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(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Office)

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Approximate date of commencement of proposed sale to the public: **From time to time after the effective date of this Registration Statement.**

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Large accelerated filer	Accelerated filer
Non-accelerated filer	Smaller reporting company
(Do not check if a smaller reporting company)	Emerging growth company

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

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered	Proposed maximum offering price per unit	Proposed maximum aggregate offering price	Amount of registration fee
Common stock, par value \$.001 per share	(1)(2)	(1)(2)	(1)(2)	—
Preferred stock, par value \$.001 per share	(1)(2)	(1)(2)	(1)(2)	—
Warrants	(1)(2)	(1)(2)	(1)(2)	—
Debt Securities	(1)(2)	(1)(2)	(1)(2)	—
Units(3)	(1)(2)	(1)(2)	(1)(2)	—
Total			\$40,000,000	\$4,636(4)

This registration statement covers such indeterminate number of shares of common stock and preferred stock, such indeterminate number of warrants and units, and such indeterminate principal amount of debt securities of the registrant have an aggregate initial offering price not to exceed \$40,000,000. Any of the securities registered hereunder may be sold separately, or as units of other securities registered hereby. The securities registered hereunder are to be issued from time to time at prices to be determined. The securities registered hereunder also (1) include such indeterminate number of securities registered hereby as may be issued upon conversion or exchange of preferred stock or debt securities that provide for conversion or exchange, upon exercise of warrants or pursuant to the antidilution provisions of any such securities. In addition, pursuant to Rule 416 under the Securities Act of 1933, as amended, this registration statement shall be deemed to cover such additional number of securities as may be offered or issued in connection with any stock splits, stock dividends or similar transactions.

Omitted pursuant to General Instruction II.D of Form S-3 and Rule 457(o) promulgated under the Securities Act of 1933, as amended. The proposed amount to be registered, maximum offering price per unit and maximum (2) aggregate offering price per class of security will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder.

(3) Any securities registered hereunder may be sold separately or as units with other securities registered hereunder.

(4) Calculated pursuant to Rule 457(o) promulgated under the Securities Act of 1933, as amended.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, dated August 22, 2017

Prospectus

CPI AEROSTRUCTURES, INC.

**\$40,000,000
OF COMMON STOCK, PREFERRED STOCK, WARRANTS, DEBT
SECURITIES AND UNITS**

By this prospectus, we may offer and sell from time to time, in one or more offerings, our common stock, preferred stock, warrants, debt securities and units, which we sometimes refer to collectively as the “shelf securities,” at an aggregate initial offering price not to exceed \$40,000,000. The securities may be offered separately, together, or in series, and in amounts, at prices and on other terms to be determined at the time of each offering. We will provide the specific terms of the securities to be sold in a prospectus supplement.

We may sell the securities directly to investors, through agents designated from time to time, or to or through underwriters or dealers, among other methods. The prospectus supplement for each offering will describe the specific methods by which we will sell the securities. The prospectus supplement also will set forth the price to the public of such securities and the net proceeds we expect to receive from the sale of the securities.

This prospectus may not be used to consummate the sale of any securities unless accompanied by a prospectus supplement relating to the securities to be sold. You should read this prospectus and any prospectus supplements carefully before you invest.

Our common stock is listed for trading on the NYSE American exchange under the symbol “CVU.” On August 15, 2017, the last reported sale price of our common stock was \$8.65. As of the date of this prospectus, none of the other securities that we may offer by this prospectus are listed on any national securities exchange or automated quotation system.

Investing in our securities involves a high degree of risk. See the section entitled “*Risk Factors*” appearing on page 5 in this prospectus and elsewhere in any supplements for a discussion of information that should be considered in connection with an investment in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 20__

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You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission using a “shelf” registration process. Under this shelf process, we may, from time to time, sell or issue any combination of shelf securities in one or more offerings with a maximum aggregate offering price of up to \$40,000,000.

This prospectus provides you with a general description of the shelf securities we may offer. Each time securities are sold by us, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement, together with the additional information described below under the heading “*Where You Can Find More Information.*”

You should rely only on the information contained or incorporated by reference in this prospectus and any prospectus supplement relating to a particular offering. We have not authorized anyone to provide you with different information and, if provided, such information or representations must not be relied upon as having been authorized by us. Neither this prospectus nor any prospectus supplement nor any related issuer free writing prospectus shall constitute an offer to sell or a solicitation of an offer to buy offered securities in any jurisdiction in which it is unlawful for such person to make such an offering or solicitation. This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits.

This prospectus may not be used to consummate the sale of any securities unless accompanied by a prospectus supplement relating to the securities offered.

You should not assume that the information appearing in this prospectus is accurate as of any date other than the date on the front cover of this prospectus. You should not assume that the information contained in the documents incorporated by reference in this prospectus is accurate as of any date other than the respective dates of those documents. Our business, financial condition, results of operations, and prospects may have changed since that date.

References in this prospectus to “CPI Aer[®],” the “Company” and “we,” “us” and “our” refer to CPI Aerostructures, Inc., a New York corporation.

PROSPECTUS SUMMARY

This summary description about us and our business highlights selected information contained elsewhere in this prospectus or incorporated in this prospectus by reference. This summary does not contain all of the information you should consider before deciding to invest in our securities. You should carefully read this entire prospectus and any applicable prospectus supplement, including each of the documents incorporated herein or therein by reference, before making an investment decision. Investors should carefully consider the information set forth under the caption “Risk Factors” below and appearing elsewhere in this prospectus, including those described in documents incorporated by reference herein, and those described in any applicable prospectus supplement.

Our Company

Overview

We are engaged in the contract production of structural aircraft parts principally for the United States Air Force (“USAF”) and other branches of the United States (“U.S.”) armed forces, either as a prime contractor or as a subcontractor to other defense prime contractors. We also act as a subcontractor to prime aircraft manufacturers in the production of commercial aircraft parts. Our strategy for growth has been focused primarily as a subcontractor for defense prime contractors. Due to our success as a subcontractor to defense prime contractors we have pursued opportunities to increase our commercial subcontracting business.

We were incorporated under the laws of the State of New York in January 1980 under the name Composite Products International, Inc. We changed our name to Consortium of Precision Industries, Inc. in April 1989 and to CPI Aerostructures, Inc. in July 1992. In January 2005, we began doing business under the name CPI Aero®, a registered trademark of the Company. Our principal office is located at 91 Heartland Blvd., Edgewood, New York 11717 and our telephone number is (631) 586-5200.

We maintain a website at www.cpiaero.com. Information contained on our website or accessed through our website does not constitute a part of this prospectus.

Our Business

We are a U.S. supplier of aircraft parts for fixed wing aircraft and helicopters in both the commercial and defense markets. We are a manufacturer of structural aircraft parts and aerosystems. Additionally, we leverage our global supply chain skills to assist our customers in managing a diverse worldwide supplier market by providing “one stop shopping” for an assortment of aerospace parts. Within the global aerostructures supply chain, we are either a Tier 1 supplier to aircraft original equipment manufacturers (“OEMs”) or a Tier 2 subcontractor to major Tier 1 manufacturers. We also are a prime contractor to the U.S. Department of Defense, primarily the USAF. In addition to our assembly operations, we provide engineering, program management, supply chain management, and maintenance repair and overhaul (“MRO”) services.

Among the key programs that CPI Aero supplies are the E-2D Advanced Hawkeye surveillance aircraft, the A-10 Thunderbolt attack jet, the Gulfstream G650, the UH-60 BLACK HAWK® helicopter, the S-92® helicopter, the MH-60S mine countermeasure helicopter, the AH-1Z ZULU attack helicopter, the HondaJet-Advanced Light Jet, the MH-53 and CH-53 variant helicopters, the C-5A Galaxy cargo jet, the F-16 fighter aircraft, the Embraer Phenom 300 light business jet and the Cessna Citation X+.

We are a subcontractor for leading defense prime contractors such as Northrop Grumman Corporation (“NGC”), The Boeing Company (“Boeing”), Lockheed Martin Corporation (“Lockheed”), Sikorsky Aircraft Corporation (“Sikorsky”) and Bell Helicopter (“Bell”). 46%, 57% and 5% of our revenue in 2016, 2015 and 2014, respectively, was generated by subcontracts with defense prime contractors. Our 2016 and 2014 defense subcontractor revenue was significantly decreased because of the change in estimate on the A-10 program.

We also operate as a subcontractor to prime commercial contractors, including Sikorsky, Honda Aircraft Company, Inc. (“Honda”), Embraer S.A. (“Embraer”) and The Triumph Group (“Triumph”), in the production of commercial aircraft parts. 50%, 42% and 93% of our revenue in 2016, 2015 and 2014, respectively, was generated by commercial contract

sales.

We have over 36 years of experience as a contractor. Most members of our management team have held management positions at large aerospace contractors, including NGC and GKN Aerospace Inc. Our technical team possesses extensive technical expertise and program management and integration capabilities. Our competitive advantage lies in our ability to offer large contractor capabilities with the flexibility and responsiveness of a small company, while staying competitive in cost and delivering superior quality products.

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Significant Contracts

Some of our significant contracts are as follows:

Military Aircraft – Subcontracts with Prime Contractors

E-2D “Advanced Hawkeye” The NGC E-2 Hawkeye is an all-weather, carrier-based tactical Airborne Early Warning aircraft. The twin turboprop aircraft was designed and developed in the 1950s by the Grumman Aircraft Company for the U.S. Navy as a replacement for the E-1 Tracer. The U.S. Navy aircraft has been progressively updated with the latest variant, the E-2D, first flying in 2007. In 2008, we received an initial \$7.9 million order from NGC to provide structural kits for the E-2D. We initially valued the long-term agreement at approximately \$98 million over an eight-year period, with the potential to be in excess of \$195 million over the life of the aircraft program. The cumulative orders we have received on this program through June 2017 exceed \$144 million.

In addition, in 2015 we won an award to supply structural components and kits for the Outer Wing Panel (“OWP”) on the E-2D Advanced Hawkeye airborne early warning and control (“AEW&C”) aircraft that will be manufactured for Japan. We will be responsible for component source selection, supply chain management, delivery of kits, and will provide manufacturing engineering services to NGC during the integration of the components into the OWP. The contract from NGC is valued at between \$25 million and \$30 million.

A-10 “Thunderbolt” The A-10 Thunderbolt II is a single-seat, twin-engine, straight-wing jet aircraft developed by Fairchild-Republic for the USAF to provide close air support of ground forces by attacking tanks, armored vehicles, and other ground targets with a limited air interdiction capability. It is the first USAF aircraft designed exclusively for close air support. Since 2008, we have produced structural assemblies under a subcontract from the Integrated Defense Systems unit of Boeing in support of its prime contract with the USAF to produce enhanced wings for the A-10. Our current A-10 contract should be completed prior to December 31, 2017.

UH-60 “BLACK HAWK” The UH-60 BLACK HAWK helicopter is the leader in multi-mission-type aircraft. Among the mission configurations it serves are troop transport, medical evacuation, electronic warfare, attack, assault support and special operations. More than 3,000 BLACK HAWK helicopters are in use today, operating in 29 countries. We have long-term agreements from Sikorsky to manufacture gunner window assemblies, fuel panel assemblies, and perform MRO on stabilators for the BLACK HAWK helicopter through 2018.

DB-110 “Reconnaissance Pod” CPI Aero has a contract with United Technologies Aerospace Systems (“UTAS”) to manufacture pod structures for the DB-110 reconnaissance system, which is used primarily on exported F-16 aircraft. In June 2017, we announced a program with UTAS to support the development of a similar reconnaissance system known as TacSAR, which stands for Tactical Synthetic Aperture Radar.

F-35 “Lightning II” The F-35 Lightning II, also known as the Joint Strike Fighter, is a 5th Generation fighter manufactured by Lockheed. Three distinct variants of the F-35 will be in service with the U.S. Air Force, the U.S. Navy, the U.S. Marine Corps, and a variety of fighters for at least 10 other countries. We manufacture four different door lock assemblies as a Tier 1 supplier to Lockheed.

Commercial Aircraft – Subcontracts with Prime Contractors

Gulfstream G650 In March 2008, Spirit Aerosystems (“Spirit”) awarded us a contract to provide leading edges for the Gulfstream G650 business jet, a commercial program that Spirit was supporting. In December 2014, Spirit transferred its work-scope on this program to Triumph. We will continue to provide leading edges for the G650 as our purchase orders and long-term agreement have transferred to Triumph.

HondaJet In May 2011, Honda awarded us a contract to manufacture engine inlets and flaps and vane assemblies for the HondaJet advanced light business jet. We have received approximately \$28.6 million in orders on this program through June 2017. We estimate the potential value of this program to be approximately \$70 million.

Embraer Phenom 300 In May 2012, Embraer awarded us a contract to manufacture engine inlets for the Embraer Phenom 300 business jet. We have received approximately \$30.6 million in orders on this program through June 2017. We estimate the potential value of the program to be in excess of \$40 million.

S-92 Helicopter Sikorsky has delivered more than 275 S-92 helicopters since 2004. These helicopters perform search and rescue missions, head of state missions, as well as a variety of transportation missions for offshore oil and gas crews, utility and airline passengers. The S-92 helicopter is the preferred aircraft of its size class for off-shore oil transportation. In June 2017, CPI Aero announced a follow-on contract with Sikorsky, a Lockheed company, to provide 15 different deliverable items including door assemblies, cover assemblies, and various installation kits used by Sikorsky to complete the final assembly of the S-92 helicopter.

Military Aircraft – Prime Contracts with U.S. Government

F-16 “Fighting Falcon” In November 2014, The Defense Logistics Agency (“DLA”) awarded CPI Aero a multi-year contract to provide structural wing components and logistical support for global F-16 aircraft MRO operations. We estimate the value of the contract, including options, to be approximately \$53.5 million.

T-38C “Talon” The T-38C is a twin engine, two seat, supersonic jet trainer used by Air Education Training Command as an advanced trainer in Specialized Undergraduate Pilot Training. In 2015, CPI Aero was awarded a contract valued at up to approximately \$49 million to provide structural modification kits for the T-38C aircraft. CPI Aero provides structural components, program management, logistics, discrepancy reporting/resolution, and subcontract management as part of the Pacer Classic III aircraft structural modification program designed to enhance the T-38C operational capability while improving flight safety, reliability, and maintainability. We have received firm orders against this contract totaling approximately \$11 million for delivery through 2018.

The Securities We May Offer

We may offer up to \$40,000,000 of common stock, preferred stock, warrants, debt securities and/or units comprised of one or more of the foregoing classes of securities, in one or more offerings and in any combination. This prospectus

provides you with a general description of the securities we may offer. A prospectus supplement, which we will provide each time we offer securities, will describe the specific amounts, prices and terms of these securities.

Common Stock

The holders of common stock are entitled to one vote for each share held of record on all matters to be voted on by shareholders. Subject to any preferential rights of any outstanding preferred stock, holders of our common stock are entitled to receive ratably the dividends, if any, as may be declared from time to time by the board of directors out of legally available funds. If there is a liquidation, dissolution or winding up of our company, holders of our common stock would be entitled to share ratably in our net assets legally available for distribution to shareholders after the payment of all our debts and liabilities and any preferential rights of any outstanding preferred stock.

Preferred Stock

Our amended and restated certificate of incorporation authorizes the issuance of preferred stock with such designations, rights and preferences as may be determined from time to time by our board of directors, without shareholder approval. We have summarized some of the general terms and provisions of the preferred stock that we may issue in “*Description of Capital Stock.*” A prospectus supplement will describe the particular terms of any series of preferred stock offered from time to time, and may supplement or change the terms outlined below.

Warrants

We may issue warrants for the purchase of common stock, preferred stock debt, securities or any combination thereof. We have summarized some of the general terms and provisions of the warrants that we may issue in “*Description of Warrants.*” A prospectus supplement will describe the particular terms of any warrants offered from time to time, and may supplement or change the terms outlined below.

Debt Securities

We may offer any combination of senior debt securities or subordinated debt securities. The subordinated debt securities generally will be entitled to payment only after payment of our senior debt. Senior debt securities will be unsubordinated obligations and will rank equal with all our other unsubordinated debt. Subordinated debt securities will be paid only if all payments due under our senior indebtedness, including any outstanding senior debt securities, have been made. We may issue the senior debt securities and the subordinated debt securities under separate indentures between us, as issuer, and the trustee or trustees identified in a prospectus supplement. We have summarized some of the general terms and provisions of the debt securities that we may issue in “*Description of Debt Securities.*” A prospectus supplement will describe the particular terms of any debt securities offered from time to time, and may supplement or change the terms outlined below.

Units

We may issue units comprised of one or more of the other classes of securities issued by us as described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. We have summarized some of the general terms and provisions of the warrants that we may issue in “*Description of Units.*” A prospectus supplement will describe the particular terms of any units offered from time to

time, and may supplement or change the terms outlined below.

RISK FACTORS

Any investment in our securities involves a high degree of risk. Potential investors are urged to read and consider the risks and uncertainties relating to an investment in our company set forth under “*Risk Factors*” in the prospectus supplement relating to a particular offering, together with all of the other information contained or incorporated by reference in the prospectus supplement or contained or incorporated by reference in this prospectus. Potential investors also should read and consider the risks and uncertainties discussed under the item “*Risk Factors*” in our annual report on Form 10-K and our quarterly reports on Form 10-Q, all of which are incorporated herein by reference, and may be amended, supplemented or superseded from time to time by other reports we file with the Securities and Exchange Commission (“SEC”) in the future and any prospectus supplement related to a particular offering. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business and results of operations. If any of these risks actually occur, our business, financial condition or results of operations could be seriously harmed. In that event, the market price for our common stock could decline and you may lose all or part of your investment.

NOTE ON FORWARD-LOOKING STATEMENTS

Some of the statements contained in this prospectus and incorporated by reference herein are forward-looking statements that relate to possible future events, our future performance and our future operations. In some cases, you can identify these forward-looking statements by the use of words such as “may,” “will,” “should,” “anticipates,” “believes,” “expects,” “plans,” “future,” “intends,” “could,” “estimate,” “predict,” “potential,” “continue,” or the negative of these terms or similar expressions. These statements are only our predictions. We cannot guarantee future results, levels of activities, performance or achievements. Our actual results could differ materially from these forward-looking statements for many reasons, including as a result of those risks described from time to time in our SEC filings and those risks identified under sections entitled “*Risk Factors*” in any prospectus supplement. Important factors, among others, that may affect our actual results include:

changes in the expense and revenue estimates used in our percentage-of-completion method of accounting;

any suspension of or prohibition on our contracting with the U.S. Federal government;

changes in U.S. Federal funding that affect our projects;

changes in priorities in the U.S. Federal government due to military transformation and planning and/or the nature of war-related activity;

the ability of the U.S. Federal government to terminate contracts, in whole or in part, without prior notice, for convenience;

the time and expense of the U.S. Federal government’s competitive bidding process;

environmental regulation at the U.S. Federal, state and local levels;

regulation by the U.S. Federal Aviation Administration under the provisions of the U.S. Federal Aviation Act of 1958, as amended;

reliance on subcontractors to perform a portion of the services that we must provide to our customers;

increased costs on our fixed price contracts;

differences between contract value and revenue received with respect to our backlog;

our ability to attract and retain highly qualified senior officers and engineers;

our ability to obtain sufficient credit lines;

the cyclical nature of the commercial aerospace industry; and

the unpredictable nature of new programs and new technologies.

We are under no obligation to update or revise any of the forward-looking statements or risk factors to conform them to actual results or to changes in our expectations.

RATIO OF EARNINGS TO FIXED CHARGES

The table below sets forth our ratio of earnings to fixed charges on a historical basis for the periods indicated. The information set forth in the table should be read in conjunction with the financial information incorporated by reference into this prospectus.

	For the Fiscal Year Ended December 31,				
	2016	2015	2014	2013	2012
Total earnings (loss)	\$(4,317,931)	\$8,925,122	\$(36,697,847)	\$12,197,680	\$17,308,503
Fixed charges	\$1,356,645	\$918,129	\$984,428	\$1,043,786	\$783,373