



**IBC ADVANCED ALLOYS CORP.**

**MANAGEMENT'S DISCUSSION AND ANALYSIS**

**YEAR ENDED JUNE 30, 2016**

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**IBC Advanced Alloys Corp.**  
**Management's Discussion and Analysis**  
Year Ended June 30, 2016

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*The following is management's discussion and analysis ("MD&A") of IBC Advanced Alloys Corp., and its subsidiaries, prepared as of October 25, 2016. This MD&A should be read together with the audited consolidated financial statements and related notes for the year ended June 30, 2016. Financial amounts, other than amounts per share or per pound, are presented in thousands of United States dollars ("\$\$") unless indicated otherwise. Canadian dollar amounts are denoted by "C\$".*

*The terms "IBC", "we", "us" and "our" refer to IBC Advanced Alloys Corp. and its subsidiaries, unless the context otherwise requires.*

*Certain information included in this MD&A may constitute forward-looking statements. Statements in this report that are not historical facts are forward-looking statements involving known and unknown risks and uncertainties, which could cause actual results to vary considerably from these statements. Readers are cautioned not to put undue reliance on forward-looking statements.*

*Our audited consolidated financial statements for the year ended June 30, 2016 have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB") using accounting policies consistent with IFRS as issued by the IASB and interpretations of the International Financial Reporting Interpretations Committee.*

*Additional information relating to us is available for view on SEDAR at [www.sedar.com](http://www.sedar.com).*

## **Our Business**

We are primarily engaged in developing and manufacturing advanced alloys, in particular beryllium-aluminum alloys and specialty copper alloys. Our head office is located in Franklin, Indiana. We operate four plants in the United States ("US") that manufacture, heat-treat, machine or market copper-beryllium, beryllium-aluminum, copper-based master alloys and similar specialty alloy products including beryllium-aluminum castings. Our manufacturing operations currently employ 69 people. Our manufacturing operations comprise two divisions: Copper Alloys and Engineered Materials.

- Copper Alloys manufactures and distributes a wide variety of copper alloys as castings and forgings: beryllium copper, chrome copper, oxygen-free high conductivity copper and aluminum bronze in plate, block, bar, rings and specialty copper alloy forgings for the industrial welding, oil and gas, plastic mold, metal melting, marine defense, electronic and industrial equipment markets.
- Engineered Materials manufactures and supplies high-performance beryllium-aluminum components to the aerospace and high-tech manufacturing sectors.

At present, we are engaged in research and development on scandium-containing alloys, and we are monitoring developments related to the potential use of beryllium oxide in enhanced nuclear fuels, which has been the subject of previous research by the Company.

We were formed by an amalgamation under the laws of British Columbia on November 23, 2007 and our common shares are listed on the TSX Venture Exchange (the "TSX-V") under the symbol "IB" and on the OTCQB market under "IAALF".

## **Corporate Developments**

- In October 2016, Anthony Dutton agreed to resign as a director and officer of the Company effective October 31, 2016 (see *Related Party Transactions* below).

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- In September 2016, we were accepted as an approved forging supplier by Newport News Shipbuilding and by General Dynamics' Electric Boat Corporation.
- In August 2016 the Company settled \$125,748 owing to our CEO and director through the issuance of 203,681 shares.
- In June 2016, we signed a joint development agreement with BAE Systems for the production of prototype Beralcast® components.
- In June 2016, we awarded options to purchase up to 741,500 common shares to directors, officers and employees at C\$0.77 per share.
- In May 2016, we closed a private placement raising gross proceeds of C\$7.46 million (\$5.5 million) and undertook a one-share-for-ten consolidation of our share capital. See *Corporate Reorganization* and *Private Placement* below. All share and per-share amounts have been restated to reflect the effect of the share consolidation.
- In May 2016, Mark Smith and Geoff Hampson joined our board of directors. Dal Brynelsen and Alastair Neill, who had served on our board since 2007 and 2011 respectively, stepped down.
- In May 2016, we appointed Major General David Heinz (USMC, retired) as president and chief executive officer and Anthony Dutton, our former president and CEO, as vice-president of corporate relations and special projects. Major General Heinz' appointment follows his January 2016 appointment as chief operating officer. Major General Heinz has been a director of IBC since May 2011 and remains on the board.

## **Private Placement and Corporate Reorganization**

### *CORPORATE REORGANIZATION*

In May 2016, we consolidated our share capital on the basis of one post-consolidation common share for every ten pre-consolidation common shares. We previously had 98,085,813 common shares issued and outstanding and, following the consolidation, had 9,808,492 common shares issued and outstanding, after adjusting for rounding. We did not issue any fractional shares. We believe the consolidation will provide us with increased flexibility when negotiating financings and better access to equity markets in which to raise any capital we may require in the future to further develop our manufacturing operations and strengthen business operations.

### *PRIVATE PLACEMENT*

In conjunction with the consolidation, we completed a non-brokered private placement issuing 19,893,670 post-consolidation units at an issue price of C\$0.375 per unit for gross proceeds of C\$7.46 (\$5.5) million, which reflected receipts exceeding the original 25% oversubscription option. Included in this amount is C\$0.39 million of subscriptions by directors, officers, employees and consultants as settlement for amounts owed to them and C\$0.73 million of other subscriptions by insiders. The planned use of proceeds is for equipment upgrades to our Engineered Materials and Copper Alloys operations and for general working capital purposes.

Each unit consists of one post-consolidation common share of IBC and one transferable share purchase warrant. Each warrant is exercisable to acquire an additional post-consolidation common share of IBC at a price of C\$0.50 until May 24, 2021. The warrants have an acceleration provision, so that in the event IBC trades at C\$2.50 or greater for 21 consecutive trading days at any time until May 24, 2018, warrant holders will have 60 days to exercise their warrants, failing which the warrants will expire. The securities issued were subject to a hold period that expired on

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September 25, 2016. In connection with the private placement, we paid finders' fees and issued finders' warrants and units. Full particulars are provided in *Shareholders' Equity – Private Placement* below.

We entered into a consulting agreement with Rory Godinho as part of the reorganization, under which he provided corporate finance advice to us and managed the private placement. In addition, Mark A. Smith, acting through his company KMSMITH LLC, advised the Company on restructuring our business and operations.

### **Board of Directors Changes**

In conjunction with the reorganization and private placement, Dal Brynelsen and Alastair Neill stepped down from the board. Our board and management have joined in thanking Messrs. Brynelsen and Neill for their service to the Company. Two new directors joined our board and we provided information on their backgrounds in our March 31, 2016 MD&A filed on SEDAR.

### **Manufacturing Operations**

We currently have four manufacturing operations in the United States that employ 69 people.

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<b>Location</b>	<b>Building Area</b>		<b>Leased/Owned</b>	<b>Employs</b>
	<b>m<sup>2</sup></b>	<b>sq ft</b>		
Copper Alloys				
Franklin, IN	4,500	48,800	Owned	33
Royersford, PA	1,500	16,000	Leased	10
New Madrid, MO	2,500	26,500	Owned	6
				<hr/> 49
Engineered Materials				
Wilmington, MA	5,800	63,000	Leased	20
				<hr/> 69

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Most of the Company's management and administration are based at the Franklin, IN facility.

#### *COPPER ALLOYS*

We manufacture and distribute a wide variety of copper alloys as castings and forgings: beryllium copper, chrome copper, oxygen-free high conductivity copper, and aluminum bronze in plate, block, bar, rings and specialty copper alloy forgings for various markets and applications. We sell directly to end users and serve some markets through a network of established dealers and distributors. Our Copper Alloys operations are based in Franklin, Indiana, where we maintain a forging (hammer, press and ring rolling), heat-treating and machining operation. We cast billets at plants in Royersford, Pennsylvania and New Madrid, Missouri. Our Franklin plant sits on 4.8 hectares (12.0 acres) of land that has considerable room for expansion.

We source copper alloys in cast billet, slab or ingot from mills in North America, Europe and Asia and convert these into usable industrial products serving the industrial welding, oil and gas, plastic mold, metal melting, marine defense, electronic and industrial equipment markets. We also provide tooling components for the North American automotive industry, the European and North American consumer plastic tooling producers, the global oil and gas service industry, the prime North American submarine and aircraft carrier producers and repair facilities including the US

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Navy, electronics industries and general equipment manufacturers. We produce material at two IBC-owned mills and buy other billet from independent third-party mills.

We have expertise in melting and casting beryllium copper and other beryllium containing alloys. Our casting operations are a primary producer-supplier of beryllium copper casting and master alloy ingot products in North America and markets around the world. Our copper alloys operations also manufacture beryllium nickel and low-beryllium-content beryllium-aluminum alloys. We offer our customers a full range of manufacturing and support services including casting and master alloy products, cast and forged billet products, semi-continuous cast input billets and wrought products. We manufacture our beryllium alloys utilizing either pure metallic beryllium or certified beryllium copper master alloy.

Our Royersford facility has three furnaces that have been adapted to meet the specialized requirements of beryllium alloy manufacturing. We have strong technical and manufacturing engineering resources in the highly specialized beryllium and beryllium containing alloy industry. This gives us the capability to manufacture large 21-inch diameter beryllium copper input billets weighing up to two tonnes. These large-scale as-cast billets exhibit consistently fine-grained, uniform micro-structures coupled with high purity, low carbide chemical compositions.

Our New Madrid plant is located on a 2.4-hectare (6.0 acres) site 265 kilometres (165 miles) south of St. Louis, Missouri. It has two furnaces and is capable of producing billets in a range of sizes and compositions. We are planning to upgrade this facility to make it suitable for beryllium alloy production when production volumes justify the investment. This facility is underutilized and as a result, there is room for significant expansion of plant operations at this location.

*ENGINEERED MATERIALS*

Engineered Materials supplies high-performance beryllium-aluminum components to the aerospace and high-tech manufacturing sectors. We currently manufacture the Beralcast® and ABX™ families of metal matrices that can be used in commercial and military applications requiring complex, lightweight or high-stiffness parts. We have additional, higher-performance products in development and plan to launch at least one new major product line in the next six months. Using our proprietary manufacturing techniques, we plan to make beryllium-aluminum components more accessible and cost-effective.

In general, Beralcast® and ABX™ alloys serve as a higher-performance or lower-cost replacement materials for cast aluminum, magnesium, titanium, metal matrix composites, non-metallic composites, and pure beryllium or powder metallurgy beryllium-aluminum. Some of the varied applications include automotive braking and structural components and aerospace and satellite system components.

The principal Beralcast® metal matrix is more than three times stiffer than aluminum with 22% less weight and can be precision-cast to simple and complex configurations. This material is very lightweight with a high modulus of elasticity and can be precision cast for three-dimensional stability. Beralcast® is ideally suited for certain demanding semiconductor manufacturing equipment, computer components and other commercial and aerospace applications and allows for a near-net shape to be cast for maximum manufacturing efficiencies.

Binary beryllium-aluminum composites were developed by a US corporation, which was originally a metallurgical laboratory affiliated with MIT, in cooperation with Lockheed Martin. We own the intellectual property relating to the more advanced development of this technology, which is a proprietary and patented castable metal matrix composite beryllium aluminum alloy now manufactured as Beralcast®. We believe that a competitor has launched an alternative cast

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beryllium-aluminum product which, if commercially viable would be a direct competitor to Beralcast® and ABX™.

We have trade name rights to Beralcast® and ABX™; proprietary know-how; manufacturing equipment; marketing and supply agreements; and US beryllium stockpile bidding requirements and bona fides. Since the manufacturing process is different from that employed for Copper Alloys, we operate a separate manufacturing facility optimized for Beralcast® and ABX™ alloys.

We are developing Engineered Materials' business by undertaking product-focused development initiatives with a heavy emphasis on defence applications. Generally, the process is as follows:

1. Memorandum of understanding – The first step is to assess the feasibility of using Beralcast® in the customer's application.
2. Non-recurring engineering – At various stages between the initial feasibility assessment and production, we and our customer engage in engineering work to tailor the part design to the material and assess its performance.
3. Hard tooling – Once production is likely, the customer asks us to design, manufacture and implement hard tooling to be included as part of final qualification process. Although not a guarantee that a production order will follow, a hard tooling contract is a very strong indication that the customer expects to enter volume production of the component.
4. LRIP (low-rate initial production) – New programs typically work through a start-up phase to iron out problems before production reaches long-term levels. As part of the first production run, we work with our customer on various quality assurance steps culminating in the first article inspection.
5. Volume production.

We are currently working on various initiatives at stages from memorandum of understanding to volume production.

*Recent Business Initiatives*

In September 2014, Lockheed Martin Missiles and Fire Control selected Engineered Materials to provide critical cast components for the EOTS system on the F-35 Lightning II. The first component covered by this contract is an EOTS azimuth gimbal housing being manufactured using Beralcast®, Engineered Material's proprietary beryllium-aluminum casting alloy.

Lockheed Martin has awarded us two contracts for production azimuth gimbal housings for OEM aircraft and spares. These contracts are for the ramp-up production period, or LRIP. The first contract, awarded in September 2013 was for LRIP lots 7 and 8 and the second contract awarded in August 2014 was for LRIP lots 9 and 10. We have completed production for LRIP lots 7 and 8 and have completed much of the production for LRIP lots 9 and 10.

The value of the initial contract was just over \$2.0 million including machining, non-recurring engineering and hard tooling deliverables; the value of the second contract, which is for castings only, is for a similar amount. These contracts, with subsequent LRIP contract awards, have the potential to increase significantly over the life of the F-35 program. The EOTS assembly being produced by Lockheed Martin for all the F-35 variants. Although our production contracts are typically about one year, planned F-35 production is expected to run through 2035 with completion of over 3,000 aircraft.

We are currently pursuing other sales opportunities with several defence companies including BAE Systems.

While we are currently operating at much less than capacity and refurbished part of our vacuum furnace in 2014, we believe that increased production at our Wilmington, MA facility will require

replacement of key parts of our furnace at an expected cost of \$0.69 million. These upgrades are currently in process and are expected to be complete in early 2017.

#### *BUSINESS RISKS*

Some of the risks that our business faces, which are specific to our operations, are:

##### *Dependence on Ulba Metallurgical Plant*

We are dependent on Ulba Metallurgical Plant ("Ulba") for our supply of vacuum-cast beryllium and beryllium copper master alloy. Ulba operates a beryllium processing and manufacturing facility and is owned by Kazatomprom, the national atomic company of Kazakhstan. As we have done in the past, we may also be able to source beryllium from the US National Defense Stockpile and a third-party business from time to time. We have entered into long-term beryllium and beryllium copper master alloy supply agreements with Ulba. Ulba's ability to honour its supply obligations will depend on its ability to source raw materials. We are unable to obtain reliable information as to the extent and availability of Ulba's raw material supply, although we understand that production uses long-term stockpiles. Any disruptions in Ulba's ability to manufacture beryllium or CTMA to our specifications would have a materially adverse effect on our business. Our contract with Ulba will expire in 2016 and if we are unable to renew the contract on commercially reasonable terms, it will have a material adverse effect on our business.

##### *Disruptions of our Manufacturing Operations*

From time to time, our operations are adversely affected by disruptions caused by such things as water line failures, power outages, equipment failures and anomalous weather. These issues normally only cause short-term interruptions, but can affect our ability to meet our quarterly revenue and profitability objectives.

##### *Need to Meet Product Specifications*

All of the products that we manufacture are required to conform to a specification. Some of these specifications are very exacting and small variations in process can cause our products to fall short of the required standard. In addition, customers' requirements can change from time to time. If we are unable to address these specification issues in a timely manner, we are at risk of losing short-term revenue and even long-term production contracts.

#### *OPERATING PERFORMANCE AND OUTLOOK*

##### *Copper Alloys*

Our first and fourth fiscal quarters are usually stronger than our second and third fiscal quarters. This is due to seasonal factors such as the holiday season and our customers' production schedules. Our second fiscal quarter was exceptionally weak with very poor Copper Alloys sales but our sales improved in the third and fourth fiscal quarters, although not yet returning to historical levels. The continued softness in sales is partly due, we believe, to a general sector weakness resulting from lower resource activity, particularly oil and gas. We expect near-term sales to continue to be soft for the aforementioned reasons. As a result, we have temporarily reduced our headcount by six employees at our foundry operations and have reallocated two employees to Engineered Materials. Looking further out, the recently completed private placement will fund the purchase of equipment, which we expect will improve both our revenues and our margins.



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Copper Alloys sales are also affected by changes in the underlying price of commodities, primarily copper. Indicative copper prices per pound are:

		<b>2015</b>		<b>2014</b>
September 30	\$	2.29	\$	3.03
December 31	\$	2.10	\$	2.85
		<b>2016</b>		<b>2015</b>
March 31	\$	2.16	\$	2.75
June 30	\$	2.20	\$	2.64

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We aim to pass the cost of copper through to our customers and do not hold large inventories of copper. Accordingly, our profitability should not be, in the long term, affected by the price of copper except to the extent that high copper prices discourage consumption or competitors lower their margins to obtain business. In the short term, price fluctuations can have a bearing on our profitability as we realize gains or losses on our inventories. Since copper is a significant component of products we sell, the price of copper does materially affect our revenues.

#### *Engineered Materials*

Engineered Materials sales in fiscal 2016 have grown as a result of ongoing Lockheed Martin business. Our third fiscal quarter sales were the best for the Engineered Materials Business since we acquired the business in 2010. As expected, shipments in the fourth fiscal quarter declined due to the timing of shipments. The excellent results in the year to date are a result of recognizing a significant proportion of revenues from both LRIP lots 7 and 8 (contract value approximately \$2 million) LRIP lots 9 and 10 (contract value approximately \$2 million). While manufacturing activity on these contracts has been fairly evenly spread over the period from September 2014 to date, revenue recognition rules have resulted in some revenues from earlier production not being recognized until fiscal 2016. We have fulfilled the contract for LRIP lots 7 and 8. We expect to complete LRIP lots 9 and 10 by the third quarter of fiscal year ending June 30, 2017.

In previous fiscal years, our Engineered Materials division has typically generated 10% to 15% of our revenues but we expect Engineered Materials' proportion of total revenue to increase over the next few years as that segment grows. In fiscal 2016, Engineered Materials generated 27% of our sales.

#### **Research Initiatives**

From time to time, we sponsor and assist in research initiatives with a view to increasing long-term demand and new market opportunities for beryllium and beryllium oxide. Our primary focus has been on enhanced nuclear fuels, but we are not actively engaged in research at present. We presented a paper on our beryllium oxide ("BeO") nuclear fuels initiative at the Characterization and Quality Control of Nuclear Fuels Conference in Hyderabad, India in December 2015.

Since 2008, we have sponsored collaborative research agreements with Purdue University and Texas A&M to develop a new type of BeO nuclear fuel. Work to date has confirmed that  $UO_2 - BeO$  fuel is longer lasting, more efficient and provides a larger safety margin than current nuclear fuels. Under the terms of the collaborative research agreements, IBC has an option to enter into an exclusive royalty-bearing license for commercial application to the intellectual property relating to the development of an advanced BeO nuclear fuel with both Purdue and Texas A&M. Purdue has filed provisional patents covering the IBC-funded nuclear fuel research.

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The next step in this research initiative will be to have an industrial assembly of the BeO-enhanced fuel approved for irradiation in a test reactor. We have not allocated funds to this initiative but are seeking a partner to jointly fund the next development step.

**Financial**

Except as noted, all financial amounts are determined in accordance with IFRS and expressed in thousands of US dollars, except per-share amount.

*SELECTED ANNUAL INFORMATION*

During the most recent fiscal years, we have not incurred any loss from discontinued operations or extraordinary items or declared any dividends.

	June 30		
	2016	2015	2014
Revenue (\$000)	16,374	17,784	16,928
Loss for the year (\$000)	(3,930)	(2,803)	(2,844)
Loss per share, basic and diluted (\$/share)	(0.33)	(0.35)	(0.42)
Total assets (\$000)	17,302	15,804	17,414
Long-term financial liabilities (\$000)	283	355	426

*SELECTED QUARTERLY INFORMATION*

During our most recent eight quarters, we have not incurred any loss from discontinued operations or extraordinary items.

Quarter Ended	Revenue	Loss for the period	Basic and diluted loss per share <sup>1</sup>
	\$000	\$000	\$
September 30, 2014	4,646	(519)	(0.07)
December 31, 2014	5,087	(706)	(0.09)
March 31, 2015	4,479	(582)	(0.07)
June 30, 2015	3,572	(996)	(0.12)
September 30, 2015	4,232	(721)	(0.08)
December 31, 2015	3,324	(1,774)	(0.19)
March 31, 2016	4,741	(296)	(0.03)
June 30, 2016	4,077	(1,139)	(0.06)

<sup>1</sup> The sum of quarterly loss per share may not add to year-to-date totals due to rounding

Factors affecting quarterly losses include:

- June 30, 2015 – while Engineered Materials enjoyed a strong quarter, Copper Alloys operations experienced a weak quarter that reflected a trend towards lower order intake.
- December 31, 2015 – Copper Alloys sales decreased markedly due in part to general sector problems (weak demand, lower price of copper) but also other factors such as ongoing customer equipment-related issues that resulted in lower orders.
- March 31, 2016 – We enjoyed record sales in our Engineered Materials division, and our loss decreased as a result.

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- June 30, 2016 – Sales declined in our Engineered Materials division compared to the quarter ended March 31, 2016 due to the timing of shipments.

*RESULTS OF OPERATIONS FOR THE YEAR ENDED JUNE 30, 2016*

We incurred a loss of \$3,930 for the year ended June 30, 2016 compared to a loss of \$2,803 in the comparative 2015 period. A summary of our results of operations to loss before other items (“operating income (loss)”) follows:

	Year Ended June 30, 2016				Year Ended June 30, 2015			
	Copper Alloys \$	Eng. Mat. \$	Corp. \$	Consol- idated \$	Copper Alloys \$	Eng. Mat. \$	Corp. \$	Consol- idated \$
Sales	11,971	4,403	-	16,374	15,113	2,671	-	17,784
Cost of sales								
Materials	6,082	847	-	6,929	9,303	746	-	10,049
Labour	2,349	987	-	3,336	1,993	1,373	-	3,366
Subcontract	988	751	-	1,739	-	-	-	-
Overhead	1,772	1,384	-	3,156	1,416	1,540	-	2,956
Depreciation	513	345	-	858	391	286	-	677
Change in finished goods	(110)	436	-	326	(189)	41	-	(148)
	11,594	4,750	-	16,344	12,914	3,986	-	16,900
Gross profit (loss)	377	(347)	-	30	2,199	(1,315)	-	884
SG&A expenses	1,906	724	1,661	4,291	1,590	1,208	1,232	4,030
Operating income (loss)	(1,529)	(1,071)	(1,661)	(4,261)	609	(2,523)	(1,232)	(3,146)
Gross margin	3%	(8%)	-	0%	15%	(49%)	-	5%

*Segment Analysis*

A discussion about the significant components of the segment operating loss and net loss follows.

*Copper Alloys*

- In the current fiscal year, Copper Alloys gross profit has been adversely affected by a combination of declining sales and significant fixed operating costs.
- Average COMEX Copper values declined 23% in fiscal 2016 compared to fiscal 2015. If our sales prices immediately followed this trend, our sales would have declined by \$2,868. However we were able to hold prices relatively steady as we turned our inventory. Therefore, the decline in copper prices reduced our sales by \$1,033. A decline in production volume decreased sales by \$998 in fiscal 2016 compared to 2015. Changes in by-product sales (\$788 decline) and sales mix (\$323 decrease) accounted for the remainder of the difference. We try to pass price changes (favourable or unfavourable) through to our customers but sharp declines in price adversely affect our profitability due to holding losses on inventory.

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- The increase in Copper Alloys expenses is primarily due to a bad debt recovery booked in the prior year and reduced salary allocations to Engineered Materials.
- Interest expense, shown below the operating income line, relates to line of credit and term loan facilities for our Copper Alloys operations.

*Engineered Materials*

- Engineered Materials gross profit margin is adversely affected by fixed costs being spread over a small sales volume. In the short term, material and supplies costs are the only significant variable expense. As noted above, we strong sales in fiscal 2016 and recorded much improved profitability measures as a result. We expect that if Engineered Materials sales further increase, gross margin will continue to improve as the fixed costs will be spread over a larger sales volume. We also expect that planned capital expenditures will improve our operating results over the course of fiscal 2017.
- Our manufacturing overhead decreased in the current fiscal period primarily as a result of staffing changes.
- Depreciation charges are a significant proportion of operating costs, so while we report an operating loss, the cash flow performance of Engineered Materials is better. We have undertaken a capital expansion plan, so depreciation expense will continue to be significant in future periods.

*Corporate*

- Corporate expenses relate to expenses incurred to manage the overall group, including senior management, fundraising initiatives, business development activities, public company costs and any expenses not directly related to manufacturing. Corporate expenses increased in fiscal 2017 due to the appointment of Major General David Heinz (USMC, retired) as president and chief executive officer and Anthony Dutton, our former president and CEO, as vice-president of corporate relations and special projects. We also incurred fund-raising expenses related to our May 2016 private placement. We have taken steps to reduce corporate overhead. We closed our Vancouver, BC office in September 2016, which, after severance costs, will result in lower corporate expenses in future quarters.
- Investor relations expense largely comprises consulting fees paid to communicate information about us to current and prospective investors. As a result of new initiatives, particularly regarding our Engineered Materials operations, we increased our investor relations activities in late fiscal 2015 and recognized those expenses throughout fiscal 2016. We have curtailed new investor relations programs and expect investor relations charges to decline as a result.
- Professional fees comprise corporate audit and legal and related fees, other than legal fees incurred for financings, which are capitalized.
- Other income primarily represents receipts from the sublease of our premises. This income will not be significant in future periods as we downsize our premises.

*RESULTS OF OPERATIONS – FOURTH QUARTER*

We incurred a loss of \$1,598 for the three months ended June 30, 2016 compared to a loss of \$1,153 in the comparative 2015 period. Our sales improved 14% compared to the comparative year, and decreased 14% compared to our third quarter, which included record sales at our

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Engineered Materials division. A summary of our results of operations to loss before other items ("operating income (loss)") follows:

	Three Months Ended June 30, 2016				Three Months Ended June 30, 2015			
	Copper Alloys \$	Eng. Mat. \$	Corp. \$	Consol- idated \$	Copper Alloys \$	Eng. Mat. \$	Corp. \$	Consol- idated \$
Sales	3,356	722	-	4,078	3,031	541	-	3,572
Cost of sales								
Materials	1,583	101	-	1,684	1,754	(71)	-	1,683
Labour	631	155	-	786	574	427	-	1,001
Subcontract	269	141	-	410	-	-	-	-
Overhead	546	330	-	876	406	441	-	847
Depreciation	127	85	-	212	94	43	-	137
Change in finished goods	44	250	-	294	89	39	-	128
	3,200	1,062	-	4,262	2,917	879	-	3,796
Gross profit (loss)	156	(340)	-	(184)	114	(338)	-	(224)
SG&A expenses	534	125	755	1,414	394	262	273	929
Operating income (loss)	(378)	(465)	(755)	(1,598)	(280)	(600)	(273)	(1,153)
Gross margin	5%	(47%)	-	(5%)	4%	(62%)	-	(6%)

- Sales volume decreased from the third quarter of this fiscal year resulting in decreased gross profits by \$861.
- Corporate expenses related to the May 2016 private placement, including share-based compensation, increased over the third quarter of this fiscal year by \$459. We appointed Major General Heinz as president and chief executive officer. However, this expense was mostly offset by shares-for-debt settlement agreements with our former chief executive officer and other officers, directors, and key management personnel.

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*LIQUIDITY AND CAPITAL RESOURCES*

At June 30, 2016, we had working capital of \$4,297 including cash and equivalents of \$3,473, as compared to working capital of \$2,904 at June 30, 2015. Factors affecting our liquidity include:

- As discussed elsewhere in this MD&A, in May 2016, we closed a financing which generated gross proceeds of C\$7,460 (approximately \$5,500).
- We have raised \$375 through the issuance of promissory notes which are due in the third quarter of fiscal 2017. We believe that our operating cash flow will be sufficient to repay these notes as planned.
- Engineered Materials has a history of losses, but generated income in the third quarter so is improving. We expect that we will continue to support Engineered Materials' operations, at least in the short term, primarily to acquire beryllium inventory.
- Through to September 2016, the main limitation on our cash position was the cost of maintaining our corporate office and corporate development initiatives. We have closed the corporate office in Vancouver, BC and expect that this will be less of an issue in future periods with the full impact of the savings being realized in the second quarter of fiscal 2017.
- Our banks have imposed restrictions that currently prevent us from transferring funds from Copper Alloys to our other segments. During the year ended June 30, 2016, the Company breached certain covenants associated with the line of credit, which were not resolved at the date of this report. As a result, the Copper Alloys division's line of credit facility is due on demand. No call has been made as of the date of this document.
- In prior periods, directors and officers deferred compensation. This obligation was largely settled following closing of the offering, with insiders subscribing for units valued at C\$336 (\$256) with their after-tax compensation. Following the financing, a balance of C\$115 (\$88) remains which is payable at the discretion of the board of directors following the Company reaching profitability. With effect from July 1, 2016, directors have agreed to receive the majority of their compensation in common shares until the Company's financial position improves. Furthermore, our CEO has agreed to take part of his compensation in common shares, as described in further detail under *Related Party Transactions*.
- We have purchase commitments that may exceed our operational needs with the result that we may over-invest in inventory.
- Resource prices, particularly for copper, have a bearing on our manufacturing costs and selling prices, as copper is a large component of most of our products.
- We may be obliged to incur material expenditures on purchases of property, plant and equipment to maintain our productive capacity or service customers. In particular, based on sales initiatives under way, we are contemplating the purchase of equipment to expand our capacity to produce Beralcast® products. We expect that the proceeds from our May 2016 offering will be sufficient to meet our short-term needs.

We may be able to generate additional cash by expanding our bank facilities but we may need to raise additional funds to complete our business plan. There can be no assurance that we will be successful in obtaining such funds.

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*COMMITMENTS*

At June 30, 2016, we had commitments to lease premises over the next five years with an aggregate payment obligation of \$2,108. We were also committed to raw materials purchases over the next year aggregating \$1,326.

*RELATED PARTY TRANSACTIONS*

Except as described below, we do not have any contractual relationships with directors or officers other than employment contracts in the ordinary course of business. The employment contracts are not financially material to our business except that our CFO and executive vice-president of business and technical development are eligible to receive payments of up to C\$450, C\$96 and \$405 respectively in the event of a change of control of IBC, if certain conditions are met. In October 2016, we reached a settlement with our vice-president corporate relations and special projects under which he agreed to tender his resignation as an officer and director in exchange for a settlement of C\$119 to be paid in installments over the period ending February 28, 2017.

Our non-executive directors were paid \$36 per year, but agreed in October 2012 to reduce annual director compensation to \$18 temporarily as part of a broader initiative to reduce overhead expenses. In fiscal 2017, the non-executive directors' compensation was returned to \$36 per year but the directors agreed to receive the bulk of this amount in common shares.

In the quarter ended March 31, 2016, we borrowed \$225 from our CEO (formerly our COO) under two promissory notes. The loans are secured by the accounts receivable and inventory of our Engineered Materials division and bear interest at an annual rate of 10%. We borrowed a further \$150 from individuals related to our CEO.

Our CEO has agreed to be partially compensated in our common shares, subject to conditional acceptance by the TSX Venture Exchange. For the period January 2016 to July 2016, we will pay our CEO cash compensation to cover necessary payroll withholdings with the balance to be paid in our common shares. From July 2016 to January 2017 we will pay a combination of cash and shares. The share price used will be the closing price of IBC's common shares on the TSX-V on the last trading day of the month. Any extension of the arrangement beyond one year would be also subject to obtaining disinterested shareholder approval.

As noted above, we entered into an advisory agreement with KMSMITH LLC, Mark Smith's consulting company. We will pay the \$17 per month from April 1, 2016 until December 31, 2016. We have also granted KMSMITH LLC options to purchase up to 907,000 common shares in accordance with our stock option plan at an exercise price of C\$0.375 until May 22, 2021.

*FINANCIAL INSTRUMENTS AND OTHER INSTRUMENTS*

Our activities expose us to a variety of financial risks, including foreign exchange risk, interest rate risk, commodity price risk and credit risk. We do not have a practice of trading derivatives. We attempt to employ a natural hedge for foreign currency by holding funds in the currency in which we expect to spend the monies.

*Foreign Exchange Risk*

While most of our activities are in the United States, we incur corporate administration costs in Canada and raise equity proceeds in Canadian dollars. We manage exchange risk on equity capital by converting expected United States expenditures to United States dollars at the time the money is raised.

### *Interest Rate Risk*

Our interest rate risk mainly arises from the interest rate impact on cash and cash equivalents and interest expense on the BMO Harris Bank line of credit. Our term loan has a fixed interest rate and is not exposed to short-term interest rate risk.

### *Commodity Price Risk*

Our profitability and long-term viability depend, in large part, on the market prices of copper, aluminum and beryllium. The market prices for metals can be volatile and are affected by factors beyond our control, including: global or regional consumption patterns; the supply of, and demand for, these metals; speculative activities; the availability and costs of metal substitutes; expectations for inflation; and political and economic conditions, including interest rates and currency values. We cannot predict the effect of these factors on metal prices. We do not engage in hedging but, where possible, structures selling arrangements in a way that passes commodity price risk through to the customer.

### *Credit Risk*

We manage credit risk by trading with recognized creditworthy third parties and insuring international trade receivables. In addition, we monitor receivable balances with the result that the Company's exposure to bad debt is generally not significant.

We also manage our credit risk by investing surplus cash in low-risk, liquid securities, typically short-term deposits with large financial institutions.

## **Environmental and Occupational Safety Issues**

We melt and machine materials that have the potential, if not controlled and handled appropriately, to have a negative effect on health and the environment. In addition, our operations use materials such as cutting and hydraulic fluids, which have the capacity to cause environmental contamination if left uncontained.

To mitigate these potential risks we:

- employ a full-time health and safety manager to administer and monitor our safety programs;
- employ manufacturing practices to minimize and eliminate dispersal of fumes and dust;
- use trap basins and fluid reservoirs to capture and retrieve possible overages;
- use of active exhaust vents/hoods located in equipment areas to capture and filter air;
- regularly schedule assessments and maintenance of in-house ventilation systems;
- require our employees to use appropriate personal protective equipment (respirators, outer garments, gloves, etc.) selected to limit and protect them from any potential exposures;
- conduct beryllium lymphocyte proliferation tests (BeLPT) to determine employees' potential for sensitivity to beryllium prior to possible exposure;
- undertake ongoing air quality monitoring and perform periodic employee health exams as per occupational health guidelines; and
- limit access to areas that may have a potential exposure to beryllium dust particles.

In spite of these procedures, we remain subject to risk in this regard.



As with all industry, we are subject to periodic inspection by state and local safety, health and environmental authorities. If during an inspection a failing was noted in our system, the potential for the temporary or permanent closure of the facilities could exist. If during the periodic employee health screening, an employee displays elevated exposure to metals, it could require us to place the employee on sick leave, which would have the potential to impact both our direct and indirect costs and cause a disruption of production. There is also the potential that an inherent safety or environmental exposure, if uncontrolled, could initialize a suit by employees or neighbours.

To minimize the risks arising from pre-acquisition activities, we commissioned phase one environmental reviews prior to acquiring our copper alloys businesses. It may be possible that environmental problems remain at our facilities that these phase one assessments did not uncover.

## **Shareholders' Equity**

### *POTENTIAL SHARE ISSUANCE*

Our board and the TSX-V have approved the issuance of 3,333 shares to settle a contingent liability of \$30 with a supplier but we have not yet issued the shares.

### *SHARE CONSOLIDATION*

As described above, we consolidated our share capital on the basis of one post-consolidation common share for every ten pre-consolidation common shares. We previously had 98,085,813 common shares issued and outstanding and had 9,808,492 common shares issued and outstanding on completion of the consolidation, after adjusting for rounding. All share and per-share amounts have been restated to reflect the effect of the consolidation.

### *PRIVATE PLACEMENT*

In conjunction with the consolidation, we completed a non-brokered private placement of 19,893,670 post-consolidation units at C\$0.375 per unit for gross proceeds of C\$7,460 (\$5,500), which reflected receipts exceeding the original 25% oversubscription option.

Each unit consists of one post-consolidation common share of IBC and one transferable share purchase warrant. Each warrant is exercisable to acquire an additional post-consolidation common share of IBC at a price of C\$0.50 until May 24, 2021. The warrants have an acceleration provision, so that in the event IBC trades at C\$2.50 or greater for 21 consecutive trading days at any time until May 24, 2018, warrant holders will have 60 days to exercise their warrants, failing which the warrants will expire. The securities issued were subject to a hold period that expired September 25, 2016.

We conducted the private placement in reliance upon certain prospectus and registration exemptions. Funds raised under the private placement will be used for planned capital expenditures at our Copper Alloys and Engineered Materials divisions to increase capacity and production efficiencies, and to provide general business working capital. While we intend to spend the available funds as indicated above, there may be circumstances where, for sound business reasons, a reallocation of the available funds may be necessary. We paid finders' fees on the private placement \$377 (of which \$67 was paid through the issuance of 233,000 units with the same terms as the private placement) and issued warrants to purchase up to 907,000 common shares at C\$0.375 until May 24, 2021.

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*SHARE OPTIONS*

We have a rolling 10% share option plan that allows for the issuance of options equal to 10% of the number of issued shares. Shareholders approved our 2015 share option plan at our annual general meeting held in December 2015.

In August 2015, we granted incentive stock options to directors, officers, management and certain key employees and consultants, to purchase up to 120,000 common shares. The options have an exercise price of C\$1.20, are exercisable until August 25, 2020 and vest in stages over a three-year period.

In August 2015, an option holder forfeited 6,500 options and, in November 2015, another option holder forfeited 50,000 options. In March 2016, 2,666 options expired unexercised and in May 2016, 3,333 options expired unexercised.

In May 2016, as noted in *Related Party Transactions*, we issued options to purchase up to 907,000 common shares at a price of C\$0.375 until May 2021. In June 2016, we granted options to directors, officers and employees to purchase up to 741,500 common shares at a price of C\$0.77 until June 2021.

*WARRANTS*

In February 2016, 1,516,700 warrants exercisable at C\$1.80 expired unexercised and in March 2016, 852,729 warrants exercisable at C\$2.40 expired unexercised.

In May 2016, we issued warrants to purchase up to 20,126,670 common shares at C\$0.50 as part of a private placement, as described under *Private Placement* above.

*OUTSTANDING SHARE DATA*

As at the date of this MD&A, we have issued:

- A total of 30,138,843 common shares. In addition, we plan to issue 3,333 common shares to settle a contingent liability to a supplier.
- Warrants to purchase 22,015,070 common shares.
- Share options to purchase 2,487,500 common shares.

The maximum number of shares potentially issuable is therefore 54,644,746.