customers for disruptions related to the 737 MAX grounding and associated delivery delays. The second quarter estimate of \$6.1 billion was updated in the third and fourth quarters of 2019. The remaining liability of \$7.4 billion at December 31, 2019 represents our current best estimate of future concessions and other considerations we expect to provide to customers. This estimate relies on the exercise of judgment by management and is significantly impacted by the assumptions described above, as well as the status of negotiations with

our customers. Any delays in our ability to resume deliveries, prolonged production suspension, further disruptions to our production system, supplier claims or assertions, or changes to estimated concessions and other considerations we expect to provide to customers could have a material adverse effect on our financial position, results of operations, and/or cash flows.

Goodwill and Indefinite-Lived Intangible Impairments

We test goodwill for impairment by performing a qualitative assessment or using a two-step impairment process. If we choose to perform a qualitative assessment, we evaluate economic, industry and company-specific factors as an initial step in assessing the fair value of operations. If we determine it is more likely than not that the carrying value of the net assets is more than the fair value of the related operations, the two-step impairment process is then performed; otherwise, no further testing is required. For operations where the two-step impairment process is used, we first compare the book value of net assets to the fair value of the related operations. If the fair value is determined to be less than book value, a second step is performed to compute the amount of the impairment. In this process, a fair value for goodwill is estimated, based in part on the fair value of the operations, and is compared to its carrying value. The shortfall of the fair value below carrying value represents the amount of goodwill impairment.

We estimate the fair values of the related operations using discounted cash flows. Forecasts of future cash flows are based on our best estimate of future sales and operating costs, based primarily on existing firm orders, expected future orders, contracts with suppliers, labor agreements and general market conditions. Changes in these forecasts could significantly change the amount of impairment recorded, if any.

The cash flow forecasts are adjusted by an appropriate discount rate derived from our market capitalization plus a suitable control premium at the date of evaluation. Therefore, changes in the stock price may also affect the amount of impairment recorded, if any.

We completed our assessment of goodwill as of April 1, 2019 and determined that there is no impairment of goodwill. As of December 31, 2019, we estimated that the fair value of each reporting unit significantly exceeded its corresponding carrying value. Changes in our forecasts, or decreases in the value of our common stock could cause book values of certain operations to exceed their fair values which may result in goodwill impairment charges in future periods.

As of December 31, 2018, we had \$490 million of indefinite-lived intangible assets related to the Jeppesen and Aviall brand and trade names acquired in business combinations. During 2019, we changed the name of the Aviall business to Boeing Distribution Inc. and, in the fourth quarter, decided to retire the Aviall brand and trade name. As a result we recorded an earnings charge of \$293 million to write-off the Aviall indefinite-lived intangible asset. Accordingly, as of December 31, 2019, we had an indefinite-lived intangible asset with a carrying value of \$197 million related to the Jeppesen brand and trade name.

We test these intangibles for impairment by comparing their carrying value to current projections of discounted cash flows attributable to the brand and trade names. Any excess carrying value over the amount of discounted cash flows represents the amount of the impairment. A 10% decrease in the discounted cash flows would not impact the carrying value of the Jeppesen indefinite-lived intangible asset.

[Table of Contents](#)

Payments due under operating leases net of sublease amounts and non-cancellable future rentals under ASC 840 as of December 31, 2018 were as follows:

	Operating leases
2019	\$272
2020	232
2021	194
2022	165
2023	126
Thereafter	849
Total lease payments	\$1,838

Note 14 – Liabilities, Commitments and Contingencies**Accrued Liabilities**

Accrued liabilities at December 31 consisted of the following:

	2019	2018
Accrued compensation and employee benefit costs	\$5,582	\$6,841
737 MAX customer concessions and other considerations	7,389	
Environmental	570	555
Product warranties	1,267	1,127
Forward loss recognition	1,681	1,488
Dividends payable	1,159	1,160
Income taxes payable	670	485
Other	4,550	3,152
Total	\$22,868	\$14,808

737 MAX Grounding

On March 13, 2019, the Federal Aviation Administration (FAA) issued an order to suspend operations of all 737 MAX aircraft in the U.S. and by U.S. aircraft operators following two fatal 737 MAX accidents. Non-U.S. civil aviation authorities have issued directives to the same effect. Deliveries of the 737 MAX have been suspended until clearance is granted by the appropriate regulatory authorities. In addition, multiple legal actions have been filed against us as a result of the accidents. We also are fully cooperating with U.S. government investigations related to the accidents and the 737 MAX program, including investigations by the U.S. Department of Justice and the Securities and Exchange Commission. We cannot reasonably estimate a range of loss, if any, not covered by available insurance that may result given the ongoing status of these law suits, investigations and inquiries.

We have developed software and pilot training updates for the 737 MAX and continue to work with the FAA and non-U.S. civil aviation authorities to complete remaining steps toward certification and readiness for return to service including addressing their questions on the software updates and how pilots will interact with the airplane controls and displays in different flight scenarios. We have assumed that computer and simulator training will be required and as a result, we have provisioned for certain training costs.

[Table of Contents](#)

Prior to the grounding, the 737 production rate was 52 per month and we had planned to increase the rate to 57 per month during 2019. Beginning in the second quarter of 2019, we reduced the production rate to 42 per month. We have continued to produce at a rate of 42 per month through December 2019, which has resulted in approximately 400 airplanes in inventory as of December 31, 2019. In December 2019, we announced the temporary suspension of 737 MAX production beginning in January 2020 due to a number of factors, including the 737 MAX grounding continuing longer than expected, our decision to prioritize delivery of stored aircraft, and uncertainty about the timing and conditions of return to service and global training approvals. We have assumed that we will resume 737 MAX aircraft production at low rates in 2020 as timing and conditions of return to service are better understood, and then we expect to gradually increase to previously planned production rates over the next few years. We have assumed that regulatory approval will enable 737 MAX deliveries to resume during mid-2020. The cumulative impacts of changes to assumptions regarding timing of return to service and timing of planned production rates and deliveries have increased the estimated costs to produce and deliver aircraft included in the current accounting quantity by approximately \$6,300, which will be recorded in program inventory. This will result in lower 737 program margins in future periods after deliveries resume. In addition, the suspension of 737 MAX production and abnormally low production rates once production resumes will result in approximately \$4,000 of abnormal production costs during 2020 and 2021 that will be expensed as incurred.

We are working with our customers to minimize the impact to their operations from grounded and undelivered aircraft. During the second quarter of 2019, we recorded an earnings charge (reduction in revenue) and a corresponding liability of \$6,110 in connection with estimated potential concessions and other considerations to customers for disruptions related to the 737 MAX grounding and associated delivery delays. We have insurance coverage for up to \$500 of costs arising due to grounded aircraft and have received \$500 from our insurance carriers, which partially offset the earnings charges. We continue to reassess the liability for estimated potential concessions and other considerations to customers on a quarterly basis, and in the third and fourth quarters of 2019, we recorded additional charges totaling \$2,649. This reassessment includes updating estimates to reflect revised return to service and updated delivery and production rate assumptions, as well as latest information based on engagements with 737 MAX customers. The liability represents our current best estimate of future concessions and other considerations to customers, and is necessarily based on a series of assumptions.

The following table summarizes changes in the 737 MAX customer concessions and other considerations liability during 2019.

	2019
Beginning balance – January 1	
Initial liability recorded in the second quarter of 2019	\$6,110
Reductions for payments made	(1,237)
Reductions for concessions and other in-kind considerations	(133)
Changes in estimates	2,649
Ending balance – December 31	\$7,389

We have also recorded additional expenses of \$328 as a result of the 737 MAX grounding. These expenses include costs related to storage, pilot training and software updates.

The FAA and other non-U.S. civil aviation authorities will determine the timing and conditions of return to service. Our assumptions reflect our current best estimate, but actual timing and conditions of return to service and resumption of deliveries could differ from this estimate, the effect of which could be material. We are unable at this time to reasonably estimate potential future additional financial impacts or a range of loss, if any, due to continued uncertainties related to the timing and conditions of return to service, future changes to the production rate, supply chain impacts or the results of negotiations with particular customers. Any such impacts, including any changes in our estimates, could have a material adverse effect on our

[Table of Contents](#)

financial position, results of operations, and/or cash flows. For example, we expect that, in the event that we are unable to resume aircraft deliveries consistent with our assumptions, the continued absence of revenue, earnings, and cash flows associated with 737 MAX deliveries would continue to have the most material impact on our operating results. In the event that future production rate increases occur at a slower rate or take longer than we are currently assuming we expect that the growth in inventory and other cash flow impacts associated with production would decrease. However, while any prolonged production suspension or delays in planned production rate increases could mitigate the impact on our liquidity it could significantly increase the overall expected costs to produce aircraft included in the accounting quantity, which would reduce 737 program margins and/or increase abnormal production costs in the future.

737NG Structure (Pickle Fork)

During the third quarter of 2019, we detected cracks in the "pickle forks," a component of the structure connecting the wings to the fuselages, of three 737-800NGs we were converting into freighters. We notified the FAA, which issued a directive requiring that 737NG airplanes with over 30,000 flight cycles be inspected for this condition by October 10, 2019, and that airplanes with over 22,600 flight cycles be inspected over the next 1,000 flight cycles. To date, all airplanes with over 30,000 flight cycles and approximately half of the airplanes with over 22,600 flights cycles have been inspected and this condition has been found on a small percentage of aircraft, and those aircraft will be repaired. A small percentage of airplanes with fewer than 22,600 flight cycles have also been inspected. We have estimated the number of aircraft that will have to be repaired in the future and provisioned for the estimated costs of completing the repairs. We recognized charges of \$135 in 2019 for current and projected future aircraft repairs. However, we cannot estimate a range of reasonably possible losses, if any, in excess of amounts recognized due to the ongoing nature of the inspections and repairs and pending the completion of investigations into the cause of the condition.

Environmental

The following table summarizes environmental remediation activity during the years ended December 31, 2019 and 2018.

	2019	2018
Beginning balance – January 1	\$555	\$524
Reductions for payments made	(47)	(37)
Changes in estimates	62	68
Ending balance – December 31	\$570	\$555

The liabilities recorded represent our best estimate or the low end of a range of reasonably possible costs expected to be incurred to remediate sites, including operation and maintenance over periods of up to 30 years. It is reasonably possible that we may incur charges that exceed these recorded amounts because of regulatory agency orders and directives, changes in laws and/or regulations, higher than expected costs and/or the discovery of new or additional contamination. As part of our estimating process, we develop a range of reasonably possible alternate scenarios that includes the high end of a range of reasonably possible cost estimates for all remediation sites for which we have sufficient information based on our experience and existing laws and regulations. There are some potential remediation obligations where the costs of remediation cannot be reasonably estimated. At December 31, 2019 and 2018, the high end of the estimated range of reasonably possible remediation costs exceeded our recorded liabilities by \$1,077 and \$796.