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CONSULTING GROUP

Impact of COVID-19: A Look into the Business Continuity Measures within the Aerospace, Defense, and Space Domains

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Impact of COVID-19 on A&D companies around the themes:

Facility

Facility Closures

IMPACT OF COVID-19

- Most companies temporarily shut down their production facilities worldwide due to either low demand or government restrictions
- A few of them, such as Astronics Corporation, closed facilities for deep cleaning
- Facilities of a few companies didn't cease their operations as they were deemed an essential service
- Facilities are gradually reopening with easing government norms and other factors

CHANGES IMPLEMENTED BY COMPANIES

AAR

- The company announced that it will permanently close its MRO facility at Duluth, Minnesota, by late July due to the impact of COVID-19 on the commercial airline industry
- AAR Corp is a part of the essential critical infrastructure sector (as defined by the Department of Homeland Security), thus is fully operational to support commercial and government customers in accordance with current federal, local, and state orders

Astronics

- The company closed a facility in India due to government mandate; four other locations, which were temporarily closed for deep cleaning, have now been reopened

Safran

- Safran Cabin temporarily suspended production at four plants in North America
- Of its 300 sites, 12 Safran locations are still shut

L3Harris

- The company has been deemed essential by state officials
- It temporarily closed a few flight training facilities at several locations, including Europe

Woodward

- The company announced its plans to close its Rock Cut plant
- It also shut down the Drake Road facility in March and the one in Loves Park in May after an employee tested COVID positive

BAE Systems

- The company temporarily paused some manufacturing operations at the York County facility to implement additional safety measures in response to COVID-19

MTU Aero Engines

- During March and April, the company suspended its operations in Germany and Poland

Cost Actions 1/2

Cost Actions Undertaken

IMPACT OF COVID-19

- Companies are taking actions to reduce cost, including fixed costs, to maintain their cash balance and working capital requirements
- The actions undertaken include reduction in Capex and R&D expenses, deferment of discretionary spending, and reduction in operating costs
- Companies implementing cost cutting include Meggitt PLC, Lockheed Martin, Kaman Corporation, and L3Harris Technologies

Companies reducing their Capex	Companies reducing their Opex	Companies reducing their discretionary spending
Thales, Rolls-Royce, MTU Aero Engines, Spirit AeroSystems, Moog, ST Engineering, Hexcel, Boeing, Astronics Corporation, CAE, Crane Aerospace & Electronics	AAR, FACC, Textron	Raytheon Technologies, Leonardo, GE, Moog, Astronics Corporation, Curtiss-Wright, Triumph Group, Bombardier, Rolls-Royce, Elbit Systems

Thales and Raytheon Technologies took steps to reduce operating costs, Capex, and discretionary spending

Companies reducing both their Capex and Opex: Arconic, Meggitt, Safran, Figeac Aero

Companies reducing both their Opex and discretionary spending: Airbus, Kaman

Sources: *Company website, press articles, and FactSet; Note: 1) Operating expenses*

Cost Actions 2/2

Companies Implementing Cost Cutting

Astronics Corporation

- The company plans to undertake a few actions to save $55–60 million for the year, beginning Q2 2020
  - Reduced 2020 Capex to $8 million from an initial plan of $20–25 million
  - Imposed restrictions on marketing, trade shows, travel, and discretionary spending for the remainder of the year
  - Also amended its lending facility with its banks to temporarily suspend its leverage covenant until Q2 2021; replaced it by an interest coverage covenant and a minimum liquidity covenant

Raytheon Technologies

- The company announced its plans to cut $2 billion in costs immediately to adapt to the crisis that has engulfed the global airline industry
- It announced significant reduction in Capex in buildings and facilities, excluding safety-related investments
- The company announced the suspension of discretionary spending, including discretionary engineering and development programs
- Its subsidiaries also took several cost-cutting steps:
  - **UTC:** Implemented several cost-cutting measures, including ordering a hiring freeze, suspending discretionary spending, and significantly reducing its capital investment in buildings and facilities
  - **Collins Aerospace:** Eliminated discretionary spending

Safran

- As of February, to reach its annual forecasts, the company was targeting a cost saving of $326 million and other belt-tightening measures to cope with the 737 MAX outage and the impact of COVID-19 on its China operations
- It also planned to reduce new investments by ~60%, R&D expenses by 30%, and operating expenses by over 20% in comparison with 2019
- The company scaled back purchasing programs in line with the decline in deliveries

Boeing

- The company terminated its proposed $4.2 billion agreement to join forces with Embraer SA’s commercial-aircraft business
- It reduced or deferred R&D and Capex

Thales

- The company deferred non-critical investments such as R&D, IT, and real estate investments
- significantly reduced discretionary spending
- It took measures to control working capital requirements, particularly to account for the impact of the crisis on demand and supply chains

Thales

- The company is implementing mitigating actions to reduce operating costs by ~$150 million on an annualized run-rate basis
- Its Capex will be reduced ~$50 million or ~30%
- These measures will improve the company’s financial profile by ~$200 million

Spirit Aerosystems

- It deferred Capex of over $120 million

***Sources:** Company website, press articles, and FactSet*

Strategy

Changed Strategy

IMPACT OF COVID-19

To cope with this pandemic, companies have adapted new strategies such as raising new credit facilities, reducing revolving credit line, and cutting down production

AIRBUS

- Secured a new credit facility amounting to €15 billion and issued a €2.5 billion bond, partially terming out the €15 billion credit facility

Arconic

- Borrowed $500 million under the revolving credit facility on April 2, 2020, to bolster its liquidity and preserve financial flexibility

Astronics Corporation

- Reduced the revolving credit line from $500 million to $375 million

Curtiss-Wright

- The company is conducting stress testing of all its segments to determine and plan for potential sales and profitability risks
- It announced the pricing of a private debt offering at $300 million in a move aimed at bolstering the company's balance book

FACC

- The company's investment budget for 2020 will be re-planned and reduced to meet the modified market requirements
- Their investments in the Croatian location will be reviewed, and their implementation will be delayed following a reassessment of the prevailing situation
- The company decided to increase the available liquidity reserves and make use of state-subsidized funds
- It is in negotiations with its core banking partners to increase the credit line granted within the control bank refinancing framework by €60 million
- The company successfully redeemed bond for €90 million
- The company defined an additional "Corona Savings Program" of €15 million and is implementing it

GE

- It is targeting a $2 billion reduction of operational cost and a $3 billion cash preservation

Meggiot

- The company secured a $575 million multi-currency revolving credit facility maturing in September 2022

Northrop Grumman

- In March 2020, the company issued $2.25 billion of unsecured senior notes to help preserve financial flexibility

Safran

- The company set up a €3 billion bridge loan with a syndicate of French and international banks
- On May 15, it refinanced €800 million of this loan by issuing 7-year convertible bonds, paying an annual coupon of 0.875%, with a conversion premium of 40% (exercise price of €108.23)
- The company set up a new €3 billion credit line after it did not draw a €2.52 billion credit facility available until December 2022

Sources: *Company website, press articles, and FactSet*

Operations

Revised Operations

IMPACT OF COVID-19

- Various companies changed their strategy and financial & operational targets to combat the present scenario
- Reducing the production rate was a major step adopted by companies

AIRBUS

The company's new average production rates were reduced and have been set as follows:

- A320 to rate 40 per month
- A330 to rate 2 per month
- A350 to rate 6 per month

SAIC

- The company adjusted EBITDA as a % of revenues: 7.8%, including 30 bps negative impact
- It estimated Q1 impact from COVID-19 to be ~$33 million of revenue, $8 million of adjusted EBITDA, and an immaterial net impact to free cash flow

MOOG

- The company announced plans to optimize the timing of cash flow, implement vendor financing programs, and align company resources and incoming inventory with expected customer demand

Textron

- The company projected to likely incur pretax charges related to the restructuring in the $110–130 million range
- Severance and related costs are projected to be in the $60–70 million range
- Closure of facilities is projected to result in asset-impairment charges of $30–35 million
- Also, the company will incur contract-termination charges of $20–25 million related to the closure of facilities

Safran

- The company estimates to deliver less than 1,000 LEAP engines in 2020

Arconic

- All other US-based rolling and extrusion facilities will decrease production and operate with a reduced labor force through shortened work weeks, shift reductions, and elimination of temporary workers and contractors
- All rolling mill facilities in Europe, China, and Russia will modify schedules, adjust work hours, lower costs, and delay raises

Boeing

The company reduced commercial airplane production rates:

- The 737 MAX aircraft production will resume at lower rates in 2020, and it will gradually increase to 31 per month during 2021
- The 787 production rate will reduce from 14 per month to 10 per month in 2020 and gradually reduced to 7 per month by 2022
- The 777/777X combined production rate will be reduced to 3 per month in 2021

Rolls Royce

- Has planned operational savings; expected to have a cash flow benefit of £750 million in 2020

Spirit AeroSystems

- Spirit extended its suspension of work on Boeing commercial programs at the Wichita, Tulsa, McAlester, and San Antonio sites
- To further address the financial challenges, the company is implementing temporary workforce furloughs at the listed sites

Sources: *Company website, press articles, and FactSet*

Divided Suspension

Most Companies Have Suspended Dividend to Preserve Liquidity

IMPACT OF COVID-19

ARCONIC | BOEING | BAE SYSTEMS | DASSAULT AVIATION | HEXCEL | MEGGITT | MOOG | Triumph Group

AIRBUS
- To bolster liquidity and improve the Group's bottom line amid COVID-19 , the company has withdrawn the 2019 dividend proposal of €1.80 per share with an overall cash value of ~€1.4 billion

Marshall
- To preserve its financial position, the company has canceled the 2019 final dividend of 9.65p and the previously announced supplementary dividend of 4p

MTU
- The company is not paying dividend to save €180 million

OHB
- The company is avoiding a liquidity outflow in the amount of the originally planned dividend payment of ~€7.5 million

Rolls-Royce
- The company withdrew its proposed final dividend for 2019 totaling to £137 million or 7.1 pence per share

SAAB
- The company has withdrawn its dividend proposal of SEK 4.70 per share

Spirit
- The company reduced cash dividend to a penny per share

Thales
- The company has withdrawn final dividend proposal with a cash value of €430 million

Ultra
- The company has delayed the payment of its 2019 final dividend of 39.2 pence per share; intends to pay an additional interim dividend of the same amount in H2 2020

Woodward
- The company is reducing its quarterly dividend to $0.08125 per share, which currently represents ~0.63% dividend yield, in line with the company's average dividend yield for 12 months

COMPANIES STILL PAYING DIVIDEND

KAMAN — The company is **paying cash dividends of $693 million** in the Q12020

LOCKHEED MARTIN — The company declared a regular quarterly dividend of **20 cents per common share**

Sources: *Company website, press articles, and FactSet*

Share Repurchase Termination

Most Companies Have Terminated Share Repurchase

ASTRONICS · BOEING · SPIRIT AEROSYSTEMS · MOOG

AAR
- The company adopted a limited duration stockholder rights plan
- It declared a non-cash dividend distribution of one preferred share purchase right for each share of AAR's common stock outstanding as of April 9, 2020 (the record date)

HEXCEL
- The company suspended the employee stock purchase plan and stock repurchases until further notice
- It adopted a limited duration shareholder rights plan

KAMAN
- The company does not intend to effectuate any additional share repurchase until the subsidence of the ongoing COVID-19 pandemic and any related impact on business, results of operations, and cash flows
- It has ~$2.2 million available for repurchases

L3HARRIS
- The company shifted the timing of share repurchase, which has bolstered liquidity in support of employees, suppliers, and customers during the pandemic
- It has ~$1.7 billion for share repurchase, inclusive of proceeds from divestitures announced year-to-date

Raytheon Technologies
- The company plans to suspend share buyback

WOODWARD
- The company adopted a limited duration stockholder rights plan

COMPANIES REPURCHASING AMID THE PANDEMIC

GENERAL DYNAMICS

The company repurchased **an additional 10 million shares** of the issued and outstanding common stock on the open market

LOCKHEED MARTIN

They are **repurchasing 1.7 million shares** for $756 million

Sources: *Company website, press articles, and FactSet*

Employees 1/4

Most Companies are Furloughing and Reducing Workforce

COVID-19 has triggered lockdowns and supply chain problems, which resulted in job slashing

ASTRONICS

Reduced employee count by 30% to about 2,000, froze wages, and eliminated cash bonus plans

GE

The **company laid off 558 full-time employees and 47 part-time workers** (a part of company's broader plan to cut 25% of its global workforce)

GENERAL DYNAMICS

The company's subsidiary, Gulfstream, **plans to cut 699 jobs** in Georgia

COMPANY	FURLOUGHS	LAYOFFS	PLANS
AAR	~1,000 full-time employees	269 employees	• Plans to eliminate significant headcount through contractor and employee reductions • Plans to freeze new hiring, reduce or eliminate all non-essential spend, furloughs, and, unfortunately, reduce workforce
AIRBUS	3,200	15,000 jobs, including 5,000 (France) 5,100 (Germany);1,700 (Britain), 900 (Spain) and 1,300 (ROW)	• Asked its 135,000 employees to brace for potentially deeper job cuts due to the impact of the COVID-19 pandemic on the aerospace sector
HEXCEL	Unpaid furloughs for all salaried employees whose positions have not been eliminated	288 permanent 50 temporary	• Plans to reduce the total workforce to align operations with customer demand • Plans to temporarily reduce salary • Aims to eliminate contract labor and overtime • Plans to reduce labor cost by 30% on a rolling basis
SAFRAN	35% on a worldwide basis (40% in France)	3,000 employees	• Plans to reduce the number of employees under permanent employment contracts (hiring freeze, layoffs) across all Group businesses • Plans non-renewal of all short-term contracts
TEXTRON	7,000+ workers	1,950 jobs or 6% of its workforce	• Plans to layoff 250 employees at Textron Aviation facilities across the country and 70 workers in Wichita

***Sources:** Company website, press articles, and FactSet*

Employees 2/4

Companies are Freezing New Hiring and Reducing Temporary Workforce

IMPACT OF COVID-19

To reduce expenditure, the following companies have opted for furloughing and layoff

Panasonic – Panasonic Avionics Corporation

The company **laid off 223 people** (about 10% of its workforce) at the Lake Forest facility. Its remaining employees are subject to reduced work schedules or terminations and furloughs

WOODWARD

The company has **frozen hiring and permanently laid off 425 employees,** as well as plans to furlough people

TRANSDIGM GROUP INC.

- The company plans to reduce workforce by up to 15%
- It is implementing one to eight week furloughs at many businesses over the next six months in response to business-specific situations

(Impacted domestic employees will receive a substantial lump sum payment upon their departure based on their tenure, along with an additional $4,000 to defray expenses associated with healthcare, job search, or for any other purpose)

THALES

- The company laid off 132 people in Irvine, including connectivity team members
- It froze hiring in support functions
- It is planning sharp reduction of temporary work
- The company is implementing exceptional government-supported temporary furloughs in countries that provide for them
- Offered paid leaves during the lockdown period

MOOG

- The company froze hiring and salary disbursement

KONGSBERG

- The company laid off 550 employees temporarily

KAMAN

- The company plans to reduce workforce and furlough employees

SPACEX

- The employees who test positive will be granted 10 additional sick days

Marshall

- Plans to furlough 100 people around different businesses

HEICO

- The company laid off a few employees, temporarily reduced work hours, and imposed temporary pay reductions at subsidiaries

Sources: *Company website, press articles, and FactSet*

Employees 3/4

To Align Workforce To Demand, Companies are Taking Additional Steps As Necessary

ARCONIC

- The company laid off 24 workers from its facility in Massena
- The salaried workforce will be restructured, targeting a 10% reduction
- The 401K match program will be suspended for salaried employees

BOEING

- The company initiated a voluntary layoff plan, which offers eligible employees an option to exit the company with a pay and benefits package
- It plans to eliminate ~10% employees, which represents ~16,000 people

Rolls-Royce

- The company plans to eliminate 3,000 jobs in the UK in 2020
  - The firm expects 1,500 jobs to go in Derby and the East Midlands – its main manufacturing base – 200 in nearby Barnoldswick, and an additional 700 in Inchinnan, Scotland; sites across the rest of the UK, including Bristol and Solihull, will also see job losses in the 50–200 range per location
- It expects to trim a total of 8,000 positions from the aviation division

Rolls-Royce aims to save £1.3 billion in 2020 and expects £700 million ($881 million) of savings to come from job cuts

Triumph Group, Inc.

- The company laid off 200 additional staffers, and it will furlough 2,300 workers in response to the shutdown of Boeing's commercial aircraft production facilities
- It will eliminate ~250 full-time salaried employees and 250 contractor positions
  - These reductions are expected to be completed by May 1, 2020; however, no recent update is available
- The company will implement furloughs of two weeks over fiscal 2021 for certain salaried employees to minimize reduction in force; additional furloughs may be required based on site closures or reduction in customer demand for Triumph's products and services
  - Base salaries and wages for hourly and most salaried employees will be maintained; medical benefits will continue during furloughs

SPIRIT AEROSYSTEMS

- In January, the company reduced 2,800 employees in Wichita, Kansas, and 400 employees in Oklahoma; it also eliminated 200 contractor positions
- It announced a further reduction of 1,450 employees in Wichita, Kansas; additional reductions at other Spirit locations have also been planned to align to lower production levels
- The company initiated a voluntary retirement program for 850 hourly and salaried workers
- It extended IAM and IBEW union contracts for three years
- It initiated a 21-calendar-day furlough of production workers and managers supporting Boeing programs in Wichita, Kansas; and Oklahoma
- The company implemented a four-day work week for salaried workforce at the Wichita, Kansas, facility until further notice

Sources: *Company website, press articles, and FactSet*

Employees 4/4

Employees Working in the Aerospace Segment are Most Affected

IMPACT OF COVID-19

Raytheon Technologies

- The company **reduced salaried employees' pay by 10%** until the end of the year and **awarded an extra 15 days off** this year

United Technologies

- The company deferred annual merit increase for executive and salaried employees

Collins Aerospace

- The company plans a 10% pay cut for salaried workers until the end of the year
- As a part of the salary reduction, it has designated 15 holiday-adjacent days during which those employees should not work
- The company also does not plan to provide incentive compensation payouts for 2020
- It initiated a Voluntary Separation Program for eligible employees in the US
- It announced furlough programs across its operations for hourly employees and layoffs at the Houston office are expected to begin in late-July

MEGGITT

- The company implemented furlough schemes where available and reduced temporary labor
- It reduced the size of its global workforce by ~15% (1,800 jobs), including the layoff of 118 employees at its McMinnville factory, to reduce expenditure by £400–450 million
- The company froze all new hiring and ceased the annual salary increase for all employees

COMPANIES HIRING BY USING VIRTUAL TECHNOLOGY AND OTHER TECHNIQUES

L3HARRIS™ FAST. FORWARD.

- The company hired more than 2,500 new employees in 2020

LOCKHEED MARTIN

- The company hired 8,300+ new employees across the US since the COVID-19 crisis began and is advertising for ~3,200 roles
- It plans to hire 12,000 employees during 2020

LEONARDO

- The company started its recruitment call for young talents for "Leonardo Labs", for the new R&D corporate laboratories focused on innovation in Leonardo's traditional sectors, and for the development of new long-term technologies

Sources: *Company website, press articles, and FactSet*

Executive Compensation

Changes in Executive Compensation

IMPACT OF COVID-19

- Companies such as Boeing and Heico have reduced their executive compensation to adjust for losses
- Board members of companies such as MTU Aero Engines AG and Singapore Technologies have reduced their fees
- Rolls-Royce Holdings plc has deferred bonus payment to its executives

COMPANIES THAT REDUCED EXECUTIVE COMPENSATION

ARCONIC

- The CEO's salary and the Board of Directors' annual cash retainer will be reduced 30%
- The senior-level management will incur a 20% salary reduction, while all other salaried employees will incur a 10% cut

GE

- David Joyce (President and CEO of GE Aviation and Vice Chairman of GE) will forgo half of his salary, while Larry Culp (Chairman and CEO of GE) will forgo salary for the rest of 2020, beginning April

Collins Aerospace

- The company reduced the CEO's salary 25% beginning May 2020 and slashed the salaries of all SVPs by 15%. Additionally, all other non-manufacturing employees saw a reduced salary of 7.5%
- Board Members reduced their cash fees by 50%

KAMAN

- The President and CEO reduced 20% of his annual base salary for the entire year, effective April
- A temporary 15% reduction in the annual base salaries of the company's other executive officers, including all currently employed and named executive officers
- The scheduled quarterly cash retainer payments of Non-Employee Directors was slashed by 20% from April 2020 through the end of Q3 2020
- The company announced a temporary 10% reduction in the annual base salaries of other US-based corporate officers and certain other officers employed by the company's subsidiaries for the same period

HEXCEL

- For 2020, the company reduced the base salary of Chairman, CEO, and President by 50% and of other executive officers by 30%
- Retainer Fees for Non-Employee Directors were reduced by 50%

MTU Aero Engines

- The Executive Board and the senior management waived their income and set up a solidarity fund of €4 million for those facing hardship due to short-time working

CAE

- Salary cuts: 50% for the CEO and executive team, 30% for VPs, 20% for directors and managers, and 10% for group leaders and employees

***Sources:** Company website, press articles, and FactSet*

Other Steps Adopted

Several Companies Adopted Additional Steps to In Response To Market Conditions

- Several companies, such as LISI SA, Rolls-Royce Holdings plc, and Safran SA withdrew their previously announced financial guidelines
- On the other hand, a few companies, such as SAIC, provided updated guidance

COMPANIES TACKLING THE SITUATION IN OTHER WAYS

AVIC

- AVIC honored 579 employees as Counter-COVID-19 Hero

Boeing

- Boeing South Carolina’s employees received paid leaves for 10 working days of the suspension period
- Post this, they will have an option to use a combination of available paid leaves

GE

- The company is offering additional COVID-19-related paid leave policy for employees who were diagnosed with the virus or were quarantined

Hexcel

- The company terminated the merger agreement with Woodward

SAIC

- The company accelerated payments to affected small business partners

Huntington Ingalls Industries

- In mid-March, the company instituted a temporary pay policy, under which each employee could be paid up to five days of COVID-19 absence pay, without providing documentation; the policy has ended now
- The company reduced the number of business units from 6 to 4, along with a reduction in the number of legal entities

NAMMO

- Its main concern is that the pandemic may disrupt operations of its partners in government, particularly those responsible for contracting, approving, and receiving deliveries from Nammo’s facilities across Europe and North America

CAE

- Recalled 1,500 employees as a result of government relief programs though is uncertainty as to how long these programs could last

AIDC

- The company revised its outlook to ‘negative’ from ‘stable’ to reflect the downside risk for the debt-to-EBITDA ratio to remain high for a longer period

Sources: *Company website, press articles, and FactSet*

Financial Impact on Companies 1/3

Negative Impact on Companies' Financials Due to COVID-19

Airbus

- The commercial aircraft business activity dropped ~40% in recent months

Curtiss-Wright

- The company expects that the current travel restrictions and changes in the propensity for general public to travel by air have caused a reduction in demand for commercial aircraft
- This is expected to adversely impact net sales and operating results for an extended period

General Dynamics

- Travel restrictions delayed deliveries of business-jet aircraft, which resulted in a $549m decline in revenue for the company's Aerospace segment
- Nevertheless, the segment's backlog remains strong, up $1.1 billion or 9.1%, over the year-ago quarter

Leonardo

- In Q12020, the company recorded a revenue of € 2.6 billion (-5% YoY), EBITA of €41 million (-75% YoY), and net result negative for €59 million
- Its free operating cash flow of (€1.6 billion) was in line with the usual seasonal trend

LISI

- LISI Aerospace's sales were down 10.3% and the structural components activity was the most affected

Rolls-Royce

- The company estimates a £300 million hit from the pandemic in Q1

Safran

- The company's revenue in Q1 decreased 13.9% YoY to €694 million

L3 Harris

- During the quarter ended April 2020, the company recorded $3 million of restructuring charges for workforce reduction (including severance and other employee-related exit costs) within the Aviation Systems segment
- It recorded a $10 million charge to provision for doubtful accounts to reflect an increase in expected credit losses
- It recognized $330 million of charges for impairment of goodwill and other assets as well as other COVID-19-related impacts in Q1 2020
- The company also expects revenue and operating income from the commercial aviation solutions sector to decline for the remainder of fiscal 2020 due to decreased commercial training and commercial avionics sales

Spirit AeroSystems

- The company recognized abnormal costs of $25.4 million resulting from the suspension of Boeing production in March 2020

Textron

- The company reported a $332 million or 10.7% decline in revenue over Q12020
- Its profit tumbled 97% YoY to $3 million largely due to an idle factory floor and sagging aircraft sales
- The company expects to incur idle facility costs of $70–80 million, mostly attributable to Textron Aviation

Thales

- Order intake: Estimated €190 million for Q1, of which €80 million is related to civil aeronautics businesses and ~€110 million is related to other businesses, largely due to delayed orders
- The company's Aerospace segment sales stood at €1,083 million – down 11.3% over Q1 2019, including a €60 million impact due to COVID-19-related disruptions on civil aeronautics businesses

Sources: *Company website, press articles, and FactSet*

Financial Impact on Companies 2/3

Negative Impact on Companies' Financials Due to COVID-19

BOMBARDIER

- Earnings were lower YoY for Q1 2020
- Adjusted EBITDA and adjusted EBIT margins were 6.7% and 1.6%, respectively for Q1 2020, lower YoY
- Free cash flow for the quarter was negatively impacted by delayed aircraft deliveries caused by travel restrictions and production shutdowns, as well as a slowdown in order intake tied to the economic uncertainty resulting in an estimated $400 million to $500 million free cash flow shortfall for the quarter
- Significant slowdown in order intake during the month of March lead to a $13.6 billion business aircraft backlog at the end of the quarter

CAE

- Lead to closure of training centre operations, lower utilization of simulators in the network due to reduced demand, and interruptions in the execution of the backlog
- Also delays were experienced in the awarding of new contracts and in the execution and advancement of certain programs

CRANE AEROSPACE & ELECTRONICS

- Reduced both GAAP and adjusted EPS in Q1 2020 by ~$0.15-$0.20
- Sales declined by 4% compared to the Q1 2019

FIGEAC AERO

- Business volumes contracted by 25% in March and revenue for the Q4 of FY2019/20 came to €98.8 million, which is 13.4% lower YoY
- At constant scope and exchange rates, the Group's quarterly revenue fell by 15.2% (-14.6% for the Aerostructures division)

LATÉCOÈRE

- Resulted in an estimated €1.0 million decrease in Aerostructures and an estimated €3.0 million decrease in Interconnection Systems in Q1 2020

HÉROUX DEVTEK

- Recorded CAD86 million of non-cash impairment charges, which resulted in a net loss of CAD51 million
- Gross profit reduced from 17.2% in FY2019 to 16.8% in FY2020

GKN AEROSPACE

- Sales in the first four months of 2020 were down about 20% YoY (In aerospace, sales were down 8% YoY)

Sources: *Company website, press articles, and FactSet*

Financial Impact on Companies 3/3

Companies that Did Not Face Any Material Impact Due to COVID-19

BAE SYSTEMS

- The pandemic had "no material impact" on the company in the first three months of 2020, with weapons orders still flowing in and its factories operating, albeit with changes to safeguard staff
- Demand for the company's defense products, which account for 90% of group revenues, remained strong, but some manufacturing lines were affected by disruption

Barnes GROUP INC

- The company had a solid financial position with sufficient liquidity of ~$400 million; ~$120 million in cash and ~$280 million in an undrawn revolving credit facility
- The company is in full compliance with all covenants under the revolving credit facility, which matures in February 2022
- The company's management has taken proactive measures to reduce costs and manage working capital

हिएलि HAL

- Impact of COVID-19 on the company is expected to be minimal as a major portion of its revenue is generated from defense services
- The Indian Ministry of Defense have extended the contractual delivery date for a period of 4 months to July 24th, 2020 due to force majeure
- Based on the business model, there is no material impairment that needs to be recognized on plant property equipment, receivables, or inventory

OHB

- The company's 3-month results for 2020 were in line with expectations despite the COVID-19 crisis, with a revenue of €184 million and EBITDA of €19.3 million – a 1% YoY drop; EBITDA margin increased from 10.2% to 10.5%

ARCONIC

"Our liquidity and financial position remains strong despite the pandemic's impact to our business. We have an excess of a billion dollars of available liquidity today (inclusive of approximately $500 million of cash on the balance sheet at the time of our separation) and our current capital structure maturities are well into the future. Our business is flexible and cash requirements are countercyclical, and we expect working capital will be a source of cash in the near term, and together with the benefit of the recent management actions to reduce costs, we believe we have adequate liquidity to operate the Company in spite of ongoing uncertainties."

-- Erick Asmussen, CFO

MOOG

"Overall, the second quarter was very strong with the impact from the pandemic only starting to affect our operations late in the quarter. As we look forward, our diversity across markets and our strong balance sheet are key to navigating the short-term challenges, while the strength of our franchise and our fundamental approach to business are the basis for our continued long-term success."

-- John Scannell, Chairman and CEO

Sources: *Company website, press articles, and FactSet*

Social Responsibility 1/2

Most Companies are Offering Masks and PPE to Assist in the Fight Against COVID-19

<table>
<tr><th>MASKS</th><th>FACE SHIELDS</th><th>PPE</th><th>VENTILATORS</th><th>SANITIZERS</th><th>FINANCIAL SUPPORT</th><th>TEST KITS</th></tr>
<tr><td>THALES</td><td colspan="3">SPIRIT AEROSYSTEMS</td><td></td><td>Ducommun</td><td>KAI KOREA AEROSPACE INDUSTRIES, LTD.</td></tr>
<tr><td colspan="2">TEXTRON</td><td>BAE SYSTEMS</td><td>MEGGITT</td><td></td><td>Ball Aerospace</td><td></td></tr>
<tr><td colspan="6">ST Engineering</td><td></td></tr>
<tr><td>Panasonic
Panasonic Avionics Corporation</td><td></td><td></td><td colspan="2">SPACEX</td><td>AVIC</td><td></td></tr>
<tr><td>Marshall</td><td></td><td colspan="2">GENERAL ATOMICS AERONAUTICAL</td><td colspan="2"></td><td></td></tr>
<tr><td></td><td colspan="2">BOEING</td><td>L3HARRIS™ FAST. FORWARD.</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td colspan="2">AIRBUS</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>NORTHROP GRUMMAN</td><td colspan="2"></td><td></td><td></td></tr>
<tr><td>Raytheon Technologies</td><td>United Technologies</td><td>Collins Aerospace</td><td></td><td></td><td></td><td></td></tr>
</table>

Sources: *Company website, press articles, and FactSet*

Social Responsibility 2/2

Several Companies Are Providing Support in the Fight Against COVID-19 in Their Own Way

DASSAULT AVIATION

Made available two jets to supply logistics and medical support

LOCKHEED MARTIN

Allowed the use of the corporate aircraft, as well as of their facility

EUROPROP International

Allowed the use of the corporate aircraft, as well as of their facility

SAIC

Deployed IT and communications infrastructure

SAFRAN

- *Makes spare parts for ventilators*
- *Provided rapid test kits*
- *Provides oxygen masks and other military or aviation products*

EMBRAER

- *Helped increase the availability of equipment and solutions to combat COVID-19*
- *Partnered with the Albert Einstein Hospital to provide technical support for the development of biological air filter systems for air quality control*

IAI

- *Retooled a missile production line into a ventilator producing facility to deliver critically needed ventilators*
- *Collaborated with the United Arab Emirates on COVID-19 Research on technology solutions*
- *Developed a room-scale disinfection prototype*

GE

Provided masks and financial support

Triumph Group

Provided PPEs and financial support

LEONARDO

- *Offers a free-of-charge threat intelligence service for two months to companies*
- *Offered the services of its pilots and allowed the use of three helicopters*

Hanwha Aerospace

Donated Hygiene Kits

हिएलि HAL

Produced and handed over 300 Aerosol boxes

Sources: *Company website, press articles, and FactSet*