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

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended January 1, 2022

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 1-05129

MOOG Inc.

(Exact name of registrant as specified in its charter)

New York	**16-0757636**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
400 Jamison Road East Aurora, New York	**14052-0018**
(Address of Principal Executive Offices)	(Zip Code)

(716) 652-2000
Registrant's telephone number, including area code

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A common stock	MOG.A	New York Stock Exchange
Class B common stock	MOG.B	New York Stock Exchange

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 and posted 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 whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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 Act).
Yes ☐ No ☒

The number of shares outstanding of each class of common stock as of January 24, 2022 was:
Class A common stock, 29,052,366 shares
Class B common stock, 2,949,965 shares

MOOG Inc.

QUARTERLY REPORT ON FORM 10-Q
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PART I FINANCIAL INFORMATION
Item 1. Financial Statements

MOOG Inc.

Consolidated Condensed Statements of Earnings
(Unaudited)

(dollars in thousands, except share and per share data)	Three Months Ended January 1, 2022	Three Months Ended January 2, 2021
Net sales	$ 724,086	$ 683,954
Cost of sales	529,706	494,311
Inventory write-down	1,500	—
Gross profit	192,880	189,643
Research and development	27,708	28,008
Selling, general and administrative	111,797	99,603
Interest	7,982	8,420
(Gain) loss on sale of business	(16,146)	—
Other	116	3,241
Earnings before income taxes	61,423	50,371
Income taxes	15,158	12,529
Net earnings	$ 46,265	$ 37,842
Net earnings per share		
Basic	$ 1.44	$ 1.18
Diluted	$ 1.44	$ 1.17
Average common shares outstanding		
Basic	32,057,399	32,074,873
Diluted	32,188,158	32,237,212

See accompanying Notes to Consolidated Condensed Financial Statements.

MOOG Inc.

Consolidated Condensed Statements of Comprehensive Income
(Unaudited)

	Three Months Ended	
(dollars in thousands)	January 1, 2022	January 2, 2021
Net earnings	$ 46,265	$ 37,842
Other comprehensive income (loss) ("OCI"), net of tax:		
Foreign currency translation adjustment	(6,560)	33,497
Retirement liability adjustment	4,090	1,596
Change in accumulated income on derivatives	135	98
Other comprehensive income (loss), net of tax	(2,335)	35,191
Comprehensive income	$ 43,930	$ 73,033

See accompanying Notes to Consolidated Condensed Financial Statements.

MOOG Inc.

Consolidated Condensed Balance Sheets
(Unaudited)

(dollars in thousands)	January 1, 2022	October 2, 2021
ASSETS		
Current assets		
Cash and cash equivalents	$ 105,205	$ 99,599
Restricted cash	1,521	1,315
Receivables, net	891,588	945,929
Inventories, net	597,444	613,095
Prepaid expenses and other current assets	63,711	58,842
Total current assets	1,659,469	1,718,780
Property, plant and equipment, net	663,498	645,778
Operating lease right-of-use assets	62,657	60,355
Goodwill	842,042	851,605
Intangible assets, net	102,220	106,095
Deferred income taxes	18,239	17,769
Other assets	36,480	32,787
Total assets	$ 3,384,605	$ 3,433,169
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities		
Current installments of long-term debt	$ 367	$ 80,365
Accounts payable	178,158	200,602
Accrued compensation	90,965	112,703
Contract advances	367,873	263,686
Accrued liabilities and other	207,375	212,005
Total current liabilities	844,738	869,361
Long-term debt, excluding current installments	775,262	823,355
Long-term pension and retirement obligations	161,285	162,728
Deferred income taxes	74,352	64,642
Other long-term liabilities	104,545	112,939
Total liabilities	1,960,182	2,033,025
Shareholders' equity		
Common stock - Class A	43,803	43,803
Common stock - Class B	7,477	7,477
Additional paid-in capital	518,857	509,622
Retained earnings	2,276,082	2,237,848
Treasury shares	(1,023,086)	(1,007,506)
Stock Employee Compensation Trust	(82,721)	(79,776)
Supplemental Retirement Plan Trust	(66,094)	(63,764)
Accumulated other comprehensive loss	(249,895)	(247,560)
Total shareholders' equity	1,424,423	1,400,144
Total liabilities and shareholders' equity	$ 3,384,605	$ 3,433,169

See accompanying Notes to Consolidated Condensed Financial Statements.

MOOG Inc.

Consolidated Condensed Statements of Shareholders' Equity

(Unaudited)

	Three Months Ended	
(dollars in thousands)	January 1, 2022	January 2, 2021
COMMON STOCK		
Beginning and end of period	$ 51,280	$ 51,280
ADDITIONAL PAID-IN CAPITAL		
Beginning of period	509,622	472,645
Issuance of treasury shares	1,755	3,118
Equity-based compensation expense	2,405	2,412
Adjustment to market - SECT and SERP	5,075	26,863
End of period	518,857	505,038
RETAINED EARNINGS		
Beginning of period	2,237,848	2,112,734
Net earnings	46,265	37,842
Dividends [(1)]	(8,031)	(8,010)
End of period	2,276,082	2,142,566
TREASURY SHARES AT COST		
Beginning of period	(1,007,506)	(990,783)
Class A and B shares issued related to compensation	1,077	850
Class A and B shares purchased	(16,657)	(10,862)
End of period	(1,023,086)	(1,000,795)
STOCK EMPLOYEE COMPENSATION TRUST ("SECT")		
Beginning of period	(79,776)	(64,242)
Issuance of shares	2,075	274
Purchase of shares	(2,275)	(655)
Adjustment to market	(2,745)	(13,974)
End of period	(82,721)	(78,597)
SUPPLEMENTAL RETIREMENT PLAN ("SERP") TRUST		
Beginning of period	(63,764)	(53,098)
Adjustment to market	(2,330)	(12,888)
End of period	(66,094)	(65,986)
ACCUMULATED OTHER COMPREHENSIVE LOSS		
Beginning of period	(247,560)	(285,453)
Other comprehensive income (loss)	(2,335)	35,191
End of period	(249,895)	(250,262)
TOTAL SHAREHOLDERS' EQUITY	$ 1,424,423	$ 1,303,244

See accompanying Notes to Consolidated Condensed Financial Statements.

[(1)] Cash dividends were $0.25 per share for three months ended January 1, 2022 and January 2, 2021, respectively.

MOOG Inc.

Consolidated Condensed Statements of Shareholders' Equity, Shares

(Unaudited)

(share data)	Three Months Ended January 1, 2022	Three Months Ended January 2, 2021
COMMON STOCK - CLASS A		
Beginning of period	43,803,236	43,799,229
Conversion of Class B to Class A	—	3,000
End of period	43,803,236	43,802,229
COMMON STOCK - CLASS B		
Beginning of period	7,476,477	7,480,484
Conversion of Class B to Class A	—	(3,000)
End of period	7,476,477	7,477,484
TREASURY SHARES - CLASS A COMMON STOCK		
Beginning of period	(14,157,721)	(13,959,998)
Class A shares issued related to compensation	22,042	14,452
Class A shares purchased	(190,439)	(72,575)
End of period	(14,326,118)	(14,018,121)
TREASURY SHARES - CLASS B COMMON STOCK		
Beginning of period	(3,179,055)	(3,344,877)
Class B shares issued related to compensation	58,338	71,059
Class B shares purchased	(33,550)	(92,861)
End of period	(3,154,267)	(3,366,679)
SECT - CLASS A COMMON STOCK		
Beginning and end of period	(425,148)	(425,148)
SECT - CLASS B COMMON STOCK		
Beginning of period	(600,880)	(557,543)
Issuance of shares	25,000	4,135
Purchase of shares	(27,827)	(8,543)
End of period	(603,707)	(561,951)
SERP - CLASS B COMMON STOCK		
Beginning and end of period	(826,170)	(826,170)

See accompanying Notes to Consolidated Condensed Financial Statements.

MOOG Inc.

Consolidated Condensed Statements of Cash Flows
(Unaudited)

	Three Months Ended	
(dollars in thousands)	January 1, 2022	January 2, 2021
CASH FLOWS FROM OPERATING ACTIVITIES		
Net earnings	$ 46,265	$ 37,842
Adjustments to reconcile net earnings to net cash provided by operating activities:		
Depreciation	19,290	18,647
Amortization	3,402	2,841
Deferred income taxes	7,895	(139)
Equity-based compensation expense	2,658	2,502
(Gain) loss on sale of business	(16,146)	—
Inventory write-down	1,500	—
Other	699	1,544
Changes in assets and liabilities providing (using) cash:		
Receivables	38,941	3,664
Inventories	7,179	(4,058)
Accounts payable	(20,833)	(7,510)
Contract advances	105,548	29,712
Accrued expenses	(26,914)	6,989
Accrued income taxes	5,173	8,831
Net pension and post retirement liabilities	4,501	5,022
Other assets and liabilities	(21,973)	(11,792)
Net cash provided by operating activities	157,185	94,095
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of businesses, net of cash acquired	—	(77,708)
Purchase of property, plant and equipment	(37,059)	(20,309)
Other investing transactions	37,336	1,604
Net cash provided (used) by investing activities	277	(96,413)
CASH FLOWS FROM FINANCING ACTIVITIES		
Proceeds from revolving lines of credit	215,200	271,700
Payments on revolving lines of credit	(263,476)	(235,700)
Proceeds from long-term debt	—	25,100
Payments on long-term debt	(80,060)	(27,586)
Payments on finance lease obligations	(505)	(488)
Payment of dividends	(8,031)	(8,010)
Proceeds from sale of treasury stock	2,144	—
Purchase of outstanding shares for treasury	(16,657)	(11,674)
Proceeds from sale of stock held by SECT	2,075	274
Purchase of stock held by SECT	(2,275)	(655)
Net cash provided (used) by financing activities	(151,585)	12,961
Effect of exchange rate changes on cash	(65)	2,619
Increase in cash, cash equivalents and restricted cash	5,812	13,262
Cash, cash equivalents and restricted cash at beginning of period	100,914	85,072
Cash, cash equivalents and restricted cash at end of period	$ 106,726	$ 98,334
SUPPLEMENTAL CASH FLOW INFORMATION		
Treasury shares issued as compensation	$ 688	$ 3,967
Equipment and property acquired through lease financing	8,755	3,081

See accompanying Notes to Consolidated Condensed Financial Statements.

MOOG Inc.

Notes to Consolidated Condensed Financial Statements
Three Months Ended January 1, 2022
(Unaudited)
(dollars in thousands, except per share data)

Note 1 - Basis of Presentation

The accompanying unaudited consolidated condensed financial statements have been prepared by management in accordance with U.S. generally accepted accounting principles for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. In the opinion of management, all adjustments consisting of normal recurring adjustments considered necessary for the fair presentation of results for the interim period have been included. The results of operations for the three months ended January 1, 2022 are not necessarily indicative of the results expected for the full year. The accompanying unaudited consolidated condensed financial statements should be read in conjunction with the financial statements and notes thereto included in our Form 10-K for the fiscal year ended October 2, 2021. All references to years in these financial statements are to fiscal years.

COVID-19 Impacts On Our Business

The spread of the COVID-19 outbreak has disrupted businesses on a global scale. On March 11, 2020, the World Health Organization classified the outbreak as a pandemic. As we entered this crisis, the Company established two clear priorities: first and foremost the health and safety of our employees and their families, and second, continuing to meet the needs of our customers and secure the financial well-being of the Company. Substantially all of our operations and production activities have, to-date, remained operational. COVID-19 is discussed in more detail throughout “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Recent Accounting Pronouncements Adopted

There have been no accounting pronouncements adopted for the three months ended January 1, 2022.

Recent Accounting Pronouncements Not Yet Adopted

We consider the applicability and impact of all Accounting Standard Updates (ASU). ASUs not listed were assessed and determined to be either not applicable, or had or are expected to have an immaterial impact on our financial statements and related disclosures.

Note 2 - Revenue from Contracts with Customers

We recognize revenue from contracts with customers using the five-step model prescribed in ASC 606. The first step is identifying the contract. The identification of a contract with a customer requires an assessment of each party's rights and obligations regarding the products or services to be transferred, including an evaluation of termination clauses and presently enforceable rights and obligations. Each party's rights and obligations and the associated terms and conditions are typically determined in purchase orders. For sales that are governed by master supply agreements under which provisions define specific program requirements, purchase orders are issued under these agreements to reflect presently enforceable rights and obligations for the units of products and services being purchased.

Contracts are sometimes modified to account for changes in contract specifications and requirements. When this occurs, we assess the modification as prescribed in ASC 606 and determine whether the existing contract needs to be modified (and revenue cumulatively caught up), whether the existing contract needs to be terminated and a new contract needs to be created, or whether the existing contract remains and a new contract needs to be created. This is determined based on the rights and obligations within the modification as well as the associated transaction price.

The next step is identifying the performance obligations. A performance obligation is a promise to transfer goods or services to a customer that is distinct in the context of the contract, as defined by ASC 606. We identify a performance obligation for each promise in a contract to transfer a distinct good or service to the customer. As part of our assessment, we consider all goods and/or services promised in the contract, regardless of whether they are explicitly stated or implied by customary business practices. The products and services in our contracts are typically not distinct from one another due to their complexity and reliance on each other or, in many cases, we provide a significant integration service. Accordingly, many of our contracts are accounted for as one performance obligation. In limited cases, our contracts have more than one distinct performance obligation, which occurs when we perform activities that are not highly complex or interrelated or involve different product life cycles. Warranties are provided on certain contracts, but do not typically provide for services beyond standard assurances and are therefore not distinct performance obligations under ASC 606.

The third step is determining the transaction price, which represents the amount of consideration we expect to be entitled to receive from a customer in exchange for providing the goods or services. There are times when this consideration is variable, for example a volume discount, and must be estimated. Sales, use, value-added, and excise taxes are excluded from the transaction price, where applicable.

The fourth step is allocating the transaction price. The transaction price must be allocated to the performance obligations identified in the contract based on relative stand-alone selling prices when available, or an estimate for each distinct good or service in the contract when standalone prices are not available. Our contracts with customers generally require payment under normal commercial terms after delivery. Payment terms are typically within 30 to 60 days of delivery. The timing of satisfaction of our performance obligations does not significantly vary from the typical timing of payment.

The final step is the recognition of revenue. We recognize revenue as the performance obligations are satisfied. ASC 606 provides guidance to help determine if we are satisfying the performance obligation at a point in time or over time. In determining when performance obligations are satisfied, we consider factors such as contract terms, payment terms and whether there is an alternative use of the product or service. In essence, we recognize revenue when, or as control of, the promised goods or services transfer to the customer.

Revenue is recognized either over time using an input method that uses costs incurred to date to measure progress toward completion ("cost-to-cost") method, or point in time method. The over-time method of revenue recognition is predominantly used in Aircraft Controls and Space and Defense Controls. We use this method for U.S. Government contracts and repair and overhaul arrangements as we are creating or enhancing assets that the customer controls as the assets are being created or enhanced. In addition, many of our large commercial contracts qualify for over-time accounting as our performance does not create an asset with an alternative use and we have an enforceable right to payment for performance completed to date. Our over-time contracts are primarily firm fixed price.

Revenue recognized at the point in time control is transferred to the customer is used most frequently in Industrial Systems. We use this method for commercial contracts in which the asset being created has an alternative use. We determine the point in time control transfers to the customer by weighing the five indicators provided by ASC 606 - the entity has a present right to payment; the customer has legal title; the customer has physical possession; the customer has significant risks and rewards of ownership; and the customer has accepted the asset. When control has transferred to the customer, profit is generated as cost of sales is recorded and as revenue is recognized. Inventory costs include all product manufacturing costs such as direct material, direct labor, other direct costs and indirect overhead cost allocations. Shipping and handling costs are considered costs to fulfill a contract and not considered performance obligations. They are included in cost of sales as incurred.

Revenue is recognized on contracts using the cost-to-cost method of accounting as work progresses toward completion as determined by the ratio of cumulative costs incurred to date to estimated total contract costs at completion, multiplied by the total estimated contract revenue, less cumulative revenue recognized in prior periods. We believe that cumulative costs incurred to date as a percentage of estimated total contract costs at completion is an appropriate measure of progress toward satisfaction of performance obligations as this measure most accurately depicts the progress of our work and transfer of control to our customers. Changes in estimates affecting sales, costs and profits are recognized in the period in which the change becomes known using the cumulative catch-up method of accounting, resulting in the cumulative effect of changes reflected in the period. Estimates are reviewed and updated quarterly for substantially all contracts. For the three months ended January 1, 2022 and January 2, 2021 we recognized additional revenue $10,978 and $1,882, respectively for adjustments made to performance obligations satisfied (or partially satisfied) in previous periods.

Contract costs include only allocable, allowable and reasonable costs which are included in cost of sales when incurred. For applicable U.S. Government contracts, contract costs are determined in accordance with the Federal Acquisition Regulations and the related Cost Accounting Standards. The nature of these costs includes development engineering costs and product manufacturing costs such as direct material, direct labor, other direct costs and indirect overhead costs. Contract profit is recorded as a result of the revenue recognized less costs incurred in any reporting period. Variable consideration and contract modifications, such as performance incentives, penalties, contract claims or change orders are considered in estimating revenues, costs and profits when they can be reliably estimated and realization is considered probable. Revenue recognized on contracts for unresolved claims or unapproved contract change orders was not material for the three months ended January 1, 2022.

As of January 1, 2022, we had contract reserves of $52,589. For contracts with anticipated losses at completion, a provision for the entire amount of the estimated remaining loss is charged against income in the period in which the loss becomes known. Contract losses are determined considering all direct and indirect contract costs, exclusive of any selling, general or administrative cost allocations that are treated as period expenses. Loss reserves are more common on firm fixed-price contracts that involve, to varying degrees, the design and development of new and unique controls or control systems to meet the customers’ specifications. In accordance with ASC 606, we calculate contract losses at the contract level, versus the performance obligation level. Recall reserves are recorded when additional work is needed on completed products for them to meet contract specifications. Contract-related loss reserves are recorded for the additional work needed on completed and delivered products in order for them to meet contract specifications.

Contract Assets and Liabilities

Unbilled receivables (contract assets) primarily represent revenues recognized for performance obligations that have been satisfied but for which amounts have not been billed. These are included as Receivables on the Consolidated Condensed Balance Sheets. Contract advances (contract liabilities) relate to payments received from customers in advance of the satisfaction of performance obligations for a contract. We do not consider contract advances to be significant financing components as the intent of these payments in advance are for reasons other than providing a significant financing benefit and are customary in our industry.

Total contract assets and contract liabilities are as follows:

	January 1, 2022	October 2, 2021
Unbilled receivables	$ 575,709	$ 546,764
Contract advances	367,873	263,686
Net contract assets	$ 207,836	$ 283,078

The increase in contract assets reflects the net impact of additional unbilled revenues recorded in excess of revenue recognized during the period. The increase in contract liabilities reflects the net impact of additional deferred revenues recorded in excess of revenue recognized during the period. For the three months ended January 1, 2022, we recognized $74,684 of revenue that was included in the contract liability balance at the beginning of the period.

Remaining Performance Obligations

As of January 1, 2022, the aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) was $4,800,000. We expect to recognize approximately 46% of that amount as sales over the next twelve months and the balance thereafter.

Disaggregation of Revenue

See Note 19, Segments, for disclosures related to disaggregation of revenue.

Note 3 - Acquisitions and Divestitures

Acquisitions

On December 18, 2020, we acquired Genesys Aerosystems Group, Inc. (Genesys), headquartered in Mineral Wells, Texas for a purchase price of $77,600, net of acquired cash. Genesys designs and manufactures a full suite of electronic flight instrument systems and autopilot solutions. This operation is included in our Aircraft Controls segment.

Divestitures

On December 3, 2021, we sold the assets of our Navigation Aids (NAVAIDS) business based in Salt Lake City, Utah previously included in our Aircraft Controls segment to Thales. We received proceeds at closing of $38,611, which are included in other investing transactions on the Consolidated Condensed Statements of Cash Flows and recorded a gain of $16,146, net of transaction costs. The sale is subject to customary post closing working capital and other adjustments, including amounts currently held in escrow.

In the first quarter of 2021, we sold a non-core business in our Aircraft Controls segment for $2,081 in net consideration in other investing transactions and recorded a loss of $442.

Note 4 - Receivables

Receivables consist of:

	January 1, 2022	October 2, 2021
Accounts receivable	$ 312,311	$ 395,674
Unbilled receivables	575,709	546,764
Other	7,560	7,842
Less allowance for credit losses	(3,992)	(4,351)
Receivables, net	$ 891,588	$ 945,929

On November 4, 2021, Moog Receivables LLC (the "Receivables Subsidiary"), a wholly owned bankruptcy remote special purpose subsidiary of Moog Inc. (the "Company"), as seller, the Company, as master servicer, Wells Fargo Bank, N.A., as administrative agent (the "Agent") and certain purchasers (collectively, the "Purchasers") entered into an Amended and Restated Receivables Purchase Agreement (the "RPA"). The RPA matures on November 4, 2024 and is subject to customary termination events related to transactions of this type.

Under the RPA, the Receivables Subsidiary may sell receivables to the Purchasers in amounts up to a $100,000 limit. The receivables will be sold to the Purchasers in consideration for the Purchasers making payments of cash, which is referred to as "capital" for purposes of the RPA, to the Receivables Subsidiary in accordance with the terms of the RPA. The Receivables Subsidiary may sell receivables to the Purchasers so long as certain conditions are satisfied, including that, at any date of determination, the aggregate capital paid to the Receivables Subsidiary does not exceed a "capital coverage amount", equal to an adjusted net receivables pool balance minus a required reserve. Each Purchaser's share of capital accrues yield at a floating rate plus an applicable margin.

The parties intend that the conveyance of receivables to the Agent, for the ratable benefit of the Purchasers will constitute a purchase and sale of receivables and not a pledge for security. The Receivables Subsidiary has guaranteed to each Purchaser and Agent the prompt payment of sold receivables, and to secure the prompt payment and performance of such guaranteed obligations, the Receivables Subsidiary has granted a security interest to the Agent, for the benefit of the Purchasers, in all assets of the Receivables Subsidiary. The assets of the Receivables Subsidiary are not available to pay our creditors or any affiliate thereof. In our capacity as master servicer under the RPA, we are responsible for administering and collecting receivables and have made customary representations, warranties, covenants and indemnities. We also provided a performance guarantee for the benefit of the Purchaser.

The proceeds of the RPA are classified as operating activities in our Consolidated Condensed Statement of Cash Flows and were used to pay off the outstanding balance of the Securitization Program. Cash received from collections of sold receivables is used by the Receivables Subsidiary to fund additional purchases of receivables on a revolving basis or to return all or any portion of outstanding capital of the Purchaser. Subsequent collections on the pledged receivables, which have not been sold, will be classified as operating cash flows at the time of collection. Total receivables sold and cash collections under the RPA were $132,769 and $43,198 for the three months ended January 1, 2022, respectively. The fair value of the sold receivables approximated book value due to their credit quality and short-term nature, and as a result, no gain or loss on sale of receivables was recorded.

As of January 1, 2022, the amount sold to the Purchasers was $89,571, which was derecognized from the Consolidated Condensed Balance Sheets. As collateral against sold receivables, the Receivables Subsidiary maintains a certain level of unsold receivables, which was $588,142 as of January 1, 2022.

Previously we securitized certain trade receivables in transactions that were accounted for as secured borrowings (the "Securitization Program"). We maintained a subordinated interest in a portion of the pool of trade receivables that were securitized. The retained interest, which is included in Receivables in the Consolidated Condensed Balance Sheets, is recorded at fair value, which approximates the total amount of the designated pool of accounts receivable. Refer to Note 9, Indebtedness, for additional disclosures related to the Securitization Program.

The allowance for credit losses is based on our assessment of the collectability of customer accounts. The allowance is determined by considering factors such as historical experience, credit quality, age of the accounts receivable, current economic conditions and reasonable forecasted financial information that may affect a customer’s ability to pay.

Note 5 - Inventories

Inventories, net of reserves, consist of:

	January 1, 2022	October 2, 2021
Raw materials and purchased parts	$ 226,000	$ 231,406
Work in progress	306,372	315,762
Finished goods	65,072	65,927
Inventories, net	$ 597,444	$ 613,095

There are no material inventoried costs relating to over-time contracts where revenue is accounted for using the cost-to-cost method of accounting as of January 1, 2022 and October 2, 2021.

Note 6 - Property, Plant and Equipment

Property, plant and equipment consists of:

	January 1, 2022	October 2, 2021
Land	$ 35,481	$ 35,762
Buildings and improvements	511,835	506,450
Machinery and equipment	809,185	791,984
Computer equipment and software	185,924	179,066
Property, plant and equipment, at cost	1,542,425	1,513,262
Less accumulated depreciation and amortization	(878,927)	(867,484)
Property, plant and equipment, net	$ 663,498	$ 645,778

Note 7 - Leases

We lease certain manufacturing facilities, office space and machinery and equipment globally. At inception we evaluate whether a contractual arrangement contains a lease. Specifically, we consider whether we control the underlying asset and have the right to obtain substantially all the economic benefits or outputs from the asset. If the contractual arrangement contains a lease, we then determine the classification of the lease, operating or finance, using the classification criteria described in ASC 842. We then determine the term of the lease based on terms and conditions of the contractual arrangement, including whether the options to extend or terminate the lease are reasonably certain to be exercised. We have elected to not separate lease components from non-lease components, such as common area maintenance charges and instead, account for the lease and non-lease components as a single component.

Our lease right-of-use ("ROU") assets represent our right to use an underlying asset for the lease term and our lease liabilities represent our obligation to make lease payments. Operating lease ROU assets are included in Operating lease right-of-use assets and operating lease liabilities are included in Accrued liabilities and other and Other long-term liabilities on the Consolidated Condensed Balance Sheets. Finance lease ROU assets are included in Property, plant and equipment and finance lease liabilities are included in Accrued liabilities and other and Other long-term liabilities on the Consolidated Condensed Balance Sheets. Operating lease cost is included in Cost of sales and Selling, general and administrative on the Consolidated Condensed Statements of Earnings. Finance lease cost is included in Cost of sales, Selling, general and administrative and Interest on the Consolidated Condensed Statements of Earnings.

The ROU assets and lease liabilities for both operating and finance leases are recognized as of the commencement date at the net present value of the fixed minimum lease payments over the term of the lease, using the discount rate described below. Variable lease payments are recorded in the period in which the obligation for the payment is incurred. Variable lease payments based on an index or rate are initially measured using the index or rate as of the commencement date of the lease and included in the fixed minimum lease payments. For short-term leases that have a term of 12 months or less as of the commencement date, we do not recognize a ROU asset or lease liability on our balance sheet; we recognize expense as the lease payments are made over the lease term.

The discount rate used to calculate the present value of our leases is the rate implicit in the lease. If the information necessary to determine the rate implicit in the lease is not available, we use our incremental borrowing rate for collateralized debt, which is determined using our credit rating and other information available as of the lease commencement date.

The components of lease expense were as follows:

	Three Months Ended	
	January 1, 2022	January 2, 2021
Operating lease cost	$ 6,940	$ 6,884
Finance lease cost:		
Amortization of right-of-use assets	$ 587	$ 494
Interest on lease liabilities	217	161
Total finance lease cost	$ 804	$ 655

Supplemental cash flow information related to leases was as follows:

	Three Months Ended	
	January 1, 2022	January 2, 2021
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flow for operating leases	$ 7,239	$ 7,058
Operating cash flow for finance leases	217	161
Financing cash flow for finance leases	505	488
Assets obtained in exchange for lease obligations:		
Operating leases	6,008	3,081
Finance leases	2,747	—

Supplemental balance sheet information related to leases was as follows:

	January 1, 2022	October 2, 2021
Operating Leases		
Operating lease right-of-use assets	$ 62,657	$ 60,355
Accrued liabilities and other	$ 14,037	$ 14,176
Other long-term liabilities	59,453	57,277
Total operating lease liabilities	$ 73,490	$ 71,453
Finance Leases		
Property, plant, and equipment, at cost	$ 22,514	$ 19,861
Accumulated depreciation	(3,891)	(3,375)
Property, plant, and equipment, net	$ 18,623	$ 16,486
Accrued liabilities and other	$ 2,347	$ 2,014
Other long-term liabilities	17,789	15,904
Total finance lease liabilities	$ 20,136	$ 17,918
Weighted average remaining lease term in years		
Operating leases	7.4	7.4
Finance leases	14.1	15.5
Weighted average discount rate		
Operating leases	4.6 %	4.7 %
Finance leases	4.8 %	5.0 %

Maturities of lease liabilities were as follows:

	January 1, 2022	
	Operating Leases	Finance Leases
2022	$ 13,091	$ 2,417
2023	14,840	3,180
2024	11,230	3,134
2025	9,234	2,946
2026	7,972	2,651
Thereafter	32,912	15,930
Total lease payments	89,279	30,258
Less: imputed interest	(15,789)	(10,122)
Total	$ 73,490	$ 20,136

Note 8 - Goodwill and Intangible Assets

The changes in the carrying amount of goodwill are as follows:

	Aircraft Controls	Space and Defense Controls	Industrial Systems	Total
Balance at October 2, 2021	$ 210,779	$ 261,767	$ 379,059	$ 851,605
Divestiture	(6,961)	—	—	(6,961)
Foreign currency translation	(48)	(1)	(2,553)	(2,602)
Balance at January 1, 2022	$ 203,770	$ 261,766	$ 376,506	$ 842,042

Goodwill in our Space and Defense Controls segment is net of a $4,800 accumulated impairment loss at January 1, 2022. Goodwill in our Medical Devices reporting unit, included in our Industrial Systems segment, is net of a $38,200 accumulated impairment loss at January 1, 2022.

The components of intangible assets are as follows:

		January 1, 2022		October 2, 2021	
	Weighted-Average Life (years)	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Customer-related	11	$ 162,552	$ (110,095)	$ 163,215	$ (108,844)
Technology-related	9	82,414	(58,963)	82,716	(58,119)
Program-related	23	40,186	(20,142)	40,211	(19,707)
Marketing-related	8	28,511	(22,481)	28,590	(22,212)
Other	10	1,929	(1,691)	1,963	(1,718)
Intangible assets	12	$ 315,592	$ (213,372)	$ 316,695	$ (210,600)

Substantially all acquired intangible assets other than goodwill are being amortized. Customer-related intangible assets primarily consist of customer relationships. Technology-related intangible assets primarily consist of technology, patents, intellectual property and software. Program-related intangible assets consist of long-term programs represented by current contracts and probable follow on work. Marketing-related intangible assets primarily consist of trademarks, trade names and non-compete agreements.

Amortization of acquired intangible assets is as follows:

	Three Months Ended	
	January 1, 2022	January 2, 2021
Acquired intangible asset amortization	$ 3,398	$ 2,833

Based on acquired intangible assets recorded at January 1, 2022, amortization is estimated to be approximately:

	2022	2023	2024	2025	2026
Estimated future amortization of acquired intangible assets	$ 13,500	$ 12,800	$ 12,000	$ 10,900	$ 10,700

Note 9 - Indebtedness

We maintain short-term line of credit facilities with banks throughout the world that are principally demand lines subject to revision by the banks.

Long-term debt consists of:

	January 1, 2022	October 2, 2021
U.S. revolving credit facility	$ 272,350	$ 321,886
SECT revolving credit facility	8,000	7,000
Senior notes 4.25%	500,000	500,000
Securitization program	—	80,000
Other long-term debt	1,221	1,280
Senior debt	781,571	910,166
Less deferred debt issuance cost	(5,942)	(6,446)
Less current installments	(367)	(80,365)
Long-term debt	$ 775,262	$ 823,355

Our U.S. revolving credit facility, which matures on October 15, 2024, has a capacity of $1,100,000 and provides an expansion option, which permits us to request an increase of up to $400,000 to the credit facility upon satisfaction of certain conditions. The credit facility is secured by substantially all of our U.S. assets. The loan agreement contains various covenants which, among others, specify interest coverage and maximum leverage. We are in compliance with all covenants.

The SECT has a revolving credit facility with a borrowing capacity of $35,000, maturing on July 26, 2024. Interest is based on LIBOR plus an applicable margin. A commitment fee is also charged based on a percentage of the unused amounts available and is not material.

At January 1, 2022, we had $500,000 aggregate principal amount of 4.25% senior notes due December 15, 2027 with interest paid semiannually on June 15 and December 15 of each year, which commenced on June 15, 2020. The senior notes are unsecured obligations, guaranteed on a senior unsecured basis by certain subsidiaries and contain normal incurrence-based covenants and limitations such as the ability to incur additional indebtedness, pay dividends, make other restricted payments and investments, create liens and certain corporate acts such as mergers and consolidations. The aggregate net proceeds were used to repay indebtedness under our U.S. revolving credit facility, thereby increasing the unused portion of our U.S. revolving credit facility.

The Securitization Program was extended on October 29, 2021, effectively increasing our borrowing capacity by up to $80,000. Under the Securitization Program, we sold certain trade receivables and related rights to an affiliate, which in turn sold an undivided variable percentage ownership interest in the trade receivables to a financial institution, while maintaining a subordinated interest in a portion of the pool of trade receivables. Interest for the Securitization Program was based on 30-day LIBOR plus an applicable margin. A commitment fee was also charged based on a percentage of the unused amounts available and was not material. The agreement governing the Securitization Program contained restrictions and covenants which included limitations on the making of certain restricted payments, creation of certain liens, and certain corporate acts such as mergers, consolidations and sale of substantially all assets. The Securitization Program had a minimum borrowing requirement equal to the lesser of either 80% of our borrowing capacity or 100% of our borrowing base, which was a subset of the trade receivables sold under this agreement. See Note 4, Receivables, for information related to the amended and restated RPA, which replaced the Securitization Program.

Note 10 - Other Accrued Liabilities

Other accrued liabilities consists of:

	January 1, 2022	October 2, 2021
Contract reserves	$ 52,589	$ 58,857
Employee benefits	62,938	54,146
Warranty accrual	25,026	26,602
Accrued income taxes	15,423	12,908
Other	51,399	59,492
Other accrued liabilities	$ 207,375	$ 212,005

In the ordinary course of business, we warrant our products against defects in design, materials and workmanship typically over periods ranging from twelve to sixty months. We determine warranty reserves needed by product line based on historical experience and current facts and circumstances. Activity in the warranty accrual is summarized as follows:

	Three Months Ended	
	January 1, 2022	January 2, 2021
Warranty accrual at beginning of period	$ 26,602	$ 27,707
Additions from acquisitions	—	990
Warranties issued during current period	565	4,064
Adjustments to pre-existing warranties	(24)	36
Reductions for settling warranties	(1,715)	(3,783)
Divestiture adjustment	(330)	—
Foreign currency translation	(72)	324
Warranty accrual at end of period	$ 25,026	$ 29,338

Note 11 - Derivative Financial Instruments

We principally use derivative financial instruments to manage foreign exchange risk related to foreign operations and foreign currency transactions and interest rate risk associated with long-term debt. We enter into derivative financial instruments with a number of major financial institutions to minimize counterparty credit risk.

Derivatives designated as hedging instruments

We use foreign currency contracts as cash flow hedges to effectively fix the exchange rates on future payments and revenue. To mitigate exposure in movements between various currencies, including the Philippine peso and the British pound, we had outstanding foreign currency contracts with notional amounts of $40,899 at January 1, 2022. These contracts mature at various times through September 1, 2023.

We use forward currency contracts to hedge our net investment in certain foreign subsidiaries. As of January 1, 2022, we had no outstanding net investment hedges.

Interest rate swaps are used to adjust the proportion of total debt that is subject to variable and fixed interest rates. The interest rate swaps are designated as hedges of the amount of future cash flows related to interest payments on variable-rate debt that, in combination with the interest payments on the debt, convert a portion of the variable-rate debt to fixed-rate debt. At January 1, 2022, we had no outstanding interest rate swaps.

Foreign currency contracts, net investment hedges and interest rate swaps are recorded in the Consolidated Condensed Balance Sheets at fair value and the related gains or losses are deferred in Shareholders' Equity as a component of Accumulated Other Comprehensive Income (AOCIL). These deferred gains and losses are reclassified into the Consolidated Condensed Statements of Earnings, as necessary, during the periods in which the related payments or receipts affect earnings. However, to the extent the foreign currency contracts and interest rate swaps are not perfectly effective in offsetting the change in the value of the payments and revenue being hedged, the ineffective portion of these contracts is recognized in earnings immediately. Ineffectiveness was not material in the first three months of 2022 or 2021.

Derivatives not designated as hedging instruments

We also have foreign currency exposure on balances, primarily intercompany, that are denominated in a foreign currency and are adjusted to current values using period-end exchange rates. The resulting gains or losses are recorded in the Consolidated Condensed Statements of Earnings. To minimize foreign currency exposure, we had foreign currency contracts with notional amounts of $137,171 at January 1, 2022. The foreign currency contracts are recorded in the Consolidated Condensed Balance Sheets at fair value and resulting gains or losses are recorded in the Consolidated Condensed Statements of Earnings. We recorded the following gains and losses on foreign currency contracts which are included in other income or expense and generally offset the gains or losses from the foreign currency adjustments on the intercompany balances that are also included in other income or expense:

		Three Months Ended	
	Statements of Earnings location	January 1, 2022	January 2, 2021
Net gain (loss)			
Foreign currency contracts	Other	$ (1,904)	$ 4,888

Summary of derivatives

The fair value and classification of derivatives is summarized as follows:

	Balance Sheets location	January 1, 2022	October 2, 2021
Derivatives designated as hedging instruments:			
Foreign currency contracts	Other current assets	$ 169	$ 325
Foreign currency contracts	Other assets	23	104
	Total asset derivatives	$ 192	$ 429
Foreign currency contracts	Accrued liabilities and other	$ 1,205	$ 1,235
Foreign currency contracts	Other long-term liabilities	355	537
	Total liability derivatives	$ 1,560	$ 1,772
Derivatives not designated as hedging instruments:			
Foreign currency contracts	Other current assets	$ 1,197	$ 226
Foreign currency contracts	Accrued liabilities and other	$ 327	$ 480

Note 12 - Fair Value

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Depending on the nature of the asset or liability, various techniques and assumptions can be used to estimate fair value. The definition of the fair value hierarchy is as follows:

Level 1 – Quoted prices in active markets for identical assets and liabilities.

Level 2 – Observable inputs other than quoted prices in active markets for similar assets and liabilities.

Level 3 – Inputs for which significant valuation assumptions are unobservable in a market and therefore value is based on the best available data, some of which is internally developed and considers risk premiums that a market participant would require.

Our derivatives are valued using various pricing models or discounted cash flow analyses that incorporate observable market data, such as interest rate yield curves and currency rates, and are classified as Level 2 within the valuation hierarchy.

The following table presents the fair values and classification of our financial assets and liabilities measured on a recurring basis, all of which are classified as Level 2.

	Balance Sheets location	January 1, 2022	October 2, 2021
Foreign currency contracts	Other current assets	$ 1,366	$ 551
Foreign currency contracts	Other assets	23	104
	Total assets	$ 1,389	$ 655
Foreign currency contracts	Accrued liabilities and other	$ 1,532	$ 1,715
Foreign currency contracts	Other long-term liabilities	355	537
	Total liabilities	$ 1,887	$ 2,252

Our only financial instrument for which the carrying value differs from its fair value is long-term debt. At January 1, 2022, the fair value of long-term debt was $782,417 compared to its carrying value of $781,571. The fair value of long-term debt is classified as Level 2 within the fair value hierarchy and was estimated based on quoted market prices.

Note 13 - Restructuring

In 2022, we initiated restructuring actions in relation to portfolio shaping activities, which resulted in a non-cash inventory reserve. Restructuring activity for severance and other costs by segment and reconciliation to consolidated amounts is as follows:

	Aircraft Controls	Space and Defense Controls	Industrial Systems	Total
Balance at October 2, 2021	$ 179	$ —	$ 5,486	$ 5,665
Charged to expense - 2022 plan	—	1,500	—	1,500
Non-cash charges - 2022 plan	—	(1,500)	—	(1,500)
Cash payments - 2018 plan	—	—	(105)	(105)
Cash payments - 2020 plan	—	—	(447)	(447)
Foreign currency translation	—	—	(14)	(14)
Balance at January 1, 2022	$ 179	$ —	$ 4,920	$ 5,099

As of January 1, 2022, the restructuring accrual consists of $3,174 for the 2020 plan and $1,924 for the 2018 plan. Restructuring is expected to be paid within a year, except portions classified as long-term liabilities based on the nature of the reserve.

Note 14 - Employee Benefit Plans

Pension expense for our defined contribution plans consists of:

	Three Months Ended	
	January 1, 2022	January 2, 2021
U.S. defined contribution plans	$ 10,545	$ 8,573
Non-U.S. defined contribution plans	2,152	1,594
Total expense for defined contribution plans	$ 12,697	$ 10,167

Net periodic benefit costs for our defined benefit pension plans are as follows:

	Three Months Ended	
	January 1, 2022	January 2, 2021
U.S. Plans		
Service cost	$ 4,957	$ 5,622
Interest cost	4,562	4,276
Expected return on plan assets	(7,451)	(7,636)
Amortization of actuarial loss	3,896	3,430
Expense for U.S. defined benefit plans	$ 5,964	$ 5,692
Non-U.S. Plans		
Service cost	$ 1,122	$ 1,668
Interest cost	634	705
Expected return on plan assets	(897)	(1,143)
Amortization of prior service cost (credit)	15	(2)
Amortization of actuarial loss	1,022	1,387
Expense for non-U.S. defined benefit plans	$ 1,896	$ 2,615

Note 15 - Income Taxes

The effective tax rate for the three months ended January 1, 2022 and January 2, 2021 was 24.7% and 24.9%, respectively. The effective tax rate for the three months ended January 1, 2022 is higher than expected from applying the U.S. federal statutory tax rate of 21% to earnings before income taxes due to tax on earnings generated outside the U.S.

Note 16 - Accumulated Other Comprehensive Income (Loss)

The changes in AOCIL, net of tax, by component for the three months ended January 1, 2022 are as follows:

	Accumulated foreign currency translation	Accumulated retirement liability	Accumulated gain (loss) on derivatives	Total
AOCIL at October 2, 2021	$ (92,989)	$ (153,210)	$ (1,361)	$ (247,560)
OCI before reclassifications	(6,510)	568	41	(5,901)
Amounts reclassified from AOCIL	(50)	3,522	94	3,566
OCI, net of tax	(6,560)	4,090	135	(2,335)
AOCIL at January 1, 2022	$ (99,549)	$ (149,120)	$ (1,226)	$ (249,895)

Net gains and losses on net investment hedges are recorded in Accumulated foreign currency translation to the extent that the instruments are effective in hedging the designated risk.

The amounts reclassified from AOCIL into earnings are as follows:

		Three Months Ended	
	Statements of Earnings location	January 1, 2022	January 2, 2021
Retirement liability:			
Prior service cost (credit)		$ 15	$ (2)
Actuarial losses		4,600	4,689
Reclassification from AOCIL into earnings		4,615	4,687
Tax effect		(1,093)	(1,118)
Net reclassification from AOCIL into earnings		$ 3,522	$ 3,569
Derivatives:			
Foreign currency contracts	Sales	$ 68	$ 28
Foreign currency contracts	Cost of sales	50	(557)
Reclassification from AOCIL into earnings		118	(529)
Tax effect		(24)	126
Net reclassification from AOCIL into earnings		$ 94	$ (403)

Reclassification from AOCIL into earnings for the Retirement liability are included in the computation of non-service pension expense, which is included in Other on the Consolidated Condensed Statement of Earnings.

The effective portion of amounts deferred in AOCIL are as follows:

	Three Months Ended	
	January 1, 2022	January 2, 2021
Foreign currency contracts	$ 55	$ 631
Net gain	55	631
Tax effect	(14)	(130)
Net deferral in AOCIL of derivatives	$ 41	$ 501

Note 17 - Stock Employee Compensation Trust and Supplemental Retirement Plan Trust

The SECT assists in administering and provides funding for equity-based compensation plans and benefit programs, including the Moog Inc. Retirement Savings Plan ("RSP") and the Employee Stock Purchase Plan ("ESPP"). SERP Trust provides funding for benefits under the SERP provisions of the Moog Inc. Plan to Equalize Retirement Income and Supplemental Retirement Income. Both the SECT and the SERP Trust hold Moog shares as investments. The shares in the SECT and SERP Trust are not considered outstanding for purposes of calculating earnings per share. However, in accordance with the trust agreements governing the SECT and SERP Trust, the trustees vote all shares held by the SECT and SERP Trust on all matters submitted to shareholders.

Note 18 - Earnings per Share

Basic and diluted weighted-average shares outstanding, as well as shares considered to be anti-dilutive, are as follows:

	Three Months Ended	
	January 1, 2022	January 2, 2021
Basic weighted-average shares outstanding	32,057,399	32,074,873
Dilutive effect of equity-based awards	130,759	162,339
Diluted weighted-average shares outstanding	32,188,158	32,237,212
Anti-dilutive shares from equity-based awards	62,350	91,918

Note 19 - Segment Information

Disaggregation of net sales by segment for the three months ended January 1, 2022 and January 2, 2021 are as follows:

Market Type	Three Months Ended January 1, 2022	Three Months Ended January 2, 2021
Net sales:		
Military	$ 185,949	$ 205,698
Commercial	117,368	81,076
Aircraft Controls	303,317	286,774
Space	87,583	77,811
Defense	120,273	110,351
Space and Defense Controls	207,856	188,162
Energy	31,466	28,644
Industrial Automation	102,143	95,231
Simulation and Test	22,175	20,126
Medical	57,129	65,017
Industrial Systems	212,913	209,018
Net sales	$ 724,086	$ 683,954

Customer Type	Three Months Ended January 1, 2022	Three Months Ended January 2, 2021
Net sales:		
Commercial	$ 117,368	$ 81,076
U.S. Government (including OEM)	143,879	156,677
Other	42,070	49,021
Aircraft Controls	303,317	286,774
Commercial	24,323	31,134
U.S. Government (including OEM)	170,015	138,172
Other	13,518	18,856
Space and Defense Controls	207,856	188,162
Commercial	207,235	201,953
U.S. Government (including OEM)	3,786	6,321
Other	1,892	744
Industrial Systems	212,913	209,018
Commercial	348,926	314,163
U.S. Government (including OEM)	317,680	301,170
Other	57,480	68,621
Net sales	$ 724,086	$ 683,954

Revenue Recognition Method	Three Months Ended January 1, 2022	Three Months Ended January 2, 2021
Net sales:		
Over-time	$ 246,649	$ 230,120
Point in time	56,668	56,654
Aircraft Controls	303,317	286,774
Over-time	192,446	174,311
Point in time	15,410	13,851
Space and Defense Controls	207,856	188,162
Over-time	29,025	27,734
Point in time	183,888	181,284
Industrial Systems	212,913	209,018
Over-time	468,120	432,165
Point in time	255,966	251,789
Net sales	$ 724,086	$ 683,954

Operating profit is net sales less cost of sales and other operating expenses, excluding interest expense, equity-based compensation expense, non-service pension expense and other corporate expenses. Cost of sales and other operating expenses are directly identifiable to the respective segment or allocated on the basis of sales, manpower or profit. Operating profit by segment for the three months ended January 1, 2022 and January 2, 2021 and a reconciliation of segment operating profit to earnings before income taxes are as follows:

	Three Months Ended	
	January 1, 2022	January 2, 2021
Operating profit:		
Aircraft Controls	$ 41,915	$ 27,922
Space and Defense Controls	21,299	23,046
Industrial Systems	17,191	19,898
Total operating profit	80,405	70,866
Deductions from operating profit:		
Interest expense	7,982	8,420
Equity-based compensation expense	2,658	2,502
Non-service pension expense	1,485	920
Corporate and other expenses, net	6,857	8,653
Earnings before income taxes	$ 61,423	$ 50,371

Note 20 - Related Party Transactions

John Scannell, Moog's Chairman of the Board of Directors and Chief Executive Officer, is a member of the Board of Directors of M&T Bank Corporation and M&T Bank. We currently engage with M&T Bank in the ordinary course of business for various financing activities, all of which were initiated prior to the election of Mr. Scannell to the Board. M&T Bank provides credit extension for routine purchases, which for the three months ended January 1, 2022 and January 2, 2021 totaled $3,643 and $3,429, respectively. At January 1, 2022, we held outstanding leases with a total original cost of $21,144. At January 1, 2022, outstanding deposits on our behalf for future equipment leases totaled $1,615. M&T Bank also maintains an interest of approximately 12% in our U.S. revolving credit facility. Further details of the U.S. revolving credit facility can be found in Note 9, Indebtedness. Wilmington Trust, a subsidiary of M&T Bank, is the trustee of the pension assets for our qualified U.S. defined benefit plan.

Note 21 - Commitments and Contingencies

From time to time, we are involved in legal proceedings. We are not a party to any pending legal proceedings which management believes will result in a material adverse effect on our financial condition, results of operations or cash flows.

We are engaged in administrative proceedings with governmental agencies and legal proceedings with governmental agencies and other third parties in the normal course of our business, including litigation under Superfund laws, regarding environmental matters. We believe that adequate reserves have been established for our share of the estimated cost for all currently pending environmental administrative or legal proceedings and do not expect that these environmental matters will have a material adverse effect on our financial condition, results of operations or cash flows.

In the ordinary course of business we could be subject to ongoing claims or disputes from our customers, the ultimate settlement of which could have a material adverse impact on our consolidated results of operations. While the receivables and any loss provisions recorded to date reflect management's best estimate of the projected costs to complete a given project, there is still significant effort required to complete the ultimate deliverable. Future variability in internal cost and future profitability is dependent upon a number of factors including deliveries, performance and government budgetary pressures. The inability to achieve a satisfactory contractual solution, further unplanned delays, additional developmental cost growth or variations in any of the estimates used in the existing contract analysis could lead to further loss provisions. Additional losses could have a material adverse impact on our financial condition, results of operations or cash flows in the period in which the loss may be recognized.

We are contingently liable for $30,769 of standby letters of credit issued by a bank to third parties on our behalf at January 1, 2022.

Note 22 - Subsequent Event

On January 27, 2022, we declared a $0.26 per share quarterly dividend payable on issued and outstanding shares of our Class A and Class B common stock on February 28, 2022 to shareholders of record at the close of business on February 11, 2022.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The following should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations contained in the Company's Annual Report filed on Form 10-K for the fiscal year ended October 2, 2021. In addition, the following should be read in conjunction with our Consolidated Financial Statements and Notes to Consolidated Condensed Financial Statements contained herein. All references to years in this Management's Discussion and Analysis of Financial Condition and Results of Operations are to fiscal years and amounts may differ from reported values due to rounding.

OVERVIEW

We are a worldwide designer, manufacturer and systems integrator of high performance precision motion and fluid controls and control systems for a broad range of applications in aerospace and defense and industrial markets.

Within the aerospace and defense market, our products and systems include:

- Defense market - primary and secondary flight controls for military aircraft, turreted weapon systems, stabilization and automatic ammunition loading controls for armored combat vehicles, tactical and strategic missile steering controls and gun aiming controls.
- Commercial aircraft market - primary and secondary flight controls for commercial aircraft.
- Commercial space market - satellite positioning controls and thrust vector controls, as well as integrated space launch vehicles.

In the industrial market, our products are used in a wide range of applications including:

- Industrial automation market - components and systems for injection and blow molding machinery, heavy industry applications for steel and aluminum production, metal forming presses, flight simulation motion control systems and material and automotive structural and fatigue testing systems.
- Medical market - components and systems for enteral clinical nutrition and infusion therapy pumps, CT scan medical equipment, ultrasonic sensors and surgical handpieces and sleep apnea equipment.
- Energy market - control and safety components for steam and gas power generation turbines and oil and gas exploration components and systems.

We operate under three segments, Aircraft Controls, Space and Defense Controls and Industrial Systems. Our principal manufacturing facilities are located in the United States, Philippines, United Kingdom, Germany, Czech Republic, Italy, Costa Rica, China, Netherlands, Luxembourg, Japan, Canada, India and Lithuania.

Under ASC 606, 65% of revenue was recognized over time for the quarter ended January 1, 2022, using the cost-to-cost method of accounting. The over-time method of revenue recognition is predominantly used in Aircraft Controls and Space and Defense Controls. We use this method for U.S. Government contracts and repair and overhaul arrangements as we are creating or enhancing assets that the customer controls. In addition, many of our large commercial contracts qualify for over-time accounting as our performance does not create an asset with an alternative use and we have an enforceable right to payment for performance completed to date.

For the quarter ended January 1, 2022, 35% of revenue was recognized at the point in time control transferred to the customer. This method of revenue recognition is used most frequently in Industrial Systems. We use this method for commercial contracts in which the asset being created has an alternative use. We determine the point in time control transfers to the customer by weighing the five indicators provided by ASC 606. When control has transferred to the customer, profit is generated as cost of sales is recorded and as revenue is recognized.

We concentrate on providing our customers with products designed and manufactured to the highest quality standards. Our technical experts work collaboratively around the world, delivering capabilities for mission-critical solutions. These core operational principles are necessary as our products are applied in demanding applications, "When Performance Really Matters®." By capitalizing on these core foundational strengths, we believe we have achieved a leadership position in the high performance, precision controls market. Additionally, these strengths yield a broad control product portfolio, across a diverse base of customers and end markets.

By focusing on customer intimacy and commitment to solving our customers' most demanding technical problems, we have been able to expand our control product franchise to multiple markets; organically growing from a high-performance components manufacturer to a high-performance systems designer, manufacturer and systems integrator. In addition, we continue expanding our content positions on our current platforms, seeking to be the market-leading supplier in the niche markets we serve. We also look for innovation in all aspects of our business, employing new technologies to improve productivity and operational performance.

Our fundamental long-term strategies to achieve our goals center around talent, lean and innovation and include:

- a strong leadership team that has positioned the Company for growth,
- utilizing our global capabilities and strong engineering heritage to innovate,
- maintaining our technological excellence by solving our customers' most demanding technical problems in applications "When Performance Really Matters®,"
- continuing to invest in talent development to strengthen employee performance, and
- maximizing customer value by implementing lean enterprise principles.

These activities will help us achieve our financial objective of increasing shareholder value with sustainable competitive advantages across our segments. In doing so, we expect to maintain a balanced, diversified portfolio in terms of markets served, product applications, customer bases and geographic presence.

We focus on improving shareholder value through strategic revenue growth, both organic and acquired, through improving operating efficiencies and manufacturing initiatives and through utilizing low cost manufacturing facilities without compromising quality. Historically, we have taken a balanced approach to capital deployment in order to maximize shareholder returns over the long-term. These activities have included strategic acquisitions, share buybacks and dividend payments. We are well positioned to invest in our business and by accelerating the pace of internal investments, both in terms of capital expenditures as well as investments in new market opportunities, we believe we can create more long term value for our shareholders. We also will continue to explore opportunities to make strategic acquisitions and return capital to shareholders.

Acquisitions and Divestitures

All of our acquisitions are accounted for under the purchase method and, accordingly, the operating results for the acquired companies are included in the Consolidated Condensed Statements of Earnings from the respective dates of acquisition. Under purchase accounting, we record assets and liabilities at fair value and such amounts are reflected in the respective captions on the Consolidated Condensed Balance Sheets. The purchase price described for each acquisition below is net of any cash acquired, includes debt issued or assumed and the fair value of contingent consideration.

Acquisitions

In the first quarter of 2021, we acquired Genesys Aerosystems Group, Inc. ("Genesys"), headquartered in Mineral Wells, Texas for a purchase price of $78 million. Genesys designs and manufactures a full suite of electronic flight instrument systems and autopilot solutions. This operation is included in our Aircraft Controls segment.

Divestitures

On December 3, 2021, we sold the assets of our Navigation Aids (NAVAIDS) business based in Salt Lake City, Utah previously included in our Aircraft Controls segment to Thales. We received proceeds of $39 million at closing and recorded a gain of $16 million, net of transaction costs. The sale is subject to customary post closing working capital and other adjustments, including amounts currently held in escrow.

In the first quarter of 2021, we sold a non-core business in our Aircraft Controls segment for $2 million in net consideration and recorded a minimal loss.

CRITICAL ACCOUNTING POLICIES

On a regular basis, we evaluate the critical accounting policies used to prepare our consolidated financial statements, including revenue recognition on long-term contracts, contract reserves, reserves for inventory valuation, reviews for impairment of goodwill, reviews for impairment of long-lived assets, pension assumptions and income taxes.

RECENT ACCOUNTING PRONOUNCEMENTS

See Note 1 of the Consolidated Condensed Financial Statements included in Item 1, Financial Statements of this report for further information regarding Financial Accounting Standards Board issued Accounting Standards Updates (ASU).

COVID-19 IMPACTS ON OUR BUSINESS

The spread of the COVID-19 outbreak has disrupted businesses on a global scale. On March 11, 2020, the World Health Organization classified the outbreak as a pandemic. As we entered this crisis, the Company established two clear priorities: first and foremost the health and safety of our employees and their families, and second, continuing to meet the needs of our customers and secure the financial well-being of the Company. Substantially all of our operations and production activities have, to-date, remained operational. In response to the COVID-19 crisis, we implemented changes in our work practices to maintain a safe working environment for production employees at our facilities, while enabling other employees to productively work from home. As we commence bringing employees back to the workplace and return to in-person meetings with customers and suppliers, we have adopted a flexible work approach. These actions will allow for a smooth transition from COVID-19 conditions to a future that better meets the needs of the business and the interests of our employees. We will comply with any applicable Federal, State or Local guidelines on vaccination and workplace hygiene requirements for employees, customers, suppliers and visitors. As economic activity recovers, we will continue to monitor the situation, assessing further possible implications on our operations, supply chain, liquidity, cash flow and customer orders. We believe that our existing financial arrangements are sufficient to meet our operating needs, and have adequate borrowings under short and long-term arrangements that could provide additional relief if necessary.

CONSOLIDATED RESULTS OF OPERATIONS

	Three Months Ended			
(dollars and shares in millions, except per share data)	January 1, 2022	January 2, 2021	$ Variance	% Variance
Net sales	$ 724	$ 684	$ 40	6%
Gross margin	26.6 %	27.7 %		
Research and development expenses	$ 28	$ 28	$ —	(1%)
Selling, general and administrative expenses as a percentage of sales	15.4 %	14.6 %		
Interest expense	$ 8	$ 8	$ —	(5%)
(Gain) loss on sale of business	$ (16)	$ —	$ (16)	n/a
Other	$ —	$ 3	$ (3)	(96%)
Effective tax rate	24.7 %	24.9 %		
Net earnings	$ 46	$ 38	$ 8	22%
Diluted earnings per share	$ 1.44	$ 1.17	$ 0.27	23%
Twelve-month backlog	$ 2,200	$ 1,900	$ 300	16%

Net sales increased in the first quarter of 2022 compared to the first quarter of 2021 as sales increased within all of our segments. The most substantial increase in the quarter came from Space and Defense Controls, driven by our defense market. Also, sales were particularly strong in Aircraft Controls, driven by commercial OEM programs, when compared to the same period of 2021. Furthermore, Industrial Systems sales increased, reflecting a continuing recovery from the global COVID-19 pandemic.

Gross margin in the first quarter of 2022 decreased compared to the first quarter of 2021 due to operational inefficiencies, labor availability challenges and supply chain constraints related to the ongoing COVID-19 pandemic.

Research and development expenses in the first quarter of 2022 were in line with the same quarter a year ago. Higher activity in Industrial Systems was offset by reduced spend in Aircraft Controls.

In the first quarter of 2022, selling, general and administrative expenses as a percentage of sales increased as compared to the first quarter of 2021. Early in the first quarter of 2022, customer interactions increased. Additionally, as the Omicron variant emerged, we experienced labor inefficiencies, as well as increased activities related to our portfolio rationalization initiative.

The first quarter of 2022 included a $16 million benefit from the sale of our NAVAIDS business. Our portfolio shaping activities, primarily due to the NAVAIDS business sale, contributed a net $0.33 of diluted EPS in the first quarter of 2022.

The change in twelve-month backlog at January 1, 2022 as compared with the twelve-month backlog at January 2, 2021 was driven by increases in all segments. Twelve-month backlog increased in Aircraft Controls due to the timing of commercial OEM orders, which was partially offset by the timing of various military programs. Backlog also increased in Space and Defense Controls driven by increases in space satellite programs and by higher orders for defense control programs. The Industrial Systems backlog increased due to recovering demand for components products and for our core industrial products.

SEGMENT RESULTS OF OPERATIONS

Operating profit, as presented below, is net sales less cost of sales and other operating expenses, excluding interest expense, equity-based compensation expense and other corporate expenses. Cost of sales and other operating expenses are directly identifiable to the respective segment or allocated on the basis of sales, manpower or profit. Operating profit is reconciled to earnings before income taxes in Note 19 of the Notes to Consolidated Condensed Financial Statements included in this report.

Aircraft Controls

	Three Months Ended			
(dollars in millions)	January 1, 2022	January 2, 2021	$ Variance	% Variance
Net sales - military aircraft	$ 186	$ 206	$ (20)	(10%)
Net sales - commercial aircraft	117	81	36	45%
	$ 303	$ 287	$ 17	6%
Operating profit	$ 42	$ 28	$ 14	50%
Operating margin	*13.8 %*	*9.7 %*		

Aircraft Controls' net sales increased in the first quarter of 2022 as compared to the first quarter of 2021 due to stronger commercial OEM program sales partially offset by a decrease in military program sales.

In the first quarter of 2022 compared to the first quarter of 2021, sales increased $28 million across our commercial OEM programs and $9 million across our commercial aftermarket programs. The increase within commercial OEM spans across most of our programs, with the most significant growth coming from the A350 and business jets. We also had $3 million of incremental sales from our Genesys acquisition. Furthermore, commercial aftermarket sales increased driven by higher 787 spare activity, as well as increases on A350 and business jets.

Within military programs, military OEM sales decreased by $13 million from the same quarter of 2021 as a result of supply chain challenges affecting F-35 and the timing of orders for foreign military programs. These decreases were partially offset by increased sales across all helicopter programs, funded development and sales from our Genesys acquisition. Within military aftermarket, sales decreased $7 million across a broad range of programs. Last year's first quarter benefited from our customers building inventory during the early phases of COVID-19.

Operating margin increased in the first quarter of 2022 compared to the same period of 2021. Included in this increase was the divestiture of our NAVAIDS business completed as part of our portfolio shaping activities. Excluding the gain from the sale, adjusted margins in the first quarter of 2022 were 8.5%. The adjusted margin decreased as compared to the same period of 2021, as the prior year included higher amounts of sales from foreign military programs that did not repeat.

Space and Defense Controls

	Three Months Ended			
(dollars in millions)	January 1, 2022	January 2, 2021	$ Variance	% Variance
Net sales	$ 208	$ 188	$ 20	10%
Operating profit	$ 21	$ 23	$ (2)	(8%)
Operating margin	*10.2 %*	*12.2 %*		

Space and Defense Controls' net sales increased in the first quarter of 2022 compared to the first quarter of 2021 due to continued growth in both markets.

Sales in our space market increased $10 million in the first quarter of 2022 when compared to the first quarter of 2021 driven by higher orders for our integrated space vehicles, satellite avionics and legacy valve programs. These increases were partially offset by a decline in hypersonics, as developmental programs began to wind down. Within our defense market, sales increased $10 million, driven by the ramp up of the new RIwP turret program, and by increased defense component sales.

The first quarter of 2022 included a $2 million inventory write-down charge related to our portfolio shaping activities as we are exiting a product line in our security business. Excluding this inventory write-down charge, adjusted operating margin for the quarter was 11.0%. Continued COVID-19 related direct labor inefficiencies contributed to the lower margin. Also, we had a shift in our sales mix, as we had higher sales on early-stage production programs.

Industrial Systems

	Three Months Ended			
(dollars in millions)	January 1, 2022	January 2, 2021	$ Variance	% Variance
Net sales	$ 213	$ 209	$ 4	2%
Operating profit	$ 17	$ 20	$ (3)	(14%)
Operating margin	*8.1 %*	*9.5 %*		

Net sales in Industrial Systems increased in the first quarter of 2022 as compared to the first quarter of 2021, driven by continued recovery in our industrial automation market and increases in our energy and simulation and test markets. Weaker foreign currencies, primarily the Euro relative to the U.S. Dollar, decreased sales $2 million in the first quarter of 2022 compared to the same period of 2021.

The industrial market remains on the path to recovery, with benchmark indices showing continued strong expansion. In the first quarter of 2022 as compared to the first quarter of 2021, sales in our industrial automation market increased $7 million as customers continued to build capacity to meet recovering demand. Furthermore, sales within our energy market and our simulation and test market increased $3 million and $2 million, respectively, reflecting both demand recovery and the timing of test orders. Partially offsetting these increases was an $8 million decline in our medical market, as the prior year's surge in response to the COVID-19 pandemic moderated.

Operating margin decreased in the first quarter of 2022 compared to the first quarter of 2021. We incurred moving expenses and production disruptions from continued portfolio refinement activities as we consolidated facilities in Europe and the US, which further reduced margins. We also increased our investments in future platforms for growth, particularly our new electronic construction vehicle initiative.

CONSOLIDATED SEGMENT OUTLOOK

			2022 vs. 2021	
(dollars in millions)	2022 Outlook	2021	$ Variance	% Variance
Net sales:				
Aircraft Controls	$ 1,245	$ 1,161	$ 84	7%
Space and Defense Controls	880	799	81	10%
Industrial Systems	910	892	18	2%
	$ 3,035	$ 2,852	$ 183	6%
Operating profit:				
Aircraft Controls	$ 142	$ 97	$ 45	47%
Space and Defense Controls	100	88	11	13%
Industrial Systems	86	86	—	—%
	$ 328	$ 271	$ 57	21%
Operating margin:				
Aircraft Controls	11.4 %	8.3 %		
Space and Defense Controls	11.3 %	11.1 %		
Industrial Systems	9.5 %	9.6 %		
	10.8 %	9.5 %		
Net earnings	$ 188	$ 157		
Diluted earnings per share	$5.63 - $6.03	$ 4.87		

2022 Outlook – We expect higher sales across all segments in 2022. We expect operating margin will increase due to the gain on the NAVAIDS sale, as well as operational improvements within Aircraft Controls and Space and Defense Controls. A portion of this margin improvement will be offset as we continue to reshape our portfolio and continue to invest internally in infrastructure, facilities and advanced manufacturing systems. Net earnings in 2022 are expected to benefit from the incremental operating margin from higher sales. As a result, we expect the midpoint of our earnings per share range will be $5.83. Excluding the first quarter portfolio shaping activities, which include the $16 million NAVAIDS gain and the $2 million inventory write-down, we expect our adjusted earnings per share will range between $5.30 and $5.70, with a midpoint of $5.50. This adjusted outlook is unchanged from the prior quarter's outlook. Management believes that the adjusted outlook may be useful in evaluating the financial condition and results of operations of the company.

2022 Outlook for Aircraft Controls – We expect 2022 sales within commercial aircraft programs to increase due to higher activity in our legacy OEM programs and Genesys programs, combined with general recoveries within business jets and commercial aftermarket programs. We also expect that as supply chain challenges ease, military sales will increase in both OEM and aftermarket programs, spread across helicopters, funded development programs, Genesys and F-35 aftermarket. These increases will offset an expected decline in F-35 OEM sales. We expect operating margin will increase in 2022 due to the NAVAIDS gain and due to the incremental operating margin driven by higher levels of military OEM and aftermarket program sales.

2022 Outlook for Space and Defense Controls – We expect 2022 sales in Space and Defense Controls will increase in both markets. Within our defense market, we expect higher sales from the ramp up of our new turret program, and higher amounts of defense component sales. We expect sales in our space market to increase as well, driven by higher sales from advanced missions and satellites, partially offset by the wind down of hypersonic program activity. We expect operating margin to increase slightly from 2021 due to incremental sales, primarily in the defense market.

2022 Outlook for Industrial Systems – We expect an increase in Industrial Systems' sales in 2022 when compared to 2021. We anticipate strong sales within our medical components business, led by increased orders for sleep therapy products. We also expect a modest sales increase in the simulation and test markets as they continue to recover from the effects of COVID-19. We expect operating margin will remain relatively unchanged in 2022 as compared to 2021, as the benefit of our growing backlog is offset by our ongoing portfolio reshaping activities.

FINANCIAL CONDITION AND LIQUIDITY

	Three Months Ended		
(dollars in millions)	January 1, 2022	January 2, 2021	$ Variance
Net cash provided (used) by:			
Operating activities	$ 157	$ 94	$ 63
Investing activities	—	(96)	97
Financing activities	(152)	13	(165)

Our available borrowing capacity and our cash flow from operations have provided us with the financial resources needed to make organic investments, fund acquisitive growth and return capital to shareholders.

At January 1, 2022, our cash balances were $107 million, which were primarily held outside of the U.S. Cash flow from our U.S. operations, together with borrowings on our credit facility, fund on-going activities, debt service requirements and future growth investments.

Operating activities

Net cash provided by operating activities increased in the first quarter of 2022 compared to the first quarter of 2021. The first quarter of 2022 includes $90 million from the receivables purchase agreement. Also in 2022, customer advances increased $76 million related to customer payments on defense programs. Excluding these benefits, cash provided by operating activities decreased due to the timing of accrued expenses as well as accounts payable.

Investing activities

Net cash used by investing activities in the first quarter of 2022 included $37 million for capital expenditures, as we increased investment in infrastructure, facilities and advanced manufacturing systems. These outflows were offset by the proceeds from the sale of the NAVAIDS business.

Net cash used by investing activities in the first quarter of 2021 included $78 million for our acquisition of Genesys and $20 million for capital expenditures. Capital expenditures in 2021 were constrained in response to COVID-19 uncertainty.

Financing activities

Net cash provided by financing activities in the first quarter of 2022 included $128 million of net pay down on our credit facilities. Additionally, financing activities in the first quarter of 2022 included $13 million of share repurchases and $8 million of dividends.

Net cash provided by financing activities in the first quarter of 2021 included $34 million of net proceeds on our credit facility. Additionally, financing activities in the first quarter of 2021 included $11 million of share repurchases and $8 million of dividends.

Off Balance Sheet Arrangements

We do not have any material off balance sheet arrangements that have or are reasonably likely to have a material future effect on our financial condition, results of operations or cash flows.

Contractual Obligations and Commercial Commitments

Our contractual obligations and commercial commitments have not changed materially from the disclosures in our Annual Report on Form 10-K for the year ended October 2, 2021.

CAPITAL STRUCTURE AND RESOURCES

We maintain bank credit facilities to fund our short and long-term capital requirements, including acquisitions. From time to time, we also sell debt and equity securities to fund acquisitions or take advantage of favorable market conditions.

Our U.S. revolving credit facility, which matures on October 15, 2024, has a capacity of $1.1 billion and also provides an expansion option, which permits us to request an increase of up to $400 million to the credit facility upon satisfaction of certain conditions. The U.S. revolving credit facility had an outstanding balance of $272 million at January 1, 2022. The weighted-average interest rate on the majority of the outstanding credit facility borrowings was 1.61% and is principally based on LIBOR plus the applicable margin, which was 1.50% at January 1, 2022. The credit facility is secured by substantially all of our U.S. assets.

The U.S. revolving credit facility contains various covenants. The minimum for the interest coverage ratio, defined as the ratio of EBITDA to interest expense for the most recent four quarters, is 3.0. The maximum for the leverage ratio, defined as the ratio of net debt to EBITDA for the most recent four quarters, is 4.0. We are in compliance with all covenants. EBITDA is defined in the loan agreement as (i) the sum of net income, interest expense, income taxes, depreciation expense, amortization expense, other non-cash items reducing consolidated net income and non-cash equity-based compensation expenses minus (ii) other non-cash items increasing consolidated net income.

We are generally not required to obtain the consent of lenders of the U.S. revolving credit facility before raising significant additional debt financing; however, certain limitations and conditions may apply that would require consent to be obtained. In recent years, we have demonstrated our ability to secure consents to access debt markets. We have also been successful in accessing equity markets from time to time. We believe that we will be able to obtain additional debt or equity financing as needed.

The SECT has a revolving credit facility with a borrowing capacity of $35 million, maturing on July 26, 2024. Interest was 2.23% as of January 1, 2022 and is based on LIBOR plus a margin of 2.13%. As of January 1, 2022, there were $8 million of outstanding borrowings.

We have $500 million aggregate principal amount of 4.25% senior notes due December 15, 2027 with interest paid semiannually on June 15 and December 15 of each year, which commenced on June 15, 2020. The senior notes are unsecured obligations, guaranteed on a senior unsecured basis by certain subsidiaries and contain normal incurrence-based covenants and limitations such as the ability to incur additional indebtedness, pay dividends, make other restricted payments and investments, create liens and certain corporate acts such as mergers and consolidations. The aggregate net proceeds were used to repay indebtedness under our U.S. bank facility, thereby increasing the unused portion of our U.S. revolving credit facility.

On November 4, 2021, Moog Receivables LLC (the "Receivables Subsidiary"), a wholly owned bankruptcy remote special purpose subsidiary of Moog Inc. (the "Company"), as seller, the Company, as master servicer, Wells Fargo Bank, N.A., as administrative agent (the "Agent") and certain purchasers (collectively, the "Purchasers") entered into an Amended and Restated Receivables Purchase Agreement (the "RPA"). The RPA matures on November 4, 2024 and is subject to customary termination events related to transactions of this type.

Under the RPA, the Receivables Subsidiary may sell receivables to the Purchasers in amounts up to a $100 million limit. The receivables will be sold to the Purchasers in consideration for the Purchasers making payments of cash, which is referred to as "capital" for purposes of the RPA, to the Receivables Subsidiary in accordance with the terms of the RPA. The Receivables Subsidiary may sell receivables to the Purchasers so long as certain conditions are satisfied, including that, at any date of determination, the aggregate capital paid to the Receivables Subsidiary does not exceed a "capital coverage amount", equal to an adjusted net receivables pool balance minus a required reserve. Each Purchaser's share of capital accrues yield at a floating rate plus an applicable margin, which totaled 1.00% as of January 1, 2022.

The parties intend that the conveyance of receivables to the Agent, for the ratable benefit of the Purchasers will constitute a purchase and sale of receivables and not a pledge for security. The Receivables Subsidiary has guaranteed to each Purchaser and Agent the prompt payment of sold receivables, and to secure the prompt payment and performance of such guaranteed obligations, the Receivables Subsidiary has granted a security interest to the Agent, for the benefit of the Purchasers, in all assets of the Receivables Subsidiary. The assets of the Receivables Subsidiary are not available to pay our creditors or any affiliate thereof. In our capacity as master servicer under the RPA, we are responsible for administering and collecting receivables and have made customary representations, warranties, covenants and indemnities. We also provided a performance guarantee for the benefit of the Purchaser.

Cash received from collections of sold receivables is used by the Receivables Subsidiary to fund additional purchases of receivables on a revolving basis or to return all or any portion of outstanding capital of the Purchaser. As of January 1, 2022, the amount sold to the Purchasers and derecognized was $90 million.

Previously, we securitized certain trade receivables that were accounted for as secured borrowings (the "Securitization Program"). The Securitization Program was extended on October 29, 2021, providing up to $80 million of borrowing capacity and lowered our cost to borrow funds as compared to the U.S. revolving credit facility. Under the Securitization Program, we sold certain trade receivables and related rights to an affiliate, which in turn sold an undivided variable percentage ownership interest in the trade receivables to a financial institution, while maintaining a subordinated interest in a portion of the pool of trade receivables. The Securitization Program had a minimum borrowing requirement equal to the lesser of either 80% of our borrowing capacity or 100% of our borrowing base, which was a subset of the trade receivables sold under this agreement. Interest on the secured borrowings under the Securitization Program was based on 30-day LIBOR plus an applicable margin.

At January 1, 2022, we had $836 million of unused capacity, including $797 million from the U.S. revolving credit facility after considering standby letters of credit. Our leverage ratio covenant limits our ability to increase net debt by $635 million as of January 1, 2022.

Net debt to capitalization was 32% at January 1, 2022 and 36% at October 2, 2021. The decrease in net debt to capitalization is primarily due to the repayment of outstanding borrowings.

We declared and paid cash dividends of $0.25 per share on our Class A and Class B common stock in the first quarter of 2022.

On November 20, 2020, the Board of Directors authorized a new share repurchase program to replace the previously existing share repurchase program. This program authorizes repurchases that includes both Class A and Class B common stock, and allows us to buy up to an aggregate 3 million common shares. Under this program, since inception we purchased approximately 427,000 shares for $33 million.

We are well positioned to invest in our business and by accelerating the pace of internal investments, both in terms of capital expenditures as well as investments in new market opportunities, we believe we can create more long term value for our shareholders. We also will continue to explore opportunities to make strategic acquisitions and return capital to shareholders.

ECONOMIC CONDITIONS AND MARKET TRENDS

We operate within the aerospace and defense and industrial markets. Our businesses continue to face varying levels of pressure from the COVID-19 pandemic.

Our defense and aerospace businesses represented 69% of our 2021 sales. These businesses have faced, and will continue to face, supply chain and production level risks as a result of the COVID-19 pandemic. They are directly affected by program funding levels, which have remained relatively stable. Our commercial aircraft market, which represented less than 15% of our 2021 sales, continues to face the greatest pressure due to dramatic reductions in air travel throughout the past two years. While domestic travel has recently started to show signs of recovery, international travel remains muted.

Within our industrial markets, which represented 31% of our 2021 sales, we have seen recent signs of recovery within industrial automation; however, as the demand is starting to rebuild, we are now experiencing pressure within our material supply chains and direct labor inefficiencies. Additionally, our simulation and test and energy markets continue to face demand challenges from the macroeconomic slowdown. Our medical business, which represented less than 10% of our 2021 sales, experienced a surge in demand for our medical applications essential in the fight against the pandemic. As this surge in demand wanes, we expect a return to normal growth rates in the future.

A common factor throughout our markets is the continuing demand for technologically advanced products.

Aerospace and Defense

Within aerospace and defense, we serve three end markets: defense, commercial aircraft and space.

The defense market is dependent on military spending for development and production programs. We have a growing development program order book for future generation aircraft and hypersonic missiles, and we strive to embed our technologies within these high-performance military programs of the future. Aircraft production programs are typically long-term in nature, offering predictable capacity needs and future revenues. We maintain positions on numerous high priority programs, including the Lockheed Martin F-35 Lightning II, FA-18E/F Super Hornet and V-22 Osprey. The large installed base of our products leads to attractive aftermarket sales and service opportunities. The tactical and strategic missile, missile defense and defense controls markets are dependent on many of the same market conditions as military aircraft, including overall military spending and program funding levels. At times when there are perceived threats to national security, U.S. Defense spending can increase; at other times, defense spending can decrease. Future levels of defense spending are uncertain, subject to presidential and congressional debate and if continuing resolutions remain in place, defense investment programs could be constrained.

The commercial OEM aircraft market has depended on a number of factors, including both the last decade's increasing global demand for air travel and increasing fuel prices. Both factors contributed to the demand for new, more fuel-efficient aircraft with lower operating costs that lead to large production backlogs for Boeing and Airbus. However, the impact of the COVID-19 pandemic has drastically reduced air traffic as travel restrictions and social distancing measures were implemented to help control the spread of the virus. The reduced air traffic has applied financial pressures on airlines, and in order to preserve cash and liquidity, they have dramatically reduced flight hours and delayed the purchases of new aircraft. Although U.S. domestic air travel has recently increased during the second half of 2021, international travel has not yet begun to recover. Given the uncertain length of this pandemic and associated restrictions to travel long distances, the commercial wide-body aircraft market may take longer to recover. Furthermore, as companies and employees become accustomed to working remotely, business travel and the associated flight hours may not reach the pre-pandemic levels. As such, we believe Boeing and Airbus will continue to directionally match their wide-body aircraft production rates with the reduced air traffic volume, which has lowered their demand for our flight control systems. We believe the commercial OEM market's recovery will be heavily dependent on the return to pre-COVID-19 air traffic activity levels and therefore will face pressures for a prolonged period of time.

The commercial aftermarket is driven by usage and age of the existing aircraft fleet for passenger and cargo aircraft, which drives the need for maintenance and repairs. While there were initial dramatic reductions in flight hours and airlines took cash preservation measures due to the impacts of COVID-19, we have seen a recovery in the demand volume for our maintenance services and spare parts. As domestic, and eventually international, travel recovers, we expect this market will experience a faster return to pre-pandemic conditions as compared to the commercial OEM market.

The space market is comprised of four customer markets: the civil market, the department of defense market, the commercial space market and the new space market. The civil market, namely NASA, is driven by investment for commercial and exploration activities, including NASA's return to the moon. The department of defense market is driven by governmental-authorized levels of funding for satellite communications, as well as funding for hypersonic defense technologies. The commercial space market is comprised of large satellite customers, which traditionally sell to communications companies. Trends for this market, as well as for commercial launch vehicles, follow demand for increased capacity. This, in turn tends to track with underlying demand for increased consumption of telecommunication services, satellite replacements and global navigation needs. The new space market is driven by investments to increase the speed and access to space through smaller satellites at reduced cost.

Industrial

Within industrial, we serve two end markets: industrial, consisting of industrial automation products, simulation and test products and energy generation and exploration products; and medical.

The industrial market we serve with our industrial automation products is influenced by several factors including capital investment levels, the pace of product innovation, economic conditions, cost-reduction efforts and technology upgrades. As governments around the world implemented measures to help control the spread of the COVID-19 virus, the subsequent economic downturn constrained capital investment and slowed spending for product innovation and upgrades. As the industrial market has recently begun to recover from the pandemic and indices are showing continued strong expansion, concern remains over the global supply chain's ability to meet this increased level of activity.

Our simulation and test products operate in markets that are largely affected by these same factors and investment challenges stemming from the COVID-19 pandemic. Reduced air travel and the subsequent reduction in new commercial aircraft reduced the demand for flight simulator training, for which we supply motion control products. Similarly, the pandemic-related constrained capital spend reduced the need for our automotive and material testing applications. However, we are starting to see stronger demand for flight simulation systems as the airline market recovers.

Our energy generation and exploration products operate in a market that is influenced by changing oil and natural gas prices, global urbanization and the resulting change in supply and demand for global energy. Historically, drivers for global growth include investments in power generation infrastructure and exploration of new oil and gas resources. While the COVID-19 pandemic led to reduced oil prices, reducing the economic feasibility for these investments and explorations, oil prices have recently recovered above pre-pandemic levels.

The medical market we serve, in general, is influenced by economic conditions, regulatory environments, hospital and outpatient clinic spending on equipment, population demographics, medical advances, patient demands and the need for precision control components and systems. The outbreak of the COVID-19 virus created unprecedented demand for medical equipment and has shifted the way hospitals optimize their capacity. Our medical components products are critical motion control components for life saving medical equipment, including ventilators, oxygen concentrators and continuous positive airway pressure (CPAP) machines, among others. The COVID-19 pandemic increased the demand for ventilators, of which our products are a key component of that industry's supply chain. Additionally, our medical devices products including infusion and enteral feeding pumps, and their corresponding disposable sets, are used primarily in the home healthcare environment. Since the COVID-19 pandemic has altered the way hospitals provide care by asking non-critical patients to recuperate at home, our medical devices products saw an increase in orders. As this level of demand was directly related to pandemic, we have already moved beyond the initial surge in demand as our customers resize their inventory levels.

Foreign Currencies

We are affected by the movement of foreign currencies compared to the U.S. dollar, particularly in Aircraft Controls and Industrial Systems. About one-fifth of our 2021 sales were denominated in foreign currencies. During the first three months of 2022, average foreign currency rates generally weakened against the U.S. dollar compared to 2021. The translation of the results of our foreign subsidiaries into U.S. dollars decreased sales by $2 million compared to the same period one year ago.

Cautionary Statement

Information included or incorporated by reference in this report that does not consist of historical facts, including statements accompanied by or containing words such as “may,” “will,” “should,” “believes,” “expects,” “expected,” “intends,” “plans,” “projects,” “approximate,” “estimates,” “predicts,” “potential,” “outlook,” “forecast,” “anticipates,” “presume” and “assume,” are forward-looking statements. Such forward-looking statements are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are not guarantees of future performance and are subject to several factors, risks and uncertainties, the impact or occurrence of which could cause actual results to differ materially from the expected results described in the forward-looking statements. In evaluating these forward-looking statements, you should carefully consider the factors set forth below.

Although it is not possible to create a comprehensive list of all factors that may cause actual results to differ from the results expressed or implied by our forward-looking statements or that may affect our future results, some of these factors and other risks and uncertainties that arise from time to time are described in Item 1A “Risk Factors” of our Annual Report on Form 10-K and in our other periodic filings with the SEC and include the following:

COVID-19 PANDEMIC RISKS

- We face various risks related to health pandemics such as the global COVID-19 pandemic, which may have material adverse consequences on our operations, financial position, cash flows, and those of our customers and suppliers.

STRATEGIC RISKS

- We operate in highly competitive markets with competitors who may have greater resources than we possess;
- Our new products and technology research and development efforts are substantial and may not be successful which could reduce our sales and earnings;
- Our inability to adequately enforce and protect our intellectual property or defend against assertions of infringement could prevent or restrict our ability to compete; and
- Our sales and earnings may be affected if we cannot identify, acquire or integrate strategic acquisitions, or as we conduct divestitures.

MARKET CONDITION RISKS

- The markets we serve are cyclical and sensitive to domestic and foreign economic conditions and events, which may cause our operating results to fluctuate;
- We depend heavily on government contracts that may not be fully funded or may be terminated, and the failure to receive funding or the termination of one or more of these contracts could reduce our sales and increase our costs;
- The loss of The Boeing Company or Lockheed Martin as a customer or a significant reduction in sales to either company could adversely impact our operating results; and
- We may not realize the full amounts reflected in our backlog as revenue, which could adversely affect our future revenue and growth prospects.

OPERATIONAL RISKS

- Our business operations may be adversely affected by information systems interruptions, intrusions or new software implementations;
- We may not be able to prevent, or timely detect, issues with our products and our manufacturing processes which may adversely affect our operations and our earnings;
- If our subcontractors or suppliers fail to perform their contractual obligations, our prime contract performance and our ability to obtain future business could be materially and adversely impacted; and
- The failure or misuse of our products may damage our reputation, necessitate a product recall or result in claims against us that exceed our insurance coverage, thereby requiring us to pay significant damages.

FINANCIAL RISKS

▪ We make estimates in accounting for over-time contracts, and changes in these estimates may have significant impacts on our earnings;
▪ We enter into fixed-price contracts, which could subject us to losses if we have cost overruns;
▪ Our indebtedness and restrictive covenants under our credit facilities could limit our operational and financial flexibility;
▪ The phase out of LIBOR may negatively impact our debt agreements and financial position, results of operations and liquidity;
▪ Significant changes in discount rates, rates of return on pension assets, mortality tables and other factors could adversely affect our earnings and equity and increase our pension funding requirements;
▪ A write-off of all or part of our goodwill or other intangible assets could adversely affect our operating results and net worth; and
▪ Unforeseen exposure to additional income tax liabilities may affect our operating results.

LEGAL AND COMPLIANCE RISKS

▪ Contracting on government programs is subject to significant regulation, including rules related to bidding, billing and accounting standards, and any false claims or non-compliance could subject us to fines, penalties or possible debarment;
▪ Our operations in foreign countries expose us to currency, political and trade risks and adverse changes in local legal and regulatory environments could impact our results of operations;
▪ Government regulations could limit our ability to sell our products outside the United States and otherwise adversely affect our business;
▪ We are involved in various legal proceedings, the outcome of which may be unfavorable to us; and
▪ Our operations are subject to environmental laws, and complying with those laws may cause us to incur significant costs.

GENERAL RISKS

▪ Future terror attacks, war, natural disasters or other catastrophic events beyond our control could negatively impact our business; and
▪ Our performance could suffer if we cannot maintain our culture as well as attract, retain and engage our employees.

While we believe we have identified and discussed above the material risks affecting our business, there may be additional factors, risks and uncertainties not currently known to us or that we currently consider immaterial that may affect the forward-looking statements made herein. Given these factors, risks and uncertainties, investors should not place undue reliance on forward-looking statements as predictive of future results. Any forward-looking statement speaks only as of the date on which it is made, and we disclaim any obligation to update any forward-looking statement made in this report, except as required by law.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

Refer to the Company's Annual Report on Form 10-K for the year ended October 2, 2021 for a complete discussion of our market risk. There have been no material changes in the current year regarding this market risk information.

Item 4. Controls and Procedures.

(a) Disclosure Controls and Procedures. We carried out an evaluation, under the supervision and with the participation of our management, including the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as defined in Exchange Act Rules 13a-15(e) and 15d-15(e). Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that these disclosure controls and procedures are effective as of January 1, 2022 to ensure that information required to be disclosed in reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures.

(b) Changes in Internal Control over Financial Reporting. There have been no changes during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II OTHER INFORMATION

Item 1A. Risk Factors.

Refer to the Company's Annual Report on Form 10-K for the year ended October 2, 2021 for a complete discussion of our risk factors. There have been no material changes in the current year regarding our risk factors.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

(c) The following table summarizes our purchases of our common stock for the quarter ended January 1, 2022.

Period	(a) Total Number of Shares Purchased (1) (2)(3)	(b) Average Price Paid Per Share	(c) Total number of Shares Purchased as Part of Publicly Announced Plans or Programs (3)	(d) Maximum Number (or Approx. Dollar Value) of Shares that May Yet Be Purchased Under Plans or Programs (3)
October 2, 2021 - October 30, 2021	7,604	$ 78.74	—	2,756,853
October 31, 2021 - November 27, 2021	55,887	81.53	5,490	2,751,363
November 28, 2021 - January 1, 2022	188,325	73.15	178,164	2,573,199
Total	251,816	$ 75.18	183,654	2,573,199

(1) Reflects purchases by the SECT of shares of Class B common stock from the ESPP, the RSP and from equity-based compensation award recipients under right of first refusal terms at average prices as follows: 3,011 shares at $80.85 in October; 14,655 shares at $82.58 in November and 4,648 shares at $78.25 in December. In connection with the issuance of equity-based awards, we purchased 25,000 Class B shares at $83.00 per share from the SECT in November. In addition purchases by the SECT include 5,513 Class B shares from members of the Moog family at $83.00 per share in December.

(2) In connection with the exercise of equity-based compensation awards, we accept delivery of shares to pay for the exercise price and withhold shares for tax withholding obligations at average prices as follows: In October, we accepted delivery of 4,593 Class A shares at $77.36. In November, we accepted delivery of 2,192 Class A shares at $79.41 and 8,550 Class B shares at $83.00.

(3) On November 20, 2020 the Board of Directors approved a share repurchase program. The program authorizes repurchases of up to 3 million common shares of Class A or Class B common stock in open market or privately negotiated transactions at the discretion of management. In November we purchased 5,490 Class A shares at an average price of $70.56 and in December we purchased 178,164 Class A shares at an average price of $72.71.

Item 6. Exhibits.

(a) Exhibits

10.1	Fifth Amendment to the Moog Inc. 2014 Long Term Incentive Plan, effective November 16, 2021. (Filed herewith).
10.2	First Amendment to the Moog Inc. Deferred Compensation Plan for Directors and Officers, effective November 16, 2021. (Filed herewith).
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	Interactive Date files (submitted electronically herewith)

(101.INS)	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
(101.SCH)	XBRL Taxonomy Extension Schema Document
(101.CAL)	XBRL Taxonomy Extension Calculation Linkbase Document
(101.DEF)	XBRL Taxonomy Extension Definition Linkbase Document
(101.LAB)	XBRL Taxonomy Extension Label Linkbase Document
(101.PRE)	XBRL Taxonomy Extension Presentation Linkbase Document

104	Cover Page Interactive Data File - the cover page XBRL tags are embedded within the Inline XBRL document and are contained within Exhibit 101.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

			Moog Inc.
			(Registrant)
Date:	January 28, 2022	By	/s/ John R. Scannell
			John R. Scannell Chairman of the Board and Director Chief Executive Officer (Principal Executive Officer)
Date:	January 28, 2022	By	/s/ Jennifer Walter
			Jennifer Walter Vice President and Chief Financial Officer (Principal Financial Officer)
Date:	January 28, 2022	By	/s/ Michael J. Swope
			Michael J. Swope Controller (Principal Accounting Officer)