The Aerospace Corporation

Financial Statements as of and for the
Years Ended September 30, 2019 and 2018,
Schedule of Expenditures of Federal Awards and
OMB Uniform Grant Guidance Compliance Reports
for the Year Ended September 30, 2019 and
Independent Auditors' Report

THE AEROSPACE CORPORATION

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INTRODUCTION

The Aerospace Corporation (the "Corporation") participates in the Coordinated Audit Program (CAP) sponsored by the Defense Contract Audit Agency (DCAA).

The CAP requires Deloitte & Touche LLP ("Deloitte & Touche"), as the Corporation's independent auditor, to meet with, and reach an understanding with, DCAA regarding Deloitte & Touche's and DCAA's division of responsibility for the Corporation's audit and reporting requirements described in Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (the "Uniform Guidance").

Consistent with the provisions of the Uniform Guidance and the CAP, Deloitte & Touche and DCAA agreed on the below division of responsibility regarding auditing and reporting on the Corporation's financial statements, schedule of expenditures of federal awards, and compliance with requirements that could have a direct and material effect on each major program all for the year ended September 30, 2019.

Deloitte & Touche agreed to audit and/or report on the Corporation's:

- Financial statements

- Schedule of expenditures of federal awards

- Internal control over financial reporting and on compliance and other matters based on an audit of the financial statements, as required by *Government Auditing Standards*

- Compliance with certain requirements described in the U.S. Office of Management and Budget (OMB) *Compliance Supplement* (the "Compliance Supplement") that could have a direct and material effect on each of the Corporation's major federal award programs and internal control over compliance related to those programs. As part of the division of responsibility described above, Deloitte & Touche's consideration of the Compliance Supplement requirements was limited to the following:

  - Equipment and real property management
  - Period of performance
  - Procurement, suspension and debarment
  - Subrecipient monitoring

The DCAA agreed to audit and/or report on the requirements included in the Compliance Supplement not addressed by Deloitte & Touche, including:

- Activities allowed or unallowed
- Allowable costs/cost principles
- Cash management
- Special tests and provisions

On March 9, 2021, the DCAA issued its report on the compliance requirements as described above, which includes an unqualified opinion for the year ended September 30, 2019.

Deloitte.

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INDEPENDENT AUDITORS' REPORT

To the Board of Trustees of
The Aerospace Corporation:

We have audited the accompanying financial statements of The Aerospace Corporation (the "Corporation"), which comprise the balance sheets as of September 30, 2019 and 2018, and the related statements of operations, changes in corporate equity, and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Corporation's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Corporation's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Corporation as of September 30, 2019 and 2018, and the results of its operations, changes in its corporate equity, and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Reporting Required by Government Auditing Standards

In accordance with Government Auditing Standards, we have also issued our report dated December 13, 2019, on our consideration of the Corporation's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the Corporation's internal control over financial reporting and compliance.

Deloitte & Touche LLP

December 13, 2019

THE AEROSPACE CORPORATION

BALANCE SHEETS
AS OF SEPTEMBER 30, 2019 AND 2018

	2019	2018
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 62,917,000	$ 33,917,000
Short-term investments (Note 11)	19,564,000	18,745,000
	82,481,000	52,662,000
Receivables:		
Accounts receivable—net of allowance of $1,219,000 and $1,445,000 as of September 30, 2019 and 2018, respectively	8,893,000	25,522,000
Reimbursable costs and fees	54,937,000	58,444,000
Noncontractual receivables and other assets	1,345,000	1,089,000
Total receivables	65,175,000	85,055,000
Prepaid expenses and deposits	18,922,000	15,977,000
Investments held in trust for nonqualified benefit plans (Notes 4 and 11)	5,514,000	6,030,000
Total current assets	172,092,000	159,724,000
INVESTMENTS HELD IN TRUST FOR NONQUALIFIED BENEFIT PLANS—Net of current portion (Notes 4 and 11)	14,409,000	12,903,000
EMPLOYEE BENEFIT ASSETS—Aerospace Retiree Medical Plan (Note 5)		5,631,000
PROPERTY AND EQUIPMENT—Net (Notes 2, 7, and 8)	512,201,000	504,497,000
OTHER ASSETS (Note 3)	9,686,000	6,602,000
TOTAL	$ 708,388,000	$ 689,357,000

(Continued)

THE AEROSPACE CORPORATION

BALANCE SHEETS
AS OF SEPTEMBER 30, 2019 AND 2018

	2019	2018
LIABILITIES AND CORPORATE EQUITY		
CURRENT LIABILITIES:		
Accounts payable and accrued expenses	$ 44,630,000	$ 46,948,000
Accrued payroll	10,419,000	7,596,000
Accrued vacation	46,238,000	45,809,000
Other accrued liabilities	13,260,000	11,130,000
Long-term debt—current portion (Notes 8 and 11)	10,728,000	10,948,000
	125,275,000	122,431,000
Accrued employee benefit obligations—current:		
Corporate Officers' Retirement Plan (Note 4)	5,336,000	6,008,000
Aerospace Deferred Compensation 457(b) Plan (Note 4)	178,000	22,000
Total accrued employee benefit obligations—current	5,514,000	6,030,000
Total current liabilities	130,789,000	128,461,000
LONG-TERM DEBT—Net of current portion (Notes 8 and 11)	105,836,000	116,502,000
ACCRUED EMPLOYEE BENEFIT OBLIGATIONS:		
Aerospace Employees' Retirement Plan (Note 4)	561,371,000	445,356,000
Corporate Officers' Retirement Plan (Note 4)	33,733,000	32,826,000
Aerospace Deferred Compensation 457(b) Plan (Note 4)	2,934,000	1,446,000
Aerospace Retiree Medical Plan (Note 5)	23,954,000	
Total accrued employee benefit obligations	621,992,000	479,628,000
OTHER LONG-TERM LIABILITIES	786,000	937,000
Total liabilities	859,403,000	725,528,000
COMMITMENTS AND CONTINGENCIES (Notes 6 and 9)		
CORPORATE EQUITY (DEFICIT):		
Corporate equity (Note 7)	381,991,000	324,966,000
Accumulated charge to corporate equity (Notes 4 and 5)	(533,006,000)	(361,137,000)
Total corporate deficit	(151,015,000)	(36,171,000)
TOTAL	$ 708,388,000	$ 689,357,000

See notes to financial statements.

(Concluded)

THE AEROSPACE CORPORATION

STATEMENTS OF OPERATIONS
FOR THE YEARS ENDED SEPTEMBER 30, 2019 AND 2018

	2019	2018
REVENUE FROM CONTRACTS	$1,108,860,000	$1,054,087,000
REIMBURSABLE COSTS:		
Direct labor	398,419,000	388,541,000
Indirect support and administrative costs	505,472,000	457,524,000
Other direct costs	92,353,000	94,367,000
Direct travel	19,367,000	18,048,000
Total reimbursable costs	1,015,611,000	958,480,000
CONTRACT EARNINGS	93,249,000	95,607,000
OTHER NONREIMBURSABLE COSTS	6,315,000	4,342,000
EARNINGS FROM OPERATIONS BEFORE PENSION AND RETIREE MEDICAL EXPENSE AND OTHER INCOME AND EXPENSE	86,934,000	91,265,000
PENSION AND RETIREE MEDICAL EXPENSE (Notes 4 and 5)	26,209,000	81,818,000
OTHER INCOME (EXPENSE):		
Interest and amortization expense on long-term debt (Note 8)	(6,303,000)	(6,879,000)
Interest expense on lines of credit borrowings (Note 6)	(131,000)	(73,000)
Realized and unrealized gain on investments held in trust for nonqualified benefit plans—net	835,000	1,203,000
Other income	1,899,000	482,000
Total other expense—net	(3,700,000)	(5,267,000)
CHANGE IN CORPORATE EQUITY	$ 57,025,000	$ 4,180,000

See notes to financial statements.

THE AEROSPACE CORPORATION

STATEMENTS OF CHANGES IN CORPORATE EQUITY
FOR THE YEARS ENDED SEPTEMBER 30, 2019 AND 2018

	Corporate Equity	Accumulated Charge to Corporate Equity	Total
BALANCE—September 30, 2017	$320,786,000	$(510,396,000)	$(189,610,000)
Change in corporate equity	4,180,000		4,180,000
Credit to corporate equity for pension and retiree medical plans (Notes 4 and 5)		149,259,000	149,259,000
BALANCE—September 30, 2018	324,966,000	(361,137,000)	(36,171,000)
Change in corporate equity	57,025,000		57,025,000
Charge to corporate equity for pension and retiree medical plans (Notes 4 and 5)		(171,869,000)	(171,869,000)
BALANCE—September 30, 2019	$381,991,000	$(533,006,000)	$(151,015,000)

See notes to financial statements.

THE AEROSPACE CORPORATION

STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED SEPTEMBER 30, 2019 AND 2018

	2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES:		
Change in corporate equity	$ 57,025,000	$ 4,180,000
Adjustments to reconcile change in corporate equity to net cash provided by operating activities:		
Depreciation and amortization	45,541,000	43,336,000
Loss on disposal and write-off of property and equipment	251,000	1,325,000
Realized and unrealized gain on investments held in trust for nonqualified benefit plans—net	(835,000)	(1,203,000)
Changes in operating assets and liabilities:		
Accounts receivable	16,629,000	(2,438,000)
Reimbursable costs and fees	3,507,000	(21,001,000)
Noncontractual receivables and other assets	(3,340,000)	(672,000)
Employee benefit assets	5,631,000	(5,631,000)
Prepaid expenses and deposits	(2,945,000)	(3,620,000)
Accounts payable and accrued expenses	(2,827,000)	3,344,000
Accrued payroll	2,823,000	918,000
Accrued vacation	429,000	1,615,000
Other accrued liabilities	2,130,000	1,381,000
Accrued employee benefit obligations	(30,021,000)	28,058,000
Other long-term liabilities	(151,000)	(828,000)
Net cash provided by operating activities	93,847,000	48,764,000
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of investments held in trust for nonqualified benefit plans	(6,605,000)	(6,256,000)
Sales of investments held in trust for nonqualified benefit plans	6,450,000	2,485,000
Purchases of short-term investments	(819,000)	
Sale of short-term investments		19,553,000
Acquisition of property and equipment	(52,952,000)	(40,240,000)
Proceeds from sale of property and equipment	27,000	64,000
Net cash used in investing activities	(53,899,000)	(24,394,000)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from lines of credit borrowings	77,500,000	35,000,000
Repayment of lines of credit borrowings	(77,500,000)	(35,000,000)
Repayment of long-term debt	(10,948,000)	(11,168,000)
Net cash used in financing activities	(10,948,000)	(11,168,000)
NET INCREASE IN CASH AND CASH EQUIVALENTS	29,000,000	13,202,000
CASH AND CASH EQUIVALENTS—Beginning of year	33,917,000	20,715,000
CASH AND CASH EQUIVALENTS—End of year	$ 62,917,000	$ 33,917,000

See notes to financial statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

General—The Aerospace Corporation (the "Corporation") is an independent, nonprofit corporation created in 1960 at the initiative of the Secretary of the United States Air Force (the "Air Force") to meet special long-term research and development needs in establishing the nation's military space program that cannot be satisfied by any government or contractor resource. The Corporation's primary customers are the Space and Missile Systems Center of the Air Force Space Command (SMC) and the National Reconnaissance Office; the Corporation also provides technical support to space related programs managed by other agencies, international organizations, and governments when in the national interest.

Basis of Presentation—The Corporation's financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP).

Cash and Cash Equivalents—The Corporation considers bank deposits with maturities of 90 days or less at the date of purchase to be cash equivalents. As of September 30, 2019, the Corporation held approximately $62,666,000 of deposits that were uninsured and uncollateralized. Cash accounts that are restricted as to use are not considered to be cash equivalents.

Short-Term Investments—The Corporation maintains short-term investments of highly liquid securities, such as money market funds or deposits that generally have an original maturity beyond 90 days and less than one year for liquidity purposes. These short-term investments are not considered cash equivalents. Short-term investments are accounted for in accordance with Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 320-958, *Investments—Debt and Equity Securities—Not-for-Profit Entities*. These investments are carried at fair market value.

Accounts Receivable—Accounts receivable consists of billed amounts due from customers.

Reimbursable Costs and Fees—Reimbursable costs and fees consist of unbilled amounts due from customers.

Property and Equipment—Property and equipment are recorded at cost. Major additions and betterments are capitalized; maintenance and repairs are expensed. The Corporation uses both straight-line and accelerated methods of depreciation over the following useful lives:

Buildings and improvements	10–39 years
Equipment	4–17 years

Leasehold improvements are amortized using the straight-line method over the estimated useful life of the asset or the term of the lease, whichever is shorter.

Construction Servicing Funds—These funds are restricted by the Corporation for use in constructing new facilities owned by the Corporation (see Note 3). Any remaining balance in the account upon completion of construction will be transferred to the Corporation's unrestricted cash accounts.

Prepaid Land Infrastructure Costs—Prepaid land infrastructure costs represent payments made to the Colorado Springs Airport Authority for costs incurred to prepare a 16-acre parcel of land for development (see Note 3). The Corporation holds an option (the "Option") to lease this parcel, which lies adjacent to an already developed parcel that the Corporation leases under a 50-year lease. The terms of the Option, which expires in 2056, include a provision for the Corporation to be refunded these prepaid costs, plus annual interest at 5% through 2023 in the event that the Corporation does not exercise the Option and the land is leased by another party. No interest has been recorded on this balance, as it has not been determined whether the Corporation will exercise this option.

Impairment of Long-Lived Assets—The Corporation evaluates long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. If the future estimated cash flows (undiscounted and without interest charges) are less than the carrying value, a write-down is recorded to reduce the related asset to its estimated fair value. No impairment of long-lived assets was recorded during the years ended September 30, 2019 and 2018.

Investments—Investments, including investments held in trust for nonqualified benefit plans and investments included in the qualified defined benefit plans (see Notes 4, 5, and 11), are carried at fair value based upon quoted market prices, or based upon values provided by third-party pricing services for such securities, or the net asset values reported by the fund managers as of the financial statement dates and recent transaction prices. Investment securities are exposed to various risks, such as interest rate, credit, and overall market volatility. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the balance sheets.

Operating Lease Payments—The Corporation accounts for rent on operating leases in accordance with FASB ASC 840, *Leases*, which requires total payments over the life of the lease to be expensed on a straight-line basis. Because most operating leases contain rent payments that escalate each year, lease expense for a particular year usually will not equal cash payments made for rent in that year. The cumulative excess of lease expense over cash rent paid is recorded as a liability in the balance sheets. The current and long-term portions of this liability are carried in the balance sheets in accounts payable and accrued expenses and other long-term liabilities, respectively.

Contract Revenue Recognition—Revenue from contracts is derived primarily from technical services provided to or for governmental agencies. The Corporation recognizes revenue on the basis of allowable incurred costs (including contributions and transfers to pension and postretirement benefit trusts), plus fee. Revenue under an annual Air Force contract was $1,009,546,000 and $960,110,000 for the years ended September 30, 2019 and 2018, respectively.

Nonreimbursable Costs—Nonreimbursable costs are composed of normal operating items that, by law, regulation, contract, or administrative agreement, are not reimbursable when paid under government contracts.

Patent and Royalty Revenue—Patent and royalty revenue is recognized by the Corporation when there is a contractual agreement in place and the following conditions have been met: the Corporation has fulfilled its obligations under the contract, the fee or royalty amount is fixed or determinable, and collectability is reasonably assured. Patent and royalty revenue was $69,000 and $110,000 for the years ended September 30, 2019 and 2018, respectively, and is included in other income on the statements of operations.

Income and Excise Taxes—The Corporation is a nonprofit corporation determined to be exempt from California and federal income taxes under Section 23701(d) of the California Revenue and Taxation Code and Section 501(c)(3) of the Internal Revenue Code. The Internal Revenue Service has determined that the Corporation is not a "private foundation" under the Tax Reform Act of 1969. Accordingly, no provision for federal or California income taxes or material federal excise taxes has been made in the financial statements.

Cash Flows—Cash paid for interest during the years ended September 30, 2019 and 2018, amounted to $6,374,000 and $6,891,000, respectively.

As of September 30, 2019 and 2018, accounts payable and accrued expenses included $12,543,000 and $12,034,000, respectively, related to construction in progress and equipment purchases.

Use of Estimates—The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Funded Status of Benefit Plans—In accordance with ASC 715, *Compensation—Retirement Benefits*, the Corporation recognizes the overfunded or underfunded status of single-employer defined benefit postretirement plans as assets or liabilities, respectively, in the balance sheets. Changes in the funded status of the defined benefit plans are recognized in corporate equity in the year in which the change occurs. Changes in the funded status are measured based on the projected benefit obligation for pension plans and the accumulated postretirement benefit obligation for other postretirement plans.

Plan net actuarial gains or losses are amortized to expense on a plan-by-plan basis when they exceed the accounting corridor. The accounting corridor is a defined range within which amortization of net gains and losses is not required. The accounting corridor is equal to 10% of the greater of plan assets or benefit obligations. Gains or losses outside the corridor are subject to amortization over the average period of employee future service. Effective October 1, 2018, due to plan amendments, the amortization period will be based on the average future lifetime of the plan populations. The Corporation's funding policy is to contribute the reimbursable amount under the Cost Accounting Standards (CAS), and where applicable, to meet any minimum required contribution levels.

Liquidity and Availability of Resources—The Corporation's financial assets that are available within one year of the balance sheet date consist of cash, short-term investments, accounts receivable, and reimbursable costs. None of these assets have restrictions that make them unavailable for general expenditure within one year of the balance sheet date. Cash in excess of daily requirements is invested in money market or overnight accounts. In addition, the Corporation has $80 million in lines of credit that are available to meet liquidity needs if required (see Note 6). The Corporation also has a $588,000 STEM Endowment Fund (see Notes 3 and 12) that is restricted (via Board of Trustees direction) from use for general expenditures. The Corporation has long-term debt (see Notes 8 and 11) which is subject to certain financial covenants. The Corporation was in compliance with these covenants as of September 30, 2019.

Functional Expenses—Reimbursable costs included on the statements of operations are presented by natural classification. All direct costs are considered contract related costs. Included in indirect support and administrative costs are $46 million of management and general costs for the year ended September 30, 2019. Certain costs included in indirect support and administrative costs, such as labor, depreciation, and occupancy, are allocated based on employee headcount, estimated usage, or square footage, depending upon the type of cost.

Subsequent Events—The Corporation reports subsequent events in accordance with ASC 855, *Subsequent Events*, which establishes principles and requirements for evaluating and reporting subsequent events and distinguishes which subsequent events should be recognized in the financial statements versus which subsequent events should be disclosed in the financial statements.

For the year ended September 30, 2019, subsequent events were evaluated by management through December 13, 2019, the date these financial statements were available for release.

Recent Accounting Pronouncements—In May 2014, the FASB issued Accounting Standards Update (ASU) No. 2014-09, *Revenue from Contracts with Customers*, which requires an entity to recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU No. 2014-09 supersedes most existing revenue recognition guidance, including industry-specific revenue recognition guidance. In August 2015, the FASB issued ASU No. 2015-14, *Revenue from Contracts with Customers*, which deferred the effective date of ASU No. 2014-09 by one year to annual reporting periods beginning after December 15, 2018, for private entities. Early adoption is permitted for fiscal years beginning after December 15, 2016. Further, the application of ASU No. 2014-09 permits the use of either the full retrospective or modified-retrospective approach. The Corporation will adopt this standard effective October 1, 2019 and has not yet selected a transition method nor has it determined the impact the adoption of ASU No. 2014-09 will have on its financial statements, if any.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*. This ASU requires that lessees recognize assets and liabilities for leases with lease terms greater than 12 months in the balance sheet and also requires improved disclosures to help users of financial statements better understand the amount, timing, and uncertainty of cash flows arising from leases. In November 2019, the FASB issued ASU No. 2019-10, *Financial Instruments—Credit Losses, Derivatives and Hedging, and Leases,* which deferred the effective date of ASU No. 2016-02 by one year to annual reporting periods beginning after December 15, 2020, for private entities. Early adoption is permitted. The Corporation will adopt this standard effective October 1, 2021 and has not determined the impact that the adoption of this ASU will have on its financial statements.

In August 2016, the FASB issued ASU No. 2016-14, *Presentation of Financial Statements of Not-for-Profit Entities*, which provides guidance for the presentation requirements for financial statements of not-for-profit entities. ASU No. 2016-14 was effective for the Corporation for the year ended September 30, 2019 and had no material effect on the financial statements.

In March 2017, the FASB issued ASU No. 2017-07, *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*, which requires an entity to disaggregate the service cost component from the other components of net periodic benefit cost for employer-sponsored pension and other postretirement benefit plans and report the service cost component in the statement of operations with other compensation costs arising from services rendered by related employees during the period. Other components of net periodic benefit cost must be presented separately from the service cost component and outside a subtotal of income from operations, if one is presented. ASU No. 2017-07 will be applicable for the Corporation for the year ending September 30, 2020. The Corporation is in the process of assessing the impact that the adoption of this ASU will have on its financial statements.

In August 2018, the FASB issued ASU No. 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*, which requires an entity to capitalize certain implementation costs incurred in a hosting arrangement that is a service contract. This update is effective for fiscal years beginning after December 15, 2020. Early adoption is permitted. The Corporation is in the process of assessing the impact that the adoption of this ASU will have on its financial statements.

2. PROPERTY AND EQUIPMENT

Property and equipment as of September 30, 2019 and 2018, consist of the following:

	2019	**2018**
Land and improvements	$ 66,103,000	$ 66,103,000
Buildings and improvements	495,183,000	483,650,000
Equipment	535,863,000	506,800,000
Construction in progress	15,513,000	12,526,000
Total property and equipment	1,112,662,000	1,069,079,000
Accumulated depreciation	(600,461,000)	(564,582,000)
Property and equipment—net	$ 512,201,000	$ 504,497,000

During the years ended September 30, 2019 and 2018, the Corporation disposed of approximately $11 million and $21 million of fixed assets, respectively, that were nearly fully depreciated.

3. OTHER ASSETS

Other assets as of September 30, 2019 and 2018, consist of the following:

	2019	2018
Other assets	$7,808,000	$4,719,000
Construction servicing funds	533,000	529,000
STEM Endowment Fund (Notes 1 and 12)	588,000	597,000
Prepaid land infrastructure costs	757,000	757,000
Total other assets	$9,686,000	$6,602,000

4. RETIREMENT PLANS

Net periodic pension and retiree medical expense for the years ended September 30, 2019 and 2018, consists of the following:

	2019	2018
Aerospace Employees' Retirement Plan	$ 25,140,000	$ 75,091,000
Corporate Officers' Retirement Plan	4,744,000	4,360,000
Aerospace Retiree Medical Plan	(3,675,000)	2,367,000
Pension and retiree medical expense	$ 26,209,000	$ 81,818,000

The charge (credit) to corporate equity for pension and retiree medical plans for the years ended September 30, 2019 and 2018, consists of the following:

	2019	2018
Aerospace Employees' Retirement Plan	$ 136,668,000	$(106,163,000)
Corporate Officers' Retirement Plan	1,941,000	(1,459,000)
Aerospace Retiree Medical Plan	33,260,000	(41,637,000)
Credit to corporate equity	$ 171,869,000	$(149,259,000)

Employer contributions to the qualified benefit plan (Aerospace Employees' Retirement Plan (AERP)) and transfers to the investments held in trust for the nonqualified benefit plans (Corporate Officers' Retirement Plan (CORP)) for the years ended September 30, 2019 and 2018, consist of the following:

	2019	2018
Aerospace Employees' Retirement Plan	$45,793,000	$57,674,000
Corporate Officers' Retirement Plan	4,961,000	5,488,000
Total employer contributions and transfers	$50,754,000	$63,162,000

The expected employer contributions to the qualified benefit plan and transfers to the investments held in trust for nonqualified benefit plans for the year ending September 30, 2020, consist of the following:

Aerospace Employees' Retirement Plan	$40,884,000
Corporate Officers' Retirement Plan	4,572,000
Total expected employer contributions and transfers	$45,456,000

As of September 30, 2019 and 2018, the Corporation's retirement plans, using a plan measurement date of September 30, are summarized as follows:

AERP—The Corporation has a defined benefit retirement plan, AERP, covering substantially all employees hired prior to January 1, 1993. The Corporation amended AERP effective October 1, 2005, to include employees hired after that date at a lower benefit accrual rate; employees hired after January 1, 1993, were given the opportunity to elect to participate in AERP at the same lower accrual rate beginning on October 1, 2005. The Corporation currently funds the higher of the minimum required contribution under Employee Retirement Income Security Act of 1974 (ERISA) or the amount allowable under the CAS. Actuarial gains and losses and past service costs have been amortized over periods prescribed by law ranging from 5 to 30 years. Effective October 1, 2008, these amounts are amortized over seven years in accordance with the Pension Protection Act for the purpose of determining the minimum required ERISA contribution.

Effective October 1, 2018, the Corporation amended AERP to cease benefit accruals to participants who entered AERP beginning January 1, 1993 and significantly reduce benefit accruals to participants who entered AERP prior to January 1, 1993, with such participants ceasing to accrue benefits on October 1, 2023. Consequently, AERP is closed to new participants. This amendment triggered a pension curtailment which required a remeasurement of the benefit obligation as of September 30, 2018.

Net periodic pension expense for the years ended September 30, 2019 and 2018, includes the following components:

	2019	**2018**
Service cost	$ 14,619,000	$ 52,672,000
Interest cost	139,026,000	141,591,000
Expected return on plan assets	(134,522,000)	(140,349,000)
Amortization of prior service credit	(868,000)	
Amortization of net actuarial loss	6,885,000	21,177,000
Net periodic pension expense	$ 25,140,000	$ 75,091,000

Changes in plan assets and benefit obligations recognized in charge to corporate equity for the years ended September 30, 2019 and 2018, include the following components:

	2019	**2018**
Net loss (gain) arising during period	$ 142,685,000	$ (80,933,000)
New prior service cost		(4,053,000)
Amortization of prior service credit	868,000	
Amortization of net loss	(6,885,000)	(21,177,000)
Total recognized in charge to corporate equity	$ 136,668,000	$(106,163,000)

AERP's funded status and amounts reflected in the balance sheets as of September 30, 2019 and 2018, are as follows:

	2019	**2018**
Changes in benefit obligation:		
Benefit obligation—beginning of year	$ 2,583,134,000	$ 2,678,641,000
Service cost	14,619,000	52,672,000
Interest cost	139,026,000	141,591,000
Benefits and expenses paid	(164,898,000)	(156,008,000)
Actuarial loss (gain)	141,019,000	(100,094,000)
Plan amendments		(4,053,000)
Plan curtailments		(29,615,000)
Benefit obligation—end of year	$ 2,712,900,000	$ 2,583,134,000
Changes in plan assets:		
Fair value of plan assets—beginning of year	$ 2,137,778,000	$ 2,144,539,000
Employer contributions	45,793,000	57,674,000
Actual return on plan assets	132,798,000	91,498,000
Plan participants' contributions	58,000	75,000
Benefits and expenses paid	(164,898,000)	(156,008,000)
Fair value of plan assets—end of year	$ 2,151,529,000	$ 2,137,778,000
Funded status (accrued employee benefit obligation)	$ (561,371,000)	$ (445,356,000)
Amounts not yet reflected in net periodic benefit cost and included in accumulated charge to corporate equity consist of:		
Prior service credit	$ 2,663,000	$ 4,053,000
Net loss	(559,947,000)	(424,669,000)
Accumulated charge to corporate equity	(557,284,000)	(420,616,000)
Cumulative employer contributions less than net periodic benefit cost	(4,087,000)	(24,740,000)
Net obligation recognized in the balance sheets	$ (561,371,000)	$ (445,356,000)

The accumulated benefit obligation for AERP was $2,701,142,000 and $2,568,494,000 as of September 30, 2019 and 2018, respectively.

AERP provides both fixed and variable benefits. Variable benefits increase (decrease) each year based on the excess (deficit) of actual return on variable plan assets over 4%. Variable benefits are assumed to increase each year based on the assets' earning the expected rate of return and are then discounted at the expected rate of return. AERP is not subject to investment risk or interest rate risk with respect to the variable benefits as these are borne by AERP participants. Variable benefit obligations comprise approximately 53% of AERP obligations.

Weighted-average assumptions used to determine benefit obligations as of September 30, 2019 and 2018, are as follows:

	2019	2018
Discount rate for fixed benefits	3.20 %	4.30 %
Discount rate for variable benefits	6.50	6.50
Weighted-average discount rate	4.94	5.54
Rate of compensation increase	2.05	2.74
Rate of increase of variable benefits	2.40	2.40

Weighted-average assumptions used to determine net cost for the years ended September 30, 2019 and 2018, are as follows:

	2019	2018
Discount rate for fixed benefits	4.30 %	3.90 %
Discount rate for variable benefits	6.50	6.75
Weighted-average discount rate	5.54	5.48
Expected long-term rate of return on assets	6.50	6.75
Rate of compensation increase	2.74	2.60
Rate of increase of variable benefits	2.40	2.64

To develop the expected long-term rate of return on asset assumptions, the Corporation considered the historical returns and the future expectation for returns for each asset class, as well as the target asset allocation of the pension portfolio.

Asset allocations for AERP by asset category as of September 30, 2019 and 2018, are as follows:

Asset Category	**2019**	**2018**
Equity	46 %	48 %
Fixed-income	50	48
Real estate	4	4
Total	100 %	100 %

The asset allocation in the investment policy aims to provide, over the long-term, investment returns that allow AERP's variable benefit to meet or surpass inflation and keep AERP well-funded. The primary asset classes used to attain these objectives were equity, fixed-income, and real estate. During 2018 and 2019, the target asset class allocations were 48%, 48%, and 4%.

Alternative Investments in Benefit Plans—The plan assets for AERP include alternative investments (see Note 11), consisting of an investment in a privately held real estate fund of $89,597,000 and $87,371,000 as of September 30, 2019 and 2018, respectively.

The Corporation expects to contribute $40,884,000 to AERP for the fiscal year ending September 30, 2020. Benefit payments, which reflect expected future service, as appropriate, are expected to be paid as follows:

Years Ending September 30	
2020	$ 161,557,000
2021	163,931,000
2022	167,045,000
2023	170,368,000
2024	173,654,000
2025–2029	909,486,000
Total	$1,746,041,000

The amounts expected to be recognized as components of net periodic benefit cost over fiscal year 2020 include the following:

Prior service credit	$ 868,000
Net loss	11,030,000

CORP—The Corporation established CORP in 1981 to provide monthly retirement benefit payments to corporate officers based on salary and length of service. Payments to retirees are funded annually from the investments held in trust for nonqualified benefit plans, of which the Corporation, not CORP, is the beneficiary and to which the Corporation transfers assets annually. These assets are primarily invested in equity securities and fixed-income instruments and are included in investments held in trust for nonqualified benefit plans in the balance sheets.

Effective September 10, 2010, the Corporation established a new element of CORP, CORP IV. CORP IV currently has 16 officers as participants, and it is anticipated that future officers will participate in CORP IV. CORP IV is a nonqualified defined contribution plan with a fixed contribution rate equal to 25% prior to January 1, 2016, and 35% on or after January 1, 2016, of the participating officer's annual salary plus certain bonuses. The Board of Trustees may also make discretionary contributions under CORP IV. Interest is credited at a rate equal to the average monthly Moody's Aa long-term corporate bond yield for the 12 months immediately preceding the calendar year for which the interest is credited. Benefits under CORP IV generally vested as follows:

50% at 7 years of service as a participant
75% at 12 years of service as a participant
85% at 17 years of service as a participant or on 62nd birthday, if earlier
100% at age 65 or agreed upon retirement date

Effective September 30, 2018, the Corporation amended CORP IV. The fixed contribution rate became equal to 25% of the participating officer's annual salary plus certain bonuses since January 1, 2018, and of the participating officer's annual salary only since January 1, 2019. Benefits already earned under CORP IV vested 50% on the last business day of December 2018 and the remaining 50% will vest on the last business day of December 2019. Benefits earned December 31, 2018, or later, will generally vest as follows:

Awards at year 1 and 2 of service will vest in year 4
Awards at year 3 and 4 of service will vest in year 6
Awards at year 5 and 6 of service will vest in year 8
Awards at year 7, 8, 9, and 10 of service will vest in year 10
Awards at year 11 of service and thereafter will vest immediately
In addition, participants 65 or older, will vest immediately after 4 years of service

Net periodic pension expense for the years ended September 30, 2019 and 2018, includes the following components:

	2019	2018
Service cost	$ 1,992,000	$ 2,357,000
Interest cost	1,448,000	1,374,000
Amortization of prior service cost	292,000	143,000
Amortization of net actuarial loss	318,000	486,000
Settlement loss recognized	694,000	
Net periodic pension expense	$ 4,744,000	$ 4,360,000

The settlement loss recognized for year ended September 30, 2019, was caused by tax payments made by the plan on behalf of participants during year ended September 30, 2019.

Changes in plan assets and benefit obligations recognized in charge to corporate equity for the years ended September 30, 2019 and 2018, include the following components:

	2019	2018
Net loss (gain) arising during period	$ 3,245,000	$ (979,000)
New prior service cost		149,000
Amortization of prior service cost	(292,000)	(143,000)
Amortization of net loss	(1,012,000)	(486,000)
Total recognized in charge to corporate equity	$ 1,941,000	$ (1,459,000)

CORP's funded status and amounts reflected in the balance sheets as of September 30, 2019 and 2018, are set forth as follows:

	2019	2018
Changes in benefit obligation:		
Benefit obligation—beginning of year	$ 38,834,000	$ 38,418,000
Service cost	1,992,000	2,357,000
Interest cost	1,448,000	1,374,000
Benefits paid	(2,471,000)	(2,485,000)
Plan settlements	(3,979,000)	
Plan amendments		149,000
Actuarial loss (gain)	3,245,000	(979,000)
Benefit obligation—end of year	$ 39,069,000	$ 38,834,000
Fair value of plan assets—end of year	$ -	$ -
Funded status (accrued employee benefit obligation)	$ (39,069,000)	$ (38,834,000)
Accrued employee benefit obligation:		
Current liabilities	$ (5,336,000)	$ (6,008,000)
Noncurrent liabilities	(33,733,000)	(32,826,000)
Funded status recognized in the balance sheets	$ (39,069,000)	$ (38,834,000)
Amounts not yet reflected in net periodic benefit cost and included in accumulated charge to corporate equity consist of:		
Prior service cost	$ (383,000)	$ (675,000)
Net loss	(9,003,000)	(6,770,000)
Accumulated charge to corporate equity	(9,386,000)	(7,445,000)
Cumulative net periodic benefit cost in excess of employer-funded benefits paid	(29,683,000)	(31,389,000)
Net obligation recognized in the balance sheets	$ (39,069,000)	$ (38,834,000)

The accumulated benefit obligation for CORP was $39,069,000 and $38,742,000 as of September 30, 2019 and 2018, respectively.

Weighted-average assumptions used to determine benefit obligations as of September 30, 2019 and 2018, are as follows:

	2019	2018
Discount rate	3.10 %	4.30 %
Rate of compensation increase	3.00	3.00

Weighted-average assumptions used to determine net cost for the years ended September 30, 2019 and 2018, are as follows:

	2019	2018
Discount rate	4.30 %	3.70 %
Rate of compensation increase	3.00	3.00

The primary asset classes utilized in this plan are equity and fixed-income with target allocations of 60% and 40%, respectively. Asset allocations for CORP by asset category as of September 30, 2019 and 2018, are as follows:

Asset Category	**2019**	**2018**
Equity	57 %	49 %
Fixed-income	38	32
Short-term investments [1]	5	19
Total	100 %	100 %

[1] Includes operating cash for near-term benefit payments. The investment allocation excluding operating cash was approximately 60% equity and 40% fixed-income.

The Corporation expects to transfer $4,572,000 to investments held in trust for nonqualified benefit plans during the fiscal year ending September 30, 2020. The Corporation expects to disburse $5,336,000 from investments held in trust for nonqualified benefit plans to CORP for the fiscal year ending September 30, 2020. Benefit payments, which reflect expected future service, as appropriate, and which are expected to be paid from the assets held in trust for nonqualified benefit plans and other future transfers from the Corporation, are as follows:

Years Ending September 30	
2020	$ 5,336,000
2021	2,457,000
2022	5,657,000
2023	3,470,000
2024	5,676,000
2025–2029	18,355,000
Total	$40,951,000

The amounts expected to be recognized as a component of net periodic benefit cost over fiscal year 2020 include the following:

Prior service cost	$ 143,000
Net loss	593,000

Aerospace Savings Account Plan (ASAP)—The Corporation's personnel hired or rehired on or after January 1, 1993, are eligible to participate in ASAP, a defined contribution profit-sharing plan. For fiscal years through 2004, in which an employee worked at least 1,000 hours, the Corporation funded contributions to ASAP equal to 8% of base compensation. Beginning on October 1, 2005, there were two levels of Corporation-funded contributions to ASAP. Employees hired between January 1, 1993, and March 31, 2005, received a contribution of 8% of compensation as defined in the ASAP; employees hired on or after April 1, 2005, received a contribution of 4% of defined compensation. Employees hired between January 1, 1993, and March 31, 2005, were given the opportunity to elect to receive a 4% ASAP contribution in addition to simultaneously participating in AERP beginning on October 1, 2005. In fiscal year 2005, ASAP was amended to remove the 1,000 hours minimum requirement for full-time employees. Employees are immediately vested in the employer contributions, which are invested at the direction of the employee. The Corporation's expense relating to this plan amounted to $46,527,000 and $20,937,000 for the years ended September 30, 2019 and 2018, respectively, and is included in indirect support and administrative costs in the statements of operations.

Effective October 1, 2018, the Corporation changed the plan name to the Aerospace Corporation 401(k) Plan (401(k) Plan) and amended the plan to change the Corporation contribution rates to all participants during the time period of October 1, 2018, to December 31, 2018, as follows:

- 8% of eligible compensation at less than 5 years of service
- 10% of eligible compensation at 5 years of service through less than 25 years of service
- 12% of eligible compensation at 25 years of service or more

Beginning on January 1, 2019, the plan permits 401(k) participant contributions to the plan. The Corporation makes contributions as follows:

- 5% of eligible compensation at less than 5 years of service
- 7% of eligible compensation at 5 years of service through less than 25 years of service
- 9% of eligible compensation at 25 years of service or more
- In addition, the Corporation provides a matching contribution that is 100% of a participant's 401(k) contribution for up to 3% of the participant's eligible compensation

Further, effective January 1, 2019, the 401(k) Plan's plan year-end changed to December 31.

Aerospace Corporation Deferred Compensation 457(b) Plan (457(b) Plan)—The Corporation established a nonqualified deferred compensation plan, 457(b) Plan, on October 1, 2016. The 457(b) Plan allows participants to set aside eligible compensation in a tax-deferred account for retirement and is a means for participants to supplement their retirement savings. Participation is limited to a select group of employees and is voluntary. The amount that can be set aside is subject to an annual limit established in the Internal Revenue Code. Participant deferrals and the associated earnings are 100% vested. Participant deferrals are invested in certain investment funds as directed by the participants. The balance of the participants' savings is considered an asset of the Corporation, is included in investments held in trust for nonqualified benefit plans in the balance sheets, and is at risk in the event of the Corporation's bankruptcy or insolvency.

The following table summarizes the 457(b) Plan amounts in the balance sheets for the years ended September 30, 2019 and 2018:

	2019	2018
Accrued employee benefit obligation:		
Current liabilities	$ (178,000)	$ (22,000)
Noncurrent liabilities	(2,934,000)	(1,446,000)
Total accrued employee benefit obligation	$ (3,112,000)	$ (1,468,000)

5. AEROSPACE RETIREE MEDICAL PLAN

Aerospace Retiree Medical Plan (RMP)—The Corporation sponsors RMP, which provides certain payments that are capped at amounts that are predetermined on an annual basis, towards health care premiums for retirees and eligible dependents. Employees may become eligible for benefits if they retire after having attained specified service requirements while they worked for the Corporation.

Beginning in fiscal year 1987, the Corporation began accruing and funding annual amounts mutually agreed to by the Corporation and its principal customer, the Air Force.

Changes in plan assets and benefit obligations recognized in charge to corporate equity for the years ended September 30, 2019 and 2018, include the following components:

	2019	2018
Amortization of net gain	$ 3,505,000	$ 389,000
Net loss (gain) arising during period	29,755,000	(42,026,000)
Total recognized in charge to corporate equity	$ 33,260,000	$(41,637,000)

RMP's benefit obligation, plan participants' contributions, gross medical premiums, employer contributions, fair value of plan assets, funded status, and amounts not yet reflected in net periodic benefit cost and included in accumulated charge to corporate equity as of September 30, 2019 and 2018, are as follows:

	2019	**2018**
Benefit obligation—end of year	$198,823,000	$167,324,000
Plan participants' contributions	$ 5,842,000	$ 5,373,000
Gross medical premiums	$ (13,192,000)	$ (12,932,000)
Employer contributions	$ -	$ -
Fair value of plan assets—end of year	$174,869,000	$172,955,000
Funded status (accrued retiree medical benefit (obligation) asset)	$ (23,954,000)	$ 5,631,000
Amounts not yet reflected in net periodic benefit cost and included in accumulated charge to corporate equity consist of:		
Net gain	$ 33,664,000	$ 66,924,000
Accumulated credit to corporate equity	$ 33,664,000	$ 66,924,000

Weighted-average assumptions used to determine benefit obligations as of September 30, 2019 and 2018, are as follows:

	2019	**2018**
Discount rate	3.30 %	4.40 %

Weighted-average assumptions used to determine net cost for the years ended September 30, 2019 and 2018, are as follows:

	2019	**2018**
Discount rate	4.40 %	4.00 %
Expected long-term rate of return on assets	6.50	6.50

To develop the expected long-term rate of return on asset assumptions, the Corporation considered the historical returns and the future expectation for returns for each asset class, as well as the target asset allocation of the pension portfolio.

Assumed health care cost trend rates used in evaluation of benefit obligations as of September 30, 2019 and 2018, include the following:

	2019	**2018**
Indemnity plan:		
Health care cost trend rate assumed for next year	6.75 %	7.00 %
Rate to which the cost trend is assumed to decline (the ultimate rate)	4.50 %	4.50 %
Year that rate reaches the ultimate trend rate	2032	2032
Health maintenance organization plan:		
Health care cost trend rate assumed for next year	6.75 %	7.00 %
Rate to which the cost trend is assumed to decline (the ultimate rate)	4.50 %	4.50 %
Year that rate reaches the ultimate trend rate	2032	2032

Assumed health care cost trend rates used in evaluation of net cost for the years ended September 30, 2019 and 2018, include the following:

	2019	**2018**
Indemnity plan:		
Health care cost trend rate assumed for next year	7.00 %	7.25 %
Rate to which the cost trend is assumed to decline (the ultimate rate)	4.50 %	4.50 %
Year that rate reaches the ultimate trend rate	2032	2031
Health maintenance organization plan:		
Health care cost trend rate assumed for next year	7.00 %	7.25 %
Rate to which the cost trend is assumed to decline (the ultimate rate)	4.50 %	4.50 %
Year that rate reaches the ultimate trend rate	2032	2031

Asset allocations for RMP by asset category as of September 30, 2019 and 2018, are as follows:

Asset Category	**2019**	**2018**
Equity	61 %	61 %
Fixed-income	39	39
Total	100 %	100 %

The asset allocation in the investment policy aims to keep the RMP well-funded over the long term. The primary asset classes utilized to attain these objectives are equity and fixed-income, with target allocations of 60% and 40%, respectively.

The Corporation does not expect to contribute to RMP for the fiscal year ending September 30, 2020. Benefit payments, which reflect expected future service, as appropriate, are expected to be paid as follows:

Years Ending September 30	
2020	$ 7,938,000
2021	8,089,000
2022	8,244,000
2023	8,405,000
2024	8,577,000
2025–2029	45,741,000
Total	$86,994,000

The amount expected to be recognized as a component of net periodic benefit cost over fiscal year 2020 includes the following:

Prior service credit	$ -
Net gain	961,000

6. CREDIT FACILITIES

The Corporation has revolving lines of credit available from two financial institutions; aggregate maximum borrowings under these lines are $80,000,000 (see Note 1). The lines of credit are unsecured and expire on July 31, 2023. At the Corporation's option, interest on each borrowing is calculated at either the financial institutions' reference rate (which was 5.00% as of September 30, 2019) or they may borrow under the London InterBank Offered Rate (LIBOR), plus 1.50%, for periods of one to six months. As of September 30, 2019, rates for the one- to six-month LIBOR rates ranged from 2.02% to 2.06%. The lines of credit contain restrictive covenants, including the ratio of total debt to cash flow and the ratio of cash flow to debt service payments; charges to corporate equity for pension and retiree medical plans and pension and retiree medical expense and income are excluded from corporate equity and change in corporate equity for purposes of the covenants. There were no outstanding borrowings under the lines of credit as of September 30, 2019 and 2018.

As of September 30, 2019, the Corporation had issued four irrevocable letters of credit totaling $1,974,000 as security for performance under various agreements (see Note 9). The letters of credit expire at various dates through July 9, 2020, and contain automatic extensions that are exercisable at the option of the beneficiary of the letters of credit. Should these irrevocable letters of credit expire without the terms of the related agreements being satisfied, or in the event of default of the terms of the related agreements, the beneficiary of the letters of credit may draw upon them. Annual fees on outstanding letters of credit are 1.25% of the face value of each letter of credit. Should the letters of credit be drawn upon, interest on the borrowings is calculated at LIBOR, plus 1.50%, depending upon date of issuance, and are due upon demand.

7. SPECIAL RESTRICTIONS

The Corporation is incorporated in the state of California as a nonprofit corporation. The Articles of Incorporation and contracts with the Air Force place certain restrictions on the Corporation.

Excerpts from the Articles of Incorporation:

SECOND—"The purposes of the Corporation are exclusively scientific, as herein set forth: to engage in, assist, and contribute to the support of scientific activities and projects for, and to perform and engage in research, development, and advisory services to or for, the United States government."

SIXTH—"Upon the dissolution or winding-up of the Corporation, after adequately providing for its debts and obligations, the Trustees or person or persons in charge of liquidation shall turn over any remaining assets to the United States of America as the Secretary of the Air Force may direct."

Excerpt from the Air Force Prime Contract—"The Aerospace Corporation will not dispose, transfer, or assign real property without first obtaining the consent of the Secretary of the Air Force. The Aerospace Corporation's Trustees shall have the right in time of financial need to employ The Aerospace Corporation's vested property as security in borrowing to meet its obligations within the purposes set forth in its Articles of Incorporation. In order to provide the USAF with the opportunity to eliminate the need for such action, at least sixty (60) days prior to any such planned borrowing, the SMC Commander and the contracting officer shall be notified in writing setting forth the purpose and the amount of the borrowing."

8. LONG-TERM DEBT

Long-term debt as of September 30, 2019 and 2018, consists of the following (see Notes 1 and 11):

	2019	2018
6.51% notes payable	$ 43,251,000	$ 47,834,000
4.76% notes payable	18,460,000	20,050,000
4.84% notes payable	18,725,000	20,320,000
3.90% notes payable	11,076,000	12,030,000
3.85% notes payable	11,076,000	12,030,000
3.50% notes payable	7,384,000	8,020,000
3.50% notes payable	7,384,000	8,020,000
Total long-term debt	117,356,000	128,304,000
Less debt issuance costs	(792,000)	(854,000)
Less current portion	(10,728,000)	(10,948,000)
Long-term debt—net of current portion and debt issuance costs	$105,836,000	$116,502,000

Principal maturities of long-term debt (in thousands) as of September 30, 2019, are as follows:

Years Ending September 30	6.51% Notes Payable	4.76% Notes Payable	4.84% Notes Payable	3.90% Notes Payable	3.85% Notes Payable	3.50% Notes Payable	3.50% Notes Payable	Total
2020	$ 4,483	$ 1,560	$ 1,565	$ 936	$ 936	$ 624	$ 624	$ 10,728
2021	4,383	1,530	1,535	918	918	612	612	10,508
2022	4,283	1,500	1,505	900	900	600	600	10,288
2023	4,183	1,470	1,475	882	882	588	588	10,068
2024	4,083	1,440	1,445	864	864	576	576	9,848
Thereafter	21,836	10,960	11,200	6,576	6,576	4,384	4,384	65,916
Total	$43,251	$18,460	$18,725	$11,076	$11,076	$7,384	$7,384	117,356
Debt issuance costs								(792)
Net carrying value								$116,564

The issuance costs related to the notes payable are being amortized on a straight-line basis, which approximates the effective interest method over the term of the related notes.

6.51% Notes Payable—On July 3, 2008, the Corporation issued notes payable of $100,000,000 that are collateralized by the Corporation’s properties in El Segundo, California.

The notes payable bear interest at a fixed rate of 6.51% and will mature on July 3, 2030. Principal payments are due monthly and began in August 2008.

Notes Payable—Other—The Corporation issued six notes payable that are collateralized by the Corporation’s properties in El Segundo, California and Chantilly, Virginia. The notes’ payable amount (original issuance, in thousands), fixed rate, maturity date, principal payment beginning due date, and payment frequency are as follows:

	4.76% Notes Payable (at Issuance)	4.84% Notes Payable (at Issuance)	3.90% Notes Payable (at Issuance)	3.85% Notes Payable (at Issuance)	3.50% Notes Payable (at Issuance)	3.50% Notes Payable (at Issuance)
Issuance date	April 8, 2011	May 26, 2011	July 2, 2012	July 2, 2012	July 10, 2013	July 10, 2013
Notes payable amount	$25,000	$25,000	$15,000	$15,000	$10,000	$10,000
Fixed rate	4.76%	4.84%	3.90%	3.85%	3.50%	3.50%
Maturity date	April 8, 2033	May 26, 2033	April 2, 2033	April 2, 2033	April 2, 2033	April 2, 2033
Beginning payment due	October 2015	December 2015	October 2015	October 2015	October 2015	October 2015
Payment frequency	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly

9. COMMITMENTS AND CONTINGENCIES

Future cash payments on operating leases as of September 30, 2019, are contractually required as follows:

Years Ending September 30	
2020	$13,822,000
2021	9,913,000
2022	7,923,000
2023	5,428,000
2024	3,063,000
Thereafter	20,344,000
Total	$60,493,000

Total lease expense was $17,923,000 and $15,419,000 for the fiscal years ended September 30, 2019 and 2018, respectively (see Note 1).

The Corporation is subject to various claims and contingencies associated with litigation, contract performance, and other issues arising in the normal course of business. The financial statements reflect the treatment of claims and contingencies based on management's view of the expected outcome. If the likelihood of an adverse outcome is probable and the amount is estimable, the Corporation accrues a liability in accordance with FASB ASC 450, *Contingencies*.

The Corporation has entered into agreements with public works agencies to guarantee performance on certain environmental restoration commitments made pursuant to a long-term construction project. These agreements require that the Corporation post cash, letters of credit, or sureties that may be drawn upon should the Corporation fail to perform the environmental restorations as defined in the long-term construction project plans. The Corporation believes the restoration commitments will be fulfilled in the normal course of the construction projects and that the public works agencies will have no cause to draw upon these commitments. As of September 30, 2019, four irrevocable letters of credit expiring through July 9, 2020, had been issued totaling $1,974,000, and cash deposits of $25,000, included in prepaid expenses and other assets in the balance sheets, had been made to satisfy the terms of these public works agreements (see Note 6).

10. SELF-INSURED MEDICAL PLAN

During fiscal year 2014, the Corporation established a self-insured medical plan that covers employees that have selected certain benefit options. A stop-loss policy has been obtained that limits the Corporation's claims per employee, per year, to $350,000. This medical plan is administered through a contractual agreement with a third party. The Corporation is responsible for all claims incurred up to the amount of the stop-loss policy. The Corporation's expense for the self-insured medical plan for the years ended September 30, 2019 and 2018, was $31,123,000 and $29,519,000, respectively, and is included in indirect support and administrative costs in the statements of operations. The Corporation has established a reserve for covered medical claims under the self-insured plan that have been incurred but not reported (IBNR). As of September 30, 2019 and 2018, the reserve for IBNR was $3,537,000 and

$3,258,000, respectively, and is included in accounts payable and accrued expenses in the balance sheets.

11. FAIR VALUE OF FINANCIAL INSTRUMENTS

FASB ASC 820, *Fair Value Measurements and Disclosures,* defines fair value, establishes a market-based framework for measuring fair value, and requires disclosures about fair value measurements. Additionally, in accordance with ASC 715-20-65, *Defined Benefit Plans—General*, the Corporation's pension and postretirement assets have been included in the disclosure below.

ASC 820 establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The statement requires that assets and liabilities carried at fair value be classified and disclosed using a hierarchy based upon the inputs used to measure the fair value.

The Corporation uses valuation techniques based upon observable and unobservable inputs. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect internal market assumptions. Assets are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

The following methods and assumptions were used by management to estimate the fair values of the assets and liabilities in the table below:

Level 1 Fair Value Measurements—Quoted prices for identical instruments in active markets. The fair value of investments is based on market quotes of such investments. Level 1 investments primarily include publicly traded common stock, publicly traded mutual funds, and money market funds.

Level 2 Fair Value Measurements—Quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-derived valuations whose inputs are observable or whose significant value drivers are observable. Level 2 investments consist typically of fixed-income securities. The fair values for fixed-income securities are valued using third-party pricing services. These pricing services use, for example, recent broker-dealer quotations or model-based pricing methods that use significant observable inputs, such as relevant yield curves, credit information of the underlying security, prepayment projections, cash flows, and other security characteristics, to determine fair value as of the last trading day of the year.

Level 3 Fair Value Measurements—Significant valuation inputs are unobservable.

Net Asset Values—The fair market values of commingled funds, short-term investment funds, and the real estate fund were based on the reported net asset value (NAV), which the Corporation uses as a practical expedient as of the balance sheet date. No adjustments were made to the NAV provided by the fund managers of the underlying funds for which NAV was used and none of the investments whose fair value was based upon NAV are expected to be sold at a value materially different from NAV. Investments that are measured at fair value using the NAV per share (or its equivalent) practical expedient have not been categorized in the fair value hierarchy. The fair value amounts presented in the fair value hierarchy tables are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the balance sheets.

Investments in commingled funds and short-term investment funds are valued based on the redemption price of the underlying fund assets. Unit values are determined by the financial institution sponsoring such funds by dividing the funds' net assets at fair value by its units outstanding at the valuation date, commonly referred to as NAV. As of September 30, 2019 and 2018, the fair values of short-term investments of $39,687,000 and $42,009,000, respectively, and commingled funds of $1,351,364,000 and $1,379,531,000, respectively, were based upon NAV. As of September 30, 2019 and 2018, there were no unfunded commitments, all had daily redemption frequencies, and redemption notice periods of five days or less for the short-term investments and the commingled funds, with the exception of one commingled fund with a value of approximately $115,756,000 and $115,832,000, respectively, for which redemptions are made with a 15-day notice period.

The fair value of the real estate fund is based upon the reported NAV. The fair value of the underlying properties of the real estate fund are estimated based upon third-party appraisals. As of September 30, 2019 and 2018, the fair values of the real estate fund of $89,597,000 and $87,371,000, respectively, were based upon NAV. There were no unfunded commitments. Redemptions for the real estate fund may be requested on a full or partial basis each quarter. The redemption request is processed and payment is redeemed generally by the end of the next calendar quarter.

Commingled Funds Strategies—Commingled equity funds held by the employee benefit plans employ individual strategies that may invest broadly in the equity securities of US and non-US companies in a wide range of industries and market capitalizations. Commingled fixed-income funds held by the employee benefit plans may invest in US and non-US fixed-income products in a broad or narrow range of products or sectors (e.g., corporate, US or foreign governments, and mortgage or asset-backed). Fixed-income maturities range from short to long duration depending on individual fund strategy and generally the fixed-income holdings are investment grade.

Items measured at fair value on a recurring basis subject to the disclosure requirements of ASC 820 as of September 30, 2019, are as follows (in thousands):

	Level 1	Level 2	Level 3	Total
Corporate assets—current assets:				
Short-term investments [1]	$ 19,564	$ -	$ -	$ 19,564
Investments held in trust for nonqualified plans:				
Short-term investments [2]	848			848
Publicly traded mutual funds	3,112			3,112
Commingled funds measured at NAV				15,963
Total corporate assets and investments held in trust for nonqualified plans	$ 23,524	$ -	$ -	39,487
Employee benefit plan assets:				
Short-term investments [3]	$ -	$ 468	$ -	468
Common stock	52,688			52,688
Publicly traded mutual funds	429,788			429,788
Corporate bonds		187,257		187,257
Government and agency securities		190,830		190,830
Short-term investments measured at NAV [4]				39,687
Commingled funds measured at NAV				1,335,401
Real estate fund measured at NAV				89,597
Total employee benefit plan assets	$482,476	$378,555	$ -	2,325,716
Accrued income/expense—net				3,066
Pending trades				(2,384)
Total fair value of employee benefit plan assets				2,326,398
Total fair value of assets as of September 30, 2019				$2,365,885

(1) The short-term investments held by the Corporation consist of a mutual fund.

(2) The short-term investments held by the nonqualified plans consist of a money market fund.

(3) The short-term investments held by the employee benefit plans primarily consist of short-term maturity fixed-income securities.

(4) The short-term investments held by the employee benefit plans primarily consist of short-term investment funds.

There were no transfers of financial instruments between the three levels of fair value hierarchy during the year ended September 30, 2019.

Items measured at fair value on a recurring basis subject to the disclosure requirements of ASC 820 as of September 30, 2018, are as follows (in thousands):

	Level 1	Level 2	Level 3	Total
Corporate assets—current assets:				
Short-term investments [1]	$ 18,745	$ -	$ -	$ 18,745
Investments held in trust for nonqualified plans:				
Short-term investments [2]	3,259			3,259
Publicly traded mutual funds	1,468			1,468
Commingled funds measured at NAV				14,206
Total corporate assets and investments held in trust for nonqualified plans	$ 23,472	$ -	$ -	37,678
Employee benefit plan assets:				
Short-term investments [3]	$ -	$ 797	$ -	797
Common stock	57,191			57,191
Publicly traded mutual funds	426,958			426,958
Corporate bonds		166,183		166,183
Government and agency securities		168,727		168,727
Short-term investments measured at NAV [4]				42,009
Commingled funds measured at NAV				1,365,325
Real estate fund measured at NAV				87,371
Total employee benefit plan assets	$484,149	$335,707	$ -	2,314,561
Accrued income/expense—net				3,070
Pending trades				(6,898)
Total fair value of employee benefit plan assets				2,310,733
Total fair value of assets as of September 30, 2018				$2,348,411

(1) The short-term investments held by the Corporation consist of a mutual fund.

(2) The short-term investments held by the nonqualified plans consist of a money market fund.

(3) The short-term investments held by the employee benefit plans primarily consist of short-term maturity fixed-income securities.

(4) The short-term investments held by the employee benefit plans primarily consist of short-term investment funds.

There were no transfers of financial instruments between the three levels of fair value hierarchy during the year ended September 30, 2018.

Financial Instruments at Fair Value—The financial assets and liabilities recorded at fair value in the financial statements are short-term investments and investments held in trust for nonqualified benefit plans. The carrying values of cash and cash equivalents, receivables, restricted cash, accounts payable, and accrued expenses are at approximate fair value because of the short-term maturities of these instruments.

The carrying value and the fair value of the Corporation's financial liabilities as of September 30, 2019 and 2018, are as follows (see Notes 1 and 8):

	2019		2018	
Financial Instrument	**Book Value**	**Fair Value**	**Book Value**	**Fair Value**
6.51% notes payable	$ 43,251,000	$ 51,565,000	$ 47,834,000	$ 52,567,000
4.76% notes payable	18,460,000	20,684,000	20,050,000	20,615,000
4.84% notes payable	18,725,000	21,087,000	20,320,000	20,990,000
3.90% notes payable	11,076,000	11,863,000	12,030,000	11,784,000
3.85% notes payable	11,076,000	11,831,000	12,030,000	11,749,000
3.50% notes payable	7,384,000	7,738,000	8,020,000	7,673,000
3.50% notes payable	7,384,000	7,738,000	8,020,000	7,673,000

12. ENDOWMENT

In November 2015, the Corporation established the Aerospace STEM (science, technology, engineering, and math) Endowment Fund (the "Fund") (see Notes 1 and 3). Earnings from and further donations to the Fund will be used to provide student scholarships to qualified underrepresented and underprivileged students. As authorized by the Board of Trustees, the Corporation transferred $500,000 to the Fund. It is anticipated that contributions to the Fund will be obtained from employees, retirees, and other sources, and such contributions and earnings thereon are restricted for STEM programs. The Fund is not guaranteed to continue indefinitely and may be terminated at any point in the future at the direction of the Board of Trustees.

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INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

To the Board of Trustees of
The Aerospace Corporation:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of The Aerospace Corporation (the "Corporation"), which comprise the balance sheet as of September 30, 2019, and the related statements of operations, changes in corporate equity, and cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated December 13, 2019.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Corporation's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Corporation's internal control. Accordingly, we do not express an opinion on the effectiveness of the Corporation's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the Corporation's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Corporation's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the result of that testing, and not to provide an opinion on the effectiveness of the Corporation's internal control or on compliance. This report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the Corporation's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Deloitte & Touche LLP

December 13, 2019

Deloitte.

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INDEPENDENT AUDITORS' REPORT ON COMPLIANCE FOR EACH MAJOR PROGRAM; REPORT ON INTERNAL CONTROL OVER COMPLIANCE; AND REPORT ON SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS REQUIRED BY THE UNIFORM GUIDANCE

To the Board of Trustees of
The Aerospace Corporation:

Deloitte & Touche LLP ("Deloitte & Touche") and the U.S. Defense Contract Audit Agency (DCAA) each performed certain tasks in connection with the coordinated audit of The Aerospace Corporation's (the "Corporation") compliance with the types of requirements described in the U.S. Office of Management and Budget *Compliance Supplement* (the "Compliance Supplement") that could have a direct and material effect on the Corporation's major federal program for the year ended September 30, 2019. Responsibilities under the coordinated audit approach were assigned as follows:

1. The DCAA audited the following compliance requirements of the Compliance Supplement: Activities allowed or unallowed; allowable costs/cost principles; cash management; and special tests and provisions. In addition, the DCAA tested the internal control over compliance with the above listed compliance requirements as they relate to the Corporation's major federal program. The DCAA issued Report No. 4181–2019T10110001 dated March 9, 2021 on the above listed compliance requirements, which includes an unqualified opinion.

2. Deloitte & Touche audited the following compliance requirements of the Compliance Supplement: Equipment and real property management; period of performance; procurement, suspension and debarment; and subrecipient monitoring (the "Subject Requirements"). In addition, Deloitte & Touche tested the internal control over compliance with the Subject Requirements as they relate to the Corporation's major federal program.

Report on Compliance for a Major Federal Program

As part of the aforementioned coordinated audit, we have audited the Corporation's compliance with the Subject Requirements that could have a direct and material effect on its major federal program for the year ended September 30, 2019. We did not audit the compliance of the Corporation with the Compliance Supplement's requirements for activities allowed or unallowed; allowable costs/cost principles; cash management; and special tests and provisions that are applicable to its major federal program for the year ended September 30, 2019. The Corporation's major federal program is identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

Management is responsible for compliance with the requirements of laws, regulations, contracts, and grants applicable to its federal program.

Auditors' Responsibility

Our responsibility is to express an opinion on compliance for the Corporation's major federal program based on our audit of the Subject Requirements. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (the "Uniform Guidance"). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the Subject Requirements that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Corporation's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for the major federal program. However, our audit does not provide a legal determination of the Corporation's compliance.

Opinion on Major Federal Program

In our opinion, the Corporation complied, in all material respects, with the Subject Requirements that could have a direct and material effect on its major federal program for the year ended September 30, 2019.

Report on Internal Control over Compliance

Management of the Corporation is responsible for establishing and maintaining effective internal control over compliance with the Subject Requirements. In planning and performing our audit of compliance, we considered the Corporation's internal control over compliance with the Subject Requirements that could have a direct and material effect on the major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for the major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Corporation's internal control over compliance. We did not consider the Corporation's internal control over compliance with activities allowed or unallowed; allowable costs/cost principles; cash management; and special tests and provisions that are applicable to its major federal program for the year ended September 30, 2019.

A *deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance

We have audited the financial statements of the Corporation as of and for the year ended September 30, 2019, and have issued our report thereon dated December 13, 2019, which contained an unmodified opinion on those financial statements. Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by the Uniform Guidance and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements, or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditure of federal awards is fairly stated in all material respects in relation to the financial statements as a whole.

This report is intended solely for the information and use of management, the Corporation's Board of Trustees, federal awarding agencies, and pass-through entities and is not intended to be, and should not be, used by anyone other than these specified parties.

Deloitte & Touche LLP

May 5, 2021

THE AEROSPACE CORPORATION

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
YEAR ENDED SEPTEMBER 30, 2019

Federal Grantor/Pass-Through Entity/ Program Title	Federal CFDA Number	Contract Number	Pass-Through Entity Identifying Number	Passed through to Subrecipients	Federal Expenditures
Research and Development - Cluster					
Department of Commerce Direct Programs					
DOC/NOAA	11.RD	SP-133E-17-CQ-0020			$ 12,576,852
Subtotal Department of Commerce Direct Programs					$ 12,576,852
Department of Commerce Pass-Through Programs From:					
UNIV OF SOUTHERN CALIF (USC)	11.RD	PO 10759123 REV.3	PO 10759123 REV.3		$ 7,379
Subtotal Department of Commerce Pass-Through Programs					$ 7,379
Total Department of Commerce					$ 12,584,231
Department of Defense Direct Programs					
AIR FORCE/SMC/CAT1/CAT2	12.RD	FA8802-19-C-0001			$ 967,238,101
AIR FORCE/SMC/CAT1/CAT2-PRIOR YRS.	12.RD	FA8802-14-C-0001			5,722,175
Subtotal Department of Defense Direct Programs					$ 972,960,276
Department of Defense Pass-Through Programs From:					
JHU/APL	12.RD	154723	154723		$ 1,947
UNIV OF MINNESOTA	12.RD	1564284&1622880&1827869	1564284&1622880&1827869		10,666
VANDERBILT UNIVERSITY	12.RD	UNIV59845	UNIV59845		22,429
Subtotal Department of Defense Pass-Through Programs					$ 35,042
Total Department of Defense					$ 972,995,318
Department of Interior Direct Programs					
U.S. GEOLOGICAL SURVEY (USGS)	15.RD	G16PC00011			$ 2,077,051
Total Department of Interior					$ 2,077,051
Department of State Direct Programs					
DEPT OF STATE	19.RD	SAQMMA17C0302			$ 353,480
Total Department of State					$ 353,480

(Continued)

THE AEROSPACE CORPORATION

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
YEAR ENDED SEPTEMBER 30, 2019

Federal Grantor/Pass-Through Entity/ Program Title	Federal CFDA Number	Contract Number	Pass-Through Entity Identifying Number	Passed through to Subrecipients	Federal Expenditures
National Aeronautics and Space Administration					
Direct Programs					
NASA-AMES	43.RD	NNG11VH00B		$ 385,057	$ 18,394,842
NASA-HQ	43.RD	80GSFC19D0011			(769)
NASA-HQ	43.RD	NNH11CD21B			8,593,176
NASA-JSC	43.RD	NNJ11HB94C			16,651,250
NASA-LARC	43.RD	NNL11AA01B			2,542,669
NASA-MSFC	43.RD	80NSSC18K0013		55,644	97,243
NASA-MSFC	43.RD	80NSSC19K1268			18,416
NASA-MSFC	43.RD	NNM12AA01B			837,150
NASA-NSSC	43.RD	80NSSC18K1239			13,472
NASA-NSSC	43.RD	80NSSC19K0448			10,288
NASA-SHARED SERVICES	43.RD	NNX17AJ69G			230,068
NR13-NASA-HQ	43.RD	NNX14AF35G			6,020
NR15-NASA/SHARED SERVICES (NSS	43.RD	NNX16AG65G		39,030	52,446
NR15-NASA-GSFC	43.RD	NNX16AF02G			82,286
NR15-NASA-GSFC	43.RD	NNX16AQ50G			37,290
NR15-NASA-HQ	43.RD	NNX16AF82G		67,823	100,737
NR15-NASA-HQ	43.RD	NNX16AG72G			91,909
NR15-NASA-HQ	43.RD	NNX16AH46G		13,979	84,756
NR16 NASA GSFC	43.RD	80NSSC18K0801			30,700
NR16-NASA-AMES	43.RD	80NSSC19K0235			220,604
NR16-NASA-ARMSTRONG	43.RD	NNX17AJ54G			119,561
NR16-NASA-GSFC	43.RD	80NSSC17K0038		5,560	15,658
NR16-NASA-HQ	43.RD	80NSSC17K0044		86,775	871,132
NR16-NASA-HQ	43.RD	NNX17AB73G			87,370
NR16-NASA-HQ	43.RD	NNX17AH84G			71,512
NR16-NASA-MSFC	43.RD	80NSSC17K0551			164,477
NR16-NASA-NQ	43.RD	80NSSC18K0309			29,273
NR17-NASA	43.RD	80NSSC18K0973		905	623,500
NR17-NASA-NSSC	43.RD	80NSSC18K1050			175,309
NR18-NASA-MSFC	43.RD	80NSSC19K0722			4,190
NR18-NASA-NSSC	43.RD	80NSSC18K1365		17,774	59,658
NR18-NASA-NSSC	43.RD	80NSSC18K1378			118,539
Subtotal National Aeronautics and Space Administration Direct Progams				$ 672,547	$ 50,434,732

(Continued)

THE AEROSPACE CORPORATION

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
YEAR ENDED SEPTEMBER 30, 2019

Federal Grantor/Pass-Through Entity/ Program Title	Federal CFDA Number	Contract Number	Pass-Through Entity Identifying Number	Passed through to Subrecipients	Federal Expenditures
National Aeronautics and Space Administration					
Pass-Through Programs From:					
FLORIDA INSTITUTE OF TECHNOLOG	43.RD	TSA P19-002764	TSA P19-002764		$ 20,066
JET PROPULSION LABORATORY	43.RD	1582471	1582471		4,174,557
JHU/APL	43.RD	135557	135557		60,778
JOHN HOPKINS UNIVERSITY/APL	43.RD	80NSSC18K1377	80NSSC18K1377		20,448
LAWSON STATE COMMUNITY COLLEGE	43.RD	P.O. 99063	P.O. 99063		1,689
MASS INST OF TECH (MIT)	43.RD	5710003772	5710003772		49,741
NATL ACADEMY OF SCIENCES (NAS)	43.RD	2000006698	2000006698		(761)
NR14-CLEMSON UNIVERSITY	43.RD	1817-204-2010726	1817-204-2010726		71,249
NR14-SOUTHWEST RESEARCH INST (	43.RD	792084N/H99045CO	792084N/H99045CO		49,796
NR17-CLEMSON UNIVERSITY	43.RD	2036-204-2012543	2036-204-2012543		6,137
PRINCETON UNIVERSITY	43.RD	SUB0000155	SUB0000155		177,987
SOUTHWEST RESEARCH INST (SWRI)	43.RD	792084N/E99017JD	792084N/E99017JD		307,813
SOUTHWEST RESEARCH INSTITUTE	43.RD	L99031KJ	L99031KJ		199,608
SPACE TELESCOPE SCIENCE INST	43.RD	HST-GO-14076.014-A	HST-GO-14076.014-A		5,905
UCLA	43.RD	2090 G SA295	2090 G SA295		801
UNIV OF NEW HAMPSHIRE	43.RD	11-106	11-106		147,595
UNIV OF NEW HAMPSHIRE	43.RD	17-002	17-002		496,714
UNIV OF NEW HAMPSHIRE	43.RD	TBA-UNH	TBA-UNH		10,795
UNIVERSITY OF HOUSTON	43.RD	R-19-0065	R-19-0065		58,425
UNIVERSITY OF MARYLAND	43.RD	71294-Z6172201	71294-Z6172201		11,072
Subtotal National Aeronautics and Space Administration Pass-Through Programs					$ 5,870,415
Total National Aeronatics and Space Administration				$ 672,547	$ 56,305,147
National Science Foundation Direct Programs					
NATL SCIENCE FOUNDATION (NSF)	47.RD	AGS-1242823			$ 1,349
NATL SCIENCE FOUNDATION (NSF)	47.RD	AGS1450660			24,840
NATL SCIENCE FOUNDATION (NSF)	47.RD	AGS1602862			77,438
NATL SCIENCE FOUNDATION (NSF)	47.RD	AGS-1848730			3,574
Total National Science Foundation					$ 107,201

(Continued)

THE AEROSPACE CORPORATION

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
YEAR ENDED SEPTEMBER 30, 2019

Federal Grantor/Pass-Through Entity/ Program Title	Federal CFDA Number	Contract Number	Pass-Through Entity Identifying Number	Passed through to Subrecipients	Federal Expenditures
Miscellaneous Direct Programs					
RESTRICTED	99.RD	R-18			$ 2,604,396
U.S. GOVERNMENT	99.RD	2014-14013100004			5,912,396
U.S. GOVERNMENT	99.RD	2016-15101600001			716,304
U.S. GOVERNMENT	99.RD	2016-16090200001			129,015
U.S. GOVERNMENT	99.RD	2017-17030800002			241,985
U.S. GOVERNMENT	99.RD	2017-17061600002			223,238
U.S. GOVERNMENT	99.RD	DJF-17-1200-P-0000925			122,800
U.S. GOV'T - ODNI	99.RD	2011-11062800008-007			(557)
U.S. GOV'T - ODNI	99.RD	2015-15020400005-001			1,680,078
U.S. GOV'T - ODNI	99.RD	2015-15020400005-003			2,991,453
U.S. GOV'T - ODNI	99.RD	2015-15020400005-004			2,958,066
U.S. GOV'T - ODNI	99.RD	2015-15020400005-005			899,990
U.S. GOV'T - ODNI	99.RD	2015-15020400005-006			23,451
Total Miscellaneous Programs					$ 18,502,615
Total Expenditures of Federal Awards				$ 672,547	$ 1,062,925,043

THE AEROSPACE CORPORATION

NOTES TO SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
YEAR ENDED SEPTEMBER 30, 2019

1. Basis of Accounting: The Accompanying schedule of expenditures of federal awards includes the federal grant activity of The Aerospace Corporation and is presented on the accrual basis of accounting. The information in this schedule is presented in accordance with the requirements of Title 2 U.S. Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance).

2. Indirect Cost Rates: The Aerospace Corporation did not elect to use the 10% de minimis indirect cost rate as it does not apply to this entity because negotiated rates are used.

3. Relationship to Financial Statements: Amounts reported in the preceding schedule is reconciled to the annual financial statements for the year ended September 30, 2019 as follows:

Direct labor	$398,419,000
Indirect support and administrative costs	505,472,000
Other direct costs	92,353,000
Direct travel	19,367,000
Total costs	$1,015,611,000
Plus employer contribution to retirement and benefit plans	50,754,000
Less other adjustments	(39,000)
Total reimbursable costs	$1,066,326,000
Less nonfederal expenditures	(3,401,000)
Total expenditures of federal awards - as listed in the schedule of federal awards (rounded)	$1,062,925,000

4. Department of Defense, Air Force/SMC/CAT1/CAT2: The total of $972,960,276 of Department of Defense—Air Force expenditures reported in the schedule of expenditures of federal awards for fiscal year 2019 includes $967,238,101 in support of fiscal year 2019 contract modification, $5,343,648 in support of fiscal year 2018 contract modification, $29,558 in support of fiscal year 2017 contract modification, $349,114 in support of fiscal year 2016 contract modification, and $(145) in support of fiscal year 2015 and fiscal year 2014 contract modifications.

5. Cost Accounting Standard 414 Cost of Funds: The preceding federal expenditures do not include Cost Accounting Standard 414, Cost of Money as an Element of the Cost of Facilities Capital, cost of funds of $16,024,838 for fiscal year 2019.

6. **Subrecipient Awards**: Of the federal expenditures presented in the schedule of expenditures of federal awards, federal awards provided to subrecipients were as follows:

CFDA	Grantor Agency	Contract	Subrecipient	Amount Provided to Subrecipient
43	National Aeronautics and Space Administration	80NSSC17K0038	Clemson University	$ 5,560
		80NSSC17K0044	Embry-Riddle Aeronautical Univ Inc	86,775
		80NSSC18K0973	Johns Hopkins University	905
		NNX16AG65G	Johns Hopkins University	15,685
		NNX16AG65G	Mass Inst of Tech (MIT)	23,345
		NNG11VH00B	MITRE	385,057
		80NSSC18K1365	Regent Univ of Calif at LA (UCLA)	17,774
		NNX16AF82G	Regent Univ of Calif at LA (UCLA)	67,823
		80NSSC18K0013	Univ of Alabama at Birmingham (UAB)	55,644
		NNX16AH46G	Univ of Texas - Dallas	13,979
			National Aeronautics and Space Administration total	672,547
			Total	$ 672,547

THE AEROSPACE CORPORATION

SCHEDULE OF FINDINGS AND QUESTIONED COSTS
FOR THE YEAR ENDED SEPTEMBER 30, 2019

SECTION I—SUMMARY OF AUDITORS' RESULTS

Financial Statements

Type of auditors' report issued:	*Unqualified*	
Internal control over financial reporting:		
• Material weakness(es) identified:	_____ Yes	__X__ No
• Significant deficiency(ies) identified that are not considered to be material weaknesses:	_____ Yes	__X__ None reported
Noncompliance material to financial statements noted?	_____ Yes	__X__ No

Federal Awards

The summary included herein is with respect to the following compliance requirements of U.S. Office of Management and Budget (OMB) *Compliance Supplement* (the "Compliance Supplement") related to The Aerospace Corporation's (the "Corporation") major federal program for the year ended September 30, 2019: Equipment and real property management; period of performance; procurement, suspension and debarment; program income; and subrecipient monitoring (the "Subject Requirements"). Additionally, this summary does not include the results of the audit work performed by the U.S. Defense Contract Audit Agency (DCAA) over the following compliance requirements of the Compliance Supplement related to the Corporation's major federal program for the year ended September 30, 2019: Activities allowed or unallowed; allowable costs/cost principles; cash management; and special tests and provisions. The results of the DCAA's procedures is included in the schedule of findings and questioned costs included in the DCAA's Audit Report No. 4181–2019T10110001 dated March 9, 2021.

Internal control over major programs:		
• Material weakness(es) identified:	_____ Yes	__X__ No
• Significant deficiency(ies) identified that are not considered to be material weaknesses:	_____ Yes	__X__ None reported
Type of auditors' report issued on compliance for major programs:	*Unqualified*	
• Any audit findings disclosed that are required to be reported in accordance with Section 510(a) of OMB Uniform Grant Guidance?	_____ Yes	__X__ No

Identification of major programs:

CFDA Numbers	**Name of Federal Program or Cluster Number**
Various	Research and Development Cluster

Dollar threshold used to distinguish between
Type A and Type B programs: $3,188,775

Auditee qualified as a low-risk auditee? _____ Yes __X__ No

See notes to schedule of findings and questioned costs.

SECTION II—FINANCIAL STATEMENT FINDINGS

No matters were reported.

SECTION III—FEDERAL AWARD FINDINGS AND QUESTIONED COSTS

The summary included herein is with respect to the Subject Requirements related to the Corporation's major federal program for the year ended September 30, 2019. Additionally, this summary does not include the results of the audit work performed by the DCAA over the following compliance requirements of the Compliance Supplement related to the Corporation's major federal program for the year ended September 30, 2019: Activities allowed or unallowed; allowable costs/cost principles; cash management; and special tests and provisions. The results of the DCAA's procedures is included in the schedule of findings and questioned costs included in the DCAA's Audit Report No. 4181–2019T10110001 dated March 9, 2021.

No matters were reported related to the Subject Requirements.

THE AEROSPACE CORPORATION

NOTES TO SCHEDULE OF FINDINGS AND QUESTIONED COSTS
FOR THE YEAR ENDED SEPTEMBER 30, 2019

1. BASIS OF PRESENTATION

As described on page 1 in the *Introduction* to this report, The Aerospace Corporation (the "Corporation") participates in the Coordinated Audit Program (CAP) sponsored by the Defense Contract Audit Agency (DCAA). As further described in the *Introduction*, and consistent with the provisions of the U.S. Office of Management and Budget Uniform Grant Guidance, *Audits of States, Local Governments, and Non-Profit Organizations*, through the CAP, Deloitte & Touche LLP ("Deloitte & Touche") and DCAA agreed on a division of responsibility regarding auditing and reporting on the Corporation's financial statements, schedule of expenditures of federal awards, and compliance with laws and regulations related to federal awards, all for the year ended September 30, 2019.

The accompanying schedule of findings and questioned costs relates solely to Deloitte & Touche's areas of responsibility, as defined in the *Introduction*. Findings and questioned costs, if any, related to DCAA's areas of responsibility, as defined in the *Introduction*, are included in a separate schedule of findings and questioned costs prepared by DCAA.

2. ISSUANCE DATE OF DCAA REPORT

The DCAA issued Report No. 4181–2019T10110001 dated March 9, 2021, which includes an unqualified opinion on the compliance requirements, as described in the *Introduction*.

Audit Report No. 4181-2019T10110001

Los Angeles Branch Office
4 Centerpointe Drive, Suite 400
La Palma, CA 90623-1074

March 9, 2021

Independent Audit Report on The Aerospace Corporation's Compliance with Requirements Applicable to its Research & Development Program and on Internal Control Over Compliance in Accordance with the OMB Circular A-133 and Uniform Guidance at 2 CFR Part 200 for Fiscal Year Ended September 30, 2019

SPECIAL WARNING: The contents of this audit report must not be released or disclosed, other than to those persons whose official duties require access in accordance with Department of Defense (DoD) regulations. This document may contain information exempt from mandatory disclosure under the Freedom of Information Act. Unauthorized disclosure of proprietary, contractor bid or proposal or source selection information may violate Title 18 United States Code (U.S.C.) § 1905 and/or Title 41 U.S.C. § 2102. Please see the Audit Report Distribution and Restrictions section of this report for further restrictions.

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Audit Report No. 4181-2019T10110001 **March 9, 2021**

EXECUTIVE SUMMARY

ABOUT THE AEROSPACE CORPORATION

The Aerospace Corporation (Aerospace) is an independent, nonprofit corporation that was created to meet special long-term research and development needs in establishing the nation's military space program that cannot be satisfied by any government or contractor resource.

All of Aerospace's Federal awards fall under the designation of a Research & Development (R&D) Cluster so it is considered to only have one major Federal program (R&D). A cluster of programs means Federal programs with different Catalog of Federal Domestic Assistance (CFDA) numbers that are closely related programs that share common compliance requirements.

Aerospace's primary customers are the Space and Missile Systems Center (SMC) of the Air Force Space Command and the National Reconnaissance Office and it also provides technical support to space-related programs managed by other agencies, international organizations and governments in the national interest. In fiscal year (FY) ended 2019, sales were approximately $1,109 million, where approximately 97 percent was attributed to Government sales. Aerospace had 3,383 direct employees and 645 indirect employees. Aerospace is located at 2310 El Segundo Boulevard in El Segundo, California and its CAGE code is 12782.

ABOUT THIS AUDIT

In accordance with Code of Federal Regulations, Title 2, Part 200 (2 CFR 200), the U.S. Defense Contract Audit Agency (DCAA) and Deloitte & Touche LLP (D&T) performed a coordinated audit of the Aerospace's R&D Cluster. DCAA's audit responsibility included testing Aerospace's compliance with the following compliance requirements included in the 2019 2 CFR 200, Appendix XI, Compliance Supplement: activities allowed or unallowed, allowable cost/cost principles, cash management, and special tests and provisions. Our work included auditing Aerospace's proposed direct and indirect amounts for reimbursement on Federal awards contained in its FY 2019 final indirect cost proposal submitted on March 24, 2020 (Appendix 1, page 14). In addition, we tested Aerospace's internal control structure with respect to the compliance requirements listed above as they related to the R&D Cluster. Our audit of the R&D Cluster did not include Federal awards, listed as U.S. Government with CFDA number 99, included in the Schedule of Expenditures of Federal Awards (SEFA) because we do not have audit cognizance over those Federal Awards. Additionally, we performed this audit as part of our coordination with Ms. Van Choat, Deputy Chief, Specialized Contracts, at Space and Missile Center in El Segundo, California and Aerospace.

WHAT WE FOUND

Aerospace complied with the types of compliance requirements referred to above that are applicable to the Federal awards that we audited under the R&D Cluster for the year ended September 30, 2019. Aerospace's proposed amounts comply with the terms of Federal awards pertaining to accumulating incurred amounts.

REPORT ON COMPLIANCE FOR RESEARCH AND DEVELOPMENT PROGRAM

We have audited Aerospace's compliance with four of the eight compliance requirements described in the 2019 2 CFR 200, Appendix XI, Compliance Supplement that could have a direct and material effect on Aerospace's R&D program for the year ended September 30, 2019. The compliance requirements audited by DCAA are as follows:

- Requirement A (Activities Allowed or Unallowed),
- Requirement B (Allowable Costs/Cost Principles),
- Requirement C (Cash Management), and
- Requirement N (Special Tests & Provisions).

Aerospace's independent public accounting firm, D&T, is responsible for reviewing compliance with F, H, I, and M for all Federal awards and with requirements for the R&D program.

Aerospace's major Federal program is identified in the Schedule of Findings and Questioned Costs summary of auditor's results section (Exhibit C, page 12).

Our audit of the R&D program did not include Federal awards, listed as U.S. Government with CFDA number 99, included in the SEFA because we do not have audit cognizance over those Federal Awards.

Management's Responsibility

Aerospace's management is responsible for compliance with Federal statutes, regulations, and the terms and conditions of its Federal awards applicable to its Federal programs, including the design, implementation, maintenance of internal control to prevent or detect and correct noncompliance due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on compliance for Aerospace's Federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards* (GAGAS), issued by the Comptroller General of the United States, and the audit requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a R&D Federal program occurred and whether Aerospace's propose amounts materially comply with the contract terms pertaining to accumulating costs. An audit includes examining, on a test basis, evidence about Aerospace's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances. The nature, timing, extent of the procedures selected depend on our professional judgment, including an assessment of risks of material noncompliance, whether due to fraud or error, and involve examining evidence about the proposed amounts.

We believe that the evidence we obtained is sufficient and appropriate to ensure that our audit provides a reasonable basis for our audit opinion on compliance for the major Federal program. However, our audit does not provide a legal determination on Aerospace's compliance.

Unqualified Opinion on Compliance for Research and Development Program

In our opinion, Aerospace complied, in all material respects, with contract terms pertaining to accumulating incurred amounts and the types of compliance requirements referred to above that could have a direct and material effect on each of its major Federal programs for the year ended September 30, 2019.

The proposed/accepted direct and indirect costs for FY 2019 are included in Schedule of Cost by Federal Award, Appendix 3, page 16.

REPORT ON INTERNAL CONTROL OVER COMPLIANCE

Management of Aerospace is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered Aerospace's internal control over compliance with the types of requirements that could have a direct and material effect on its R&D program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for the R&D program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of Aerospace's internal control over compliance.

A *deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a Federal program on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a Federal program will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement for a Federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of Aerospace's internal control over compliance with Federal programs was for the limited purpose described above and was not designed to identify all deficiencies in the Auditee's internal control that might be significant deficiencies or material weaknesses. Therefore, significant deficiencies or material weaknesses may exist that were not identified. We did not identify any deficiencies in internal control over compliance that we consider to be significant deficiencies or material weaknesses.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

AUDITOR'S COMMENTS ON SUMMARY SCHEDULE OF PRIOR AUDIT FINDINGS

There were no prior audit findings requiring follow-up audit procedures (Appendix 2, page 15).

EXIT CONFERENCE

We discussed the results of our examination with Mr. James Ford, Principal Director of Finance Planning, Analysis and Reporting, in an exit conference held on March 2, 2021.

We are available to discuss the results of audit and participate in negotiations at your convenience.

DCAA PERSONNEL

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General information on audit matters is available at http://www.dcaa.mil/.

AUDIT REPORT AUTHORIZED BY:

E. Naomi Vaughn

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E. NAOMI VAUGHN
Branch Manager
DCAA Los Angeles Branch Office

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Restrictions

1. The For Official Use Only (FOUO) marking placed on this audit report is not a security marking. It is a marking required by DoD Freedom of Information Act (FOIA) regulations. The marking provides notice that the report might contain information that is subject to withholding under the FOIA. The FOUO marking is a notice limited to Department of Defense employees. The contents of this audit report are intended for persons whose official duties require access in accordance with Department of Defense (DoD) Manual 5200.01, Volume 4 - DoD Information Security Program, February 2012, Enclosure 3, paragraph 2.d. The audit report and supporting documentation may contain information exempt from mandatory disclosure under the Freedom of Information Act. Exemption 4, of the Freedom of Information Act, which addresses proprietary information, may apply.

   It is not practical to identify, during the conduct of the audit, all elements of the data that are proprietary. Proprietary determinations should be made considering the access to Uniform Guidance Audit Reports granted to the public. Unauthorized disclosure of proprietary information violates Title 18 United States Code (U.S.C.) 93 §1905. Any person who unlawfully discloses such information is subject to penalties such as fines, imprisonment, and/or removal from office or employment.

2. The Defense Contract Audit Agency has no objection to the auditee releasing this report, at their discretion for public inspection. DCAA also has no objection to the auditee excluding Attachments of this report from the filing with the Federal Clearinghouse due to the proprietary nature of the information included in an appendix.

3. This report is intended solely for the information and use by Federal awarding agencies and pass-through entities and is not intended to be, and should not be, used by anyone other than these specified parties.

SUMMARY OF RESULTS – INDIRECT RATES
The Aerospace Corporation
Fiscal Year Ended September 30, 2019

Summary of Proposed and Accepted Indirect Expense Pools, Allocation Bases*, and Rates

*Refer to Exhibit B, page 11, for Government Participation in Allocation Bases

SUMMARY OF RESULTS – INDIRECT RATES
The Aerospace Corporation
Fiscal Year Ended September 30, 2019

Summary of Proposed and Accepted Indirect Rates by Contract Type/Site

Summary of Proposed and Accepted Cost of Money Factors by Contract Type

GOVERNMENT PARTICIPATION IN ALLOCATION BASES
The Aerospace Corporation
Fiscal Year Ended September 30, 2019

Government Participation in Allocation Bases

SCHEDULE OF FINDINGS AND QUESTIONED COSTS
The Aerospace Corporation
Fiscal Year Ended September 30, 2019

SECTION I: -- SUMMARY OF AUDITOR'S RESULTS:

A. Financial Statements:

Information pertaining to the financial statements and the report on the Schedule of Expenditures of Federal Awards required by the Uniform Guidance are included in the independent public accountant's audit report.

B. Federal Awards:

Type of auditor's report issued on compliance for major programs:

Type of Audit Opinion	Research and Development Cluster
Unmodified	X
Qualified	
Adverse	
Disclaimer	

Internal control over major programs:

	Yes	None Reported
Material weaknesses were identified.		X
Significant deficiencies identified not considered to be material weaknesses.		X

Audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)

Yes	
No	X

Identification of Major Programs:

CFDA Number	Federal Program
Various	Research and Development – Cluster

Dollar threshold used to distinguish between Type A and Type B programs:

$3,188,775

Auditee classified as a low-risk under 2 CFR 200 Subpart F:

Yes	
No	X

SCHEDULE OF FINDINGS AND QUESTIONED COSTS
The Aerospace Corporation
Fiscal Year Ended September 30, 2019

SECTION II: -- FINDINGS RELATED TO FINANCIAL STATEMENTS:

Information pertaining to the financial statements can be found in the independent public accountant's audit report.

SECTION III: FINDINGS RELATED TO FEDERAL AWARDS:

Summary of Proposed/Accepted Indirect Expense and Rates
October 1, 2018 through September 30, 2019

Certificate of Final Indirect Costs
2 CFR 200, Appendix IV, Section D

The Aerospace Corporation
Fiscal Year Ended September 30, 2019

Certificate of Final Indirect Costs
Fiscal Year Ended 9/30/19

This is to certify that I have reviewed this proposal to establish final indirect cost rates and to the best of my knowledge and belief:

1. All costs included in this proposal, The Aerospace Corporation Overhead Claim for Fiscal Year Ended September 30, 2019, to establish final indirect cost rates for fiscal year October 1, 2018 through September 30, 2019, are allowable in accordance with the cost principles of the Federal Acquisition Regulation (FAR) and its supplements applicable to the contracts to which the final indirect cost rates will apply; and

2. This proposal does not include any costs that are expressly unallowable under applicable cost principles of the FAR or its supplements.

THE AEROSPACE CORPORATION
Firm

Ellen Beatty
Signature

Ellen M. Beatty
Name of Certifying Official

Vice President, Chief Financial Officer, and Treasurer
Title

24 March 2020
Date of Execution

SUMMARY SCHEDULE OF PRIOR AUDIT FINDINGS
The Aerospace Corporation
Fiscal Year Ended September 30, 2019

THE AEROSPACE CORPORATION

Summary of Prior Audit Findings
In accordance with OMB Circular A-133
DCCA Audit Report No. 4181-2018T10110001
FY18

	Type of Compliance Requirements	Reported Deficiency	Reference Number	Auditee Comments
	Internal Controls over Compliance. DFARS 242.7501	As referenced in DCAA Audit Report Numbers above, there were NO deficiencies identified for the year ending September 30, 2018. Aerospace complied with the types of compliance requirements that are applicable to the Federal awards audited. Aerospace proposed amounts comply with the terms of Federal awards pertaining to accumulating and billing incurred amounts.		Aerospace agrees with the audited results disclosed by DCAA for FY18.

SCHEDULE OF COST BY FEDERAL AWARD
The Aerospace Corporation
Fiscal Year Ended September 30, 2019

Contract Number	Job Order	Direct Labor	ODC	Indirect Costs	Cost of Money	Total**
DOD Contracts						
FA8802-19-C-0001	Various					$ 981,727,284
1564284&1622880&18278	597700					10,812
UNIV59845	595300					22,747
154723	5A3700					2,302
Total DOD						$ 981,763,144
NASA Contracts						
NNG11VH00B	570400					$ 233,166
NNG11VH00B	581900					348,137
NNG11VH00B	597400					93,795
NNG11VH00B	599400					68,723
NNG11VH00B	705300					(1,238)
NNG11VH00B	5A3300					24,273
NNG11VH00B	5A4400					50,237
NNG11VH00B	5A5800					22,457
NNG11VH00B	5A6100					5,343
NNG11VH00B	571500					4,475
NNG11VH00B	571900					109,140
NNG11VH00B	573400					323,036
NNG11VH00B	574600					711,979
NNG11VH00B	576100					48,024
NNG11VH00B	581500					739,542
NNG11VH00B	587300					330,325
NNG11VH00B	588200					46,366
NNG11VH00B	588400					564,474
NNG11VH00B	588500					(2,576)
NNG11VH00B	591100					453,774
NNG11VH00B	593500					346,473
NNG11VH00B	593700					831,592
NNG11VH00B	596000					580
NNG11VH00B	597000					171,533
NNG11VH00B	597200					486,380
NNG11VH00B	597600					318,573
NNG11VH00B	599000					55,213
NNG11VH00B	599300					377,143

Contract Number	Job Order	Direct Labor	ODC	Indirect Costs	Cost of Money	Total**
NNG11VH00B	704300					1,829,489
NNG11VH00B	704400					1,779,935
NNG11VH00B	704900					387,382
NNG11VH00B	705900					269,366
NNG11VH00B	708200					1,397,020
NNG11VH00B	708500					170,583
NNG11VH00B	710600					322,233
NNG11VH00B	711300					238,937
NNG11VH00B	711900					2,451
NNG11VH00B	713100					437,112
NNG11VH00B	715200					995,253
NNG11VH00B	716500					645,988
NNG11VH00B	726000					1,186,987
NNG11VH00B	726600					1,322,461
NNG11VH00B	740200					745,288
NNG11VH00B	5A4900					75,282
NNG11VH00B	5A6500					39,419
NNG11VH00B	5A6600					103,351
80GSFC19D0011	5B1100					(769)
NNH11CD21B	572600					881,908
NNH11CD21B	577500					(2,239)
NNH11CD21B	587800					138,076
NNH11CD21B	590000					275,004
NNH11CD21B	596900					22,870
NNH11CD21B	597300					55,453
NNH11CD21B	598500					8,868
NNH11CD21B	703700					1,225,444
NNH11CD21B	730300					4,280,671
NNH11CD21B	5A0100					196,536
NNH11CD21B	5A1100					1,396,911
NNH11CD21B	5A1900					189,709
NNH11CD21B	5A2600					48,220
NNH11CD21B	5A6700					15,239
NNJ11HB94C	568200					8,593,727
NNJ11HB94C	568300					1,477,381
NNJ11HB94C	572500					628,525
NNJ11HB94C	591600					553,271
NNJ11HB94C	592600					160,180

Contract Number	Job Order	Direct Labor	ODC	Indirect Costs	Cost of Money	Total**
NNJ11HB94C	716600					571,210
NNJ11HB94C	589600					1,535,158
NNJ11HB94C	595500					1,143,713
NNJ11HB94C	595700					435,015
NNJ11HB94C	595800					17,944
NNJ11HB94C	5A0600					478,616
NNJ11HB94C	5A4600					17,909
NNJ11HB94C	5A5100					932,419
NNJ11HB94C	5A5300					110,843
NNJ11HB94C	5A6900					280,029
NNJ11HB94C	5A7500					25,040
NNL11AA01B	570100					1,557,807
NNL11AA01B	727500					983,060
NNL11AA01B	5A5400					40,788
80NSSC18K0013	593300					97,896
80NSSC19K1268	5A2100					18,703
NNM12AA01B	573800					503,310
NNM12AA01B	579600					230,351
NNM12AA01B	585300					15,597
NNM12AA01B	592000					100,759
80NSSC18K1239	599100					13,682
80NSSC19K0448	5A4200					10,434
NNX17AJ69G	590300					233,443
NNX14AF35G	709200					6,114
NNX16AG65G	725000					52,665
NNX16AF02G	723500					83,271
NNX16AQ50G	730100					37,844
NNX16AF82G	723900					101,316
NNX16AG72G	724100					92,852
NNX16AH46G	724800					85,821
80NSSC18K0801	597500					31,179
80NSSC19K0235	5A1600					221,537
NNX17AJ54G	589300					119,721
80NSSC17K0038	591000					15,815
80NSSC17K0044	591700					881,338
NNX17AB73G	588000					87,851
NNX17AH84G	590400					72,453
80NSSC17K0551	592900					166,421

Contract Number	Job Order	Direct Labor	ODC	Indirect Costs	Cost of Money	Total**
80NSSC18K0309	596100					29,730
80NSSC18K0973	598000					631,366
80NSSC18K1050	598600					177,723
80NSSC19K0722	5A3900					4,255
80NSSC18K1365	599500					60,252
80NSSC18K1378	599200					120,324
1582471	592300					4,014,005
1582471	594100					24,495
1582471	598400					104,004
1582471	599800					37,921
1582471	5A6400					56,359
135557	726800					61,723
80NSSC18K1377	5A0500					20,664
5710003772	715100					50,496
1817-204-2010726	717100					72,005
792084N/H99045CO	716900					49,903
2036-204-2012543	5A1300					6,233
SUB0000155	596600					180,762
792084N/E99017JD	574200					312,288
HST-GO-14076.014-A	598200					5,905
2090 G SA295	714500					814
11-106	568500					149,805
17-002	726700					504,395
TBA-UNH	5A0900					10,931
R-19-0065	5A3200					59,336
71294-Z6172201	5A3000					11,160
2000006698	721600					-
Total NASA						$ 57,021,239
Other Federal Contracts						
PO 10759123 REV.3	5A2400					$ 7,494
SP-133E-17-CQ-0020	585700					317,305
SP-133E-17-CQ-0020	585800					993,117
SP-133E-17-CQ-0020	586100					439,937
SP-133E-17-CQ-0020	586200					1,958,396
SP-133E-17-CQ-0020	586300					2,204,682
SP-133E-17-CQ-0020	586400					1,467,633
SP-133E-17-CQ-0020	586500					632,824

Contract Number	Job Order	Direct Labor	ODC	Indirect Costs	Cost of Money	Total**
SP-133E-17-CQ-0020	586600					619,659
SP-133E-17-CQ-0020	593900					534,132
SP-133E-17-CQ-0020	594000					794,568
SP-133E-17-CQ-0020	594600					194,561
SP-133E-17-CQ-0020	594700					653,477
SP-133E-17-CQ-0020	598900					1,003,548
SP-133E-17-CQ-0020	5A4300					845,241
SP-133E-17-CQ-0020	5A4500					150,059
G16PC00011	718800					2,119,331
AGS-1242823	703900					1,349
AGS1450660	716700					24,840
AGS1602862	591500					77,438
AGS-1848730	5A7200					3,574
TSA P19-002764	5A3600					20,351
P.O. 99063	587700					1,716
L99031KJ	5A2700					201,431
R-18	599600					2,640,139
SAQMMA17C0302	593000					344,509
Total Other Federal						$ 18,251,311
Federal Awards not Subject to SEFA						
DOD Contracts						
2121800011	596400					$ 18,499
SC-8118-014AER	725600					141,539
T2019-2273	5A4100					1,437
Total DOD						$ 161,475
Other Federal Contracts						
3508-NAS-2T	5A1800					$ 41,223
1004-01	5A3800					12,351
P010216763	5A2500					269,947
160140	592800					151,670
1921	599900					43,160
214940	5A2300					83,108
Total Other Federal						$ 601,458

* Indirect costs are included for T&M with fully burdened labor costs.

**Total amounts include rounding errors.