



WORLD STANDARD
COMPRESSORS

ARIEL – A GREAT AMERICAN COMPANY



WELCOME MESSAGE

From our humble beginnings in 1966 to our more than one million-square feet of manufacturing and operations facilities in three cities, Ariel has always been committed to the customer, and this won't change. We are proud of our past, but we are looking to the future with great optimism. We believe in what we do. We believe in clean-burning natural gas. It will power the future.

*Karen Buchwald Wright,
CEO and President of Ariel Corporation*

PREFACE

In 2016 the largest manufacturer of reciprocating compressors in the world – Ariel celebrated its 50th anniversary. Two books were published in English to celebrate it “Letters to Alex. A History of Ariel Corporation” and “Ariel: A Great American Company”. The books are dedicated to the history of this prominent company and to the people who made it. “Letters to Alex” by James P. Buchwald, the founder and first president of Ariel, is based on the letters written by the author to his grandson Alex Wright. The first 27 years of Ariel history are described in this book. The other book is “Ariel: A Great American Company” by Sarah Morgans (“Ariel: A Great American Company”. Sarah Morgans. May 2016, p.180 Fenwick Publishing Group, Inc.). It gives insight into the history of Ariel from the year of its incorporation to 2016: people, highlights, growth and great number of photos. There are interviews, stories and opinions by Ariel employees of different levels and employees of our consumers and third parties.

By the year 2016, the year of its 50th anniversary, Ariel Corporation has been quite well-known in the Russian Federation and the CIS on the territory of which about 700 compressor packages packaged with Ariel compressors were operating or being mounted. This is a result inter alia of marketing efforts of Moscow representative office of Ariel Corporation, the result of active engagement and interaction between its team and potential consumers, participating in various conferences and making reports, publishing articles in magazines and other periodicals.

Moscow representative office of Ariel Corporation and Caterpillar held a conference timed to the anniversary of Ariel Corporation in 2016. The conference was devoted to the history of the corporation and different aspects of its activity for the past 50 years. The events mentioned above to some degree compensated for the lack of literature in Russian on modern reciprocating compressor packages for oil and gas industry. Two years have passed since the year of this anniversary, and the number of such compressor packages only increased on the territory of our representative office of Ariel, but the issue around literature on modern reciprocating compressor packages is still unresolved. Hence we consider publishing a brochure devoted to Ariel history, its highlights, and peculiarities in Russian really appropriate and essential.

The translator and editor of the digest has had the honor and pleasure of working in Ariel (Moscow representative office) for more than two decades and knows personally most of the employees whose words are quoted in “Ariel: A Great American Company”. I am not surprised at the epithet “great” used in the title of the book. Only a really Great company could have passed such a great way from the first compressor build by Jim Buchwald and Jim Doune in the basement of the Buchwald family home to the largest manufacturer of reciprocating compressors in the world occupying 75-80% of the worlds’ market, and able to compete then with such giants of compressor industry like Cooper-Bessemer, Clark, Worthington, Ingersoll-Rand. The digest of the book in Russian describes a five decades history of Ariel, explains why f its employees are proud of their company and why the community of Mount Vernon supported Ariel. We used our best endeavors to make this brochure interesting both for current and potential consumers of compressors, design institutes, RDCs, students being trained in corresponding fields in colleges and institutes of higher education, and professionals interested in compressor equipment and packaging.

I would like to convey my sincere thanks to Ariel Corporation management and head of the Russian office I. A. Legun for their acceptance and assistance in writing this digest. I thank the G.O.P. club for its help in preparing the manuscript.

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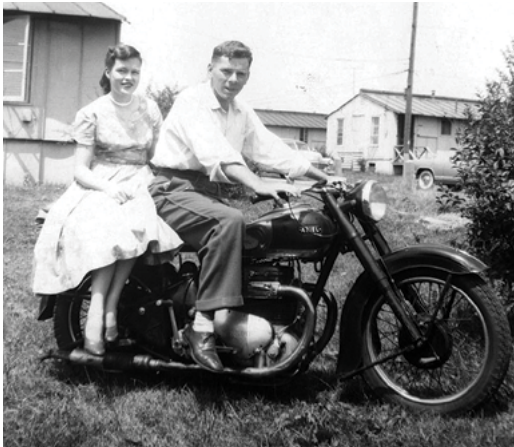
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INTRODUCTION

Karen Buchwald Wright is the President and CEO of Ariel Corporation, the daughter of its founder Jim Buchwald. She has been managing the company for 15 years of its unparalleled growth. Ariel has become the largest manufacturer of reciprocating compressors in the world. As a world-class manufacturer, Ariel sets the industry standard through industry-leading research and development, expert design and manufacturing, and unmatched customer support.

EXCELLENCE

Preparing for the challenge of the time



James P. Buchwald, the founder, CEO and President of Ariel Corporation, began his career in 1949 after he had graduated from college with teaching certificate. He completed one semester before it becomes evident that this career path is not for him. In 1950 he got married to Maureen Hunter and the rest of their lives they spent together. He realized then that his calling was in engineering, so he began earning to pay for education in this sphere. Jim had been working in a bank for more than a year, after that he took a position of a clerk at Tank Plant (General Motors) in Cleveland.

Maureen had to work too. When the financial position of the family improved, Jim entered Case Institute of Technology (1951-1954) and graduated with a B.S. in Mechanical Engineering. Then a young family moved to the small town of Mount Vernon, Ohio.

Jim was fond of free-piston machines and he began his engineering career with Cooper-Bessemer (C-B) in Mount Vernon. This facility started producing this type of engines at that time. In a week after graduation from the institute, Karen Buchwald was born (1954). In 1956 Phil, son of Jim and Maureen was born, but he died in 1969 at the age of 12 from Hong Kong flu. It was a great tragedy for the family.

Jim Buchwald made friends with Robert Ramsey, who had left C-B, and in 1958 invited Jim Buchwald to a take new position with White Superior in Springfield, Ohio. Jim agreed to it and he had worked for White Superior for 5 years. He went deep into manufacturing process which came in handy to him in future. During his work there an idea occurred to him to build a compressor driven by a big Cummins engine. But the idea was rejected and in 1965 Ramsey again invited Jim Buchwald to design a compressor driven by a diesel engine DeLaval Turbine, which brought the Buchwald family back to Mount Vernon, Ohio.

Founders – partners



From left to right: George Woodman, Jim Buchwald, and Jim Doane.

During his work with Cooper-Bessemer and White Superior Jim began discussing with his two friends the idea of his own compressor company. Jim Buchwald and Jim Doane were like-minded engineers and friends, both of them were fond of camping in the mountains. The third founder was George Woodman, a gifted and communicative businessman. He had worked with White Superior as well. This trio was the founders of a new company. But as the company developed and income grew, the interests of its founders began clashing. The men had been partners for more than 25 years. In 1992, Doane and Woodman sold their shares to a private investment company and it put an end to their partnership. But at the end of 1992, the Buchwald family managed to buy back the shares that had been sold by Doane and Woodman and from then onwards Ariel had become a family company of the Buchwalds.

There is no limit to perfection

Due to the fact that initially Jim Buchwald had been performing all the operations himself, he knew each and every detail to the tips of his fingers and he knew how to achieve maximum reliability and quality. Director of Process Compressor Marketing and Sales at Ariel Corporation, Greg Phillippi calls Jim Buchwald his mentor: “Jim is a perfectionist. But his interests are far beyond the range of interests of a mechanical engineer. He has great entrepreneurial spirit. It all started from him: honorable attitude towards employees, attention to customer service, availability of spare parts and reasonable prices for them”.

It was the third attempt to give a name to the company, when the three founders agreed to call it Ariel after Jim Buchwald's favorite motorcycle Ariel Square Four 1948, elegant in conception and smooth running.

In 1971, Woodman proposed that for marketing purposes a logo shall be created. Jim Buchwald drew a sketch of a connecting rod and wrote a word ARIEL in it, and an engineering draftsman translated this sketch into a construction which allowed moulding plates with this logo. In Karen's opinion, it had been a really efficient solution which still works well.

Naming compressors

It was quite clear from the early years of the company that it is necessary to give names to compressors and product lines. There were some minor investors in addition to the three founders (they were two Jims and two Georges), so the partners unanimously named their first compressors “JG”. This is how started the tradition of naming compressors with the initial letters of the names of the people who have made significant contribution to Ariel.

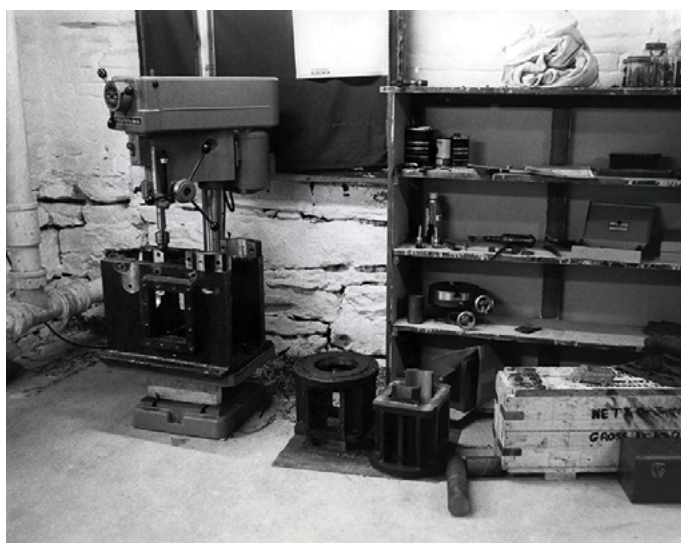
The original three partners all had wives whose names began with M: Maureen Buchwald, Marjorie Doane and Mary Gail Woodman. Consequently, the first addition to the Ariel product line became the JGM in 1972. To honor the “sportsman” who bought the first JG, serial number 1: Keith Paul, Ariel added the JGP to its product line. New product lines were named after Jonny Warren (CSI), Jim’s mentors Bob Ramsey and Bill Crooks, Halt Atherton and Canadian Enerflex (the founder of John Aldred). The JGK line was named for Buchwald’s children, Karen and Kurt. Once mother jokingly told Alex Wright that JGA line was named after him. Only some time later he came to know that JGA was to honor John Aldred.

In the late 1990s, the chief designer Kurt Buchwald (Jim’s son) designed the largest high-speed reciprocating compressor JGB. This product line was intended for compression of high volumes of gas but with low pressure ratio so that it could compete with centrifugal compressors. In 2000, Kurt began designing a new JGZ line, which was finally designed by the other chief designer Greg Lortie in 2003, because Kurt left the company in 2002. By 2006 most of the product lines had been redesigned and according to Tom Rastin, Ariel’s Executive Vice President, it was the time to move away from the names with JG+ prefixes. Besides the company was no more managed by Jim, Jim and George. Success in recent years had been achieved when the company was being managed by Karen Buchwald; that is why it was decided to name the two largest K lines (B/V and Z/U) with KB prefixes and if the K lines are modernized in future, they shall have KB prefixes as well.

In June 1968, Jim Buchwald completed a 10 hour run test of the first JG (driven from a diesel engine); and he first in the JG line of compressors was shipped to the customer on the last working day of 1968.

From basement to modern production facility

The first compressor was built in the basement of the Buchwalds home. Then the partners changed several machine shops. From their machine shop at Newark Road, to build which the three partners had to get into debts and mortgage their houses (1974-1979), they moved to Black jack Road in summer 1979. The production facility and the head office were prospectively designed thanks largely to Gene Ridenbaugh, who joined Ariel in 1974 and had already had two years of work experience after graduation from the institute. Nowadays Ariel has other production facilities in Mount Vernon and around it.



The first machine shop of Ariel.

Maureen had been working in Ariel as Vice President of Administration since 1972 and was controlling all the financial, accounting issues and human resources. She personally knew all the employees.

Engineers and machinists

Greg Phillippi began his career with Ariel in 1985 as a projecting engineer in order to relieve Jim Buchwald of some current projecting. Jim sent him to production facilities to study the production process of all the components and parts. "Machinists are our real partners in building compressors. They are the key element of Ariel's success".

One of the prominent long-service employees of Ariel was Rick Benneth. He began his career with Ariel in 1971 as a main designer of gas engine compressors JGS in the early 1980s. Ariel produced 256 such compressors. But because of their low profitability the production was phased out. Most of these compressors are still operating. In his early years Rick was a draftsman, procurement specialist, machinist, truck driver. Subsequently he initiated establishing purchasing management group and was one of the originators of the system of spare parts supply. He was known as a great storyteller and humorist, he was considered to be an uncle of all the 4 Karen's sons. In 2000, he broke his back in mountains and was paralyzed. He died in 2007. His wife assumed the position in Ariel's marketing department in 2014.

CNC-computer numeric control – digital-controlled machines and lines replaced simple machines of 1950-60s.

John Konkler began his career with Ariel in 1985. After he returned from navy service, he had worked in C-B for 34 years. Jim Buchwald invited 60 years old John to Ariel as expert in iron. Ben Lingel (director of quality at present) was following John writing down all his comments. John had been working as a chief engineer up to 2000 and retired at the age of 85 (a week before his death).

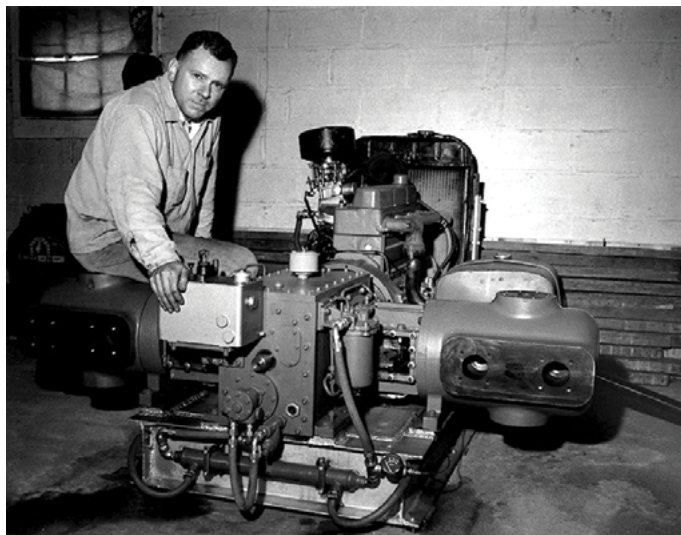
In 2012 a cleaning and painting booth for Ariel compressors was designed.

Kirk Townsend, the Director of Corporate Development at Ariel Corporation: "We had to do it all manually before. Such a switch to automated cleaning and painting once again proved our commitment to the best quality of our products."

But the most large-sized KBB compressors we still have to disassemble.

Development and product improvement

The initial idea to design 1800 RPM compressor driven from Caterpillar and Cummins gas engines could not have been put into practice because the gas engines running such speed lagged in development and were designed only 4 years after the first JG compressors running at 1400 RPM had been built. Production of JGM began in 1972 and only in 1976 the initial idea of 1800 RPM JGP was turned into reality. Compressors rated 150-400 hp had been produced till the late 1970s and in mid 1980s Jim Buchwald designed compressors capable of 400-900 hp and he believed that these compressors would be ours largest machines. Medium capacity market was controlled by C-B, IR, Worthington, Joy. Worthington occupied mainly the niche of medium capacity gas compressors and wanted to buy Ariel at that time, but Jim rejected the offer and then Worthington threatened to build a copy of Ariel compressor and drive out a small company from the market.



Jim Buchwald with Serial No.1 after a run test, 1968.

And Ariel began competing in response and designed compressors rated at 1000-1500 hp. Cylinders were designed by Greg Phillippi who had recently joined Ariel. In 1989, Ariel launched production of JGK line which became extremely popular with equipment leasing business. It made the competitors shudder, because these compressors had the advantage of unsurpassed reliability and they were really heavy-duty and they still keep this advantage. Such commercial success of K product line laid the groundwork for development of E and T lines. New gas engines gave an incentive to designing new compressors. But the full cycle of gas engines development is much longer than of compressors, so Ariel has always been a step ahead and there were compressors prepared for the coming drivers.

Jim always taught that compressors like racing cars must be aesthetically pleasing.

Compressor industry was developing slowly in 1960s, but Jim Buchwald revolutionized it and Ariel's groundbreaking technology has been propelling the corporation to the top of reciprocating compressors industry for more than 50 years.

Shale Revolution

The USA began utilizing natural gas in the 19th century. The houses were illuminated with the help of natural gas in the state of New York; the coalmine methane had been used in the Appalachian Region ever since 1821. Subsequently associated petroleum gas (APG) came into general use. The first gas pipeline from Indiana to Chicago was built in 1881. By 1920 gas production had increases, new gas pipelines were being built and compressor stations required more and more compressor units.

Soon the gas pipelines covered all territory of the country, about 1400 compressors stations were operating then. Ohio along with the Appalachian Basin became a natural center of American compressor industry.

Karen B. Wright: "There are black shales (hard formations), known as Marcellus Shales, found at depth more than 5,000 f (1,500 m) in Ohio, West Virginia, Pennsylvania and New York. In 2005, natural gas was extracted from the Marcellus Shales for the first time. The companies which had mastered a new technology - horizontal drilling along with hydraulic fracturing, having a 60 years long history, began successfully extracting oil and gas from these formations".

These technologies began developing in 1990 and they laid the basis of extraction of a new source of natural gas. The technologies had been improving and getting cheaper in the following decade. There was abundance of affordable, clean, local fuel, and potential feedstock for steel founding and steel rolling works, and for electric-power production.

“Such Shale revolution could have been possible only in the USA with its private ownership of land (which is not controlled by the government), in the context of expensive natural gas, the price for which warranted extra costs of drilling in shales. If sum up: 100\$ + price for oil and associated petroleum gas (APG) = Shale Revolution”.

Many customers of Ariel compressors quite efficiently develop their projects at Marcellus Shales. Rick Dearing, the President of Dearing Compressor and Pump Co: “The level of prosperity of our company has immensely increased with the development of the shale gas extraction from the Marcellus Formation. In February 2019, we purchased the first 15 compressor units – all from Ariel. Then there had been an onrush of orders from 2009 to 2014”.

Kirk Townsend, the Director of Corporate Development: “Although the scale of products exported by Ariel has significantly increased for the recent years, this increase cannot be compared to that meteoric wave of selling in the North America”.

The prices for oil went down sharply in 2015 which resulted in decline in production of shale oil. However the volumes of natural gas extraction still increased but at lower speeds. By the 50th anniversary of Ariel Corporation, the Shale Revolution has slowed down. But Karen believes that the shale oil and gas will have been extracted in the North America for several centuries.

Development continues

In mid-1990s, Jim and Maureen approaching their 60 years began pondering on the future of their company. Financial professionals told them that in case their children succeed to the company after their death, it would result in huge financial losses and taxes and could adversely affect the business. Jim and Maureen decided to discuss this situation with their children.

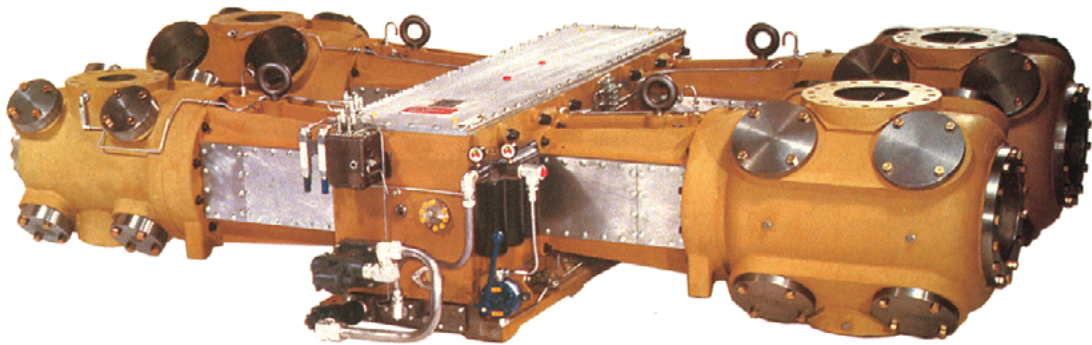
Karen, who had been working in Ariel since 1980, had already brought up her four children by that time and she believed that Ariel should remain a family company. Her brother Kurt had already graduated from university and took a position of a chief engineer in Ariel. Her husband John Wright was a President of the company.

In 1997 and 1998 respectively, Maureen and Jim in accordance with IRS (Internal Revenue Service) requirements sold their stock to the corporation and left all the leading positions in Ariel. John Wright still continued to be a President of the corporation; Karen assumed the position of vice president of administration (Maureen's former position), Kurt was responsible for designing. Karen and John Wright divorced around the turn of the millennium, and Kurt decided to leave for the West with his family. And again the question came up – who will manage the company?

After Maureen retired on pension, her financial and accounting job was doing Ken Reynolds as CFO (Chief Financial Officer). For managing operational activity a former consultant of the company was hired on advice of the family, but some weeks after it turned out to be a mistake to allow managing the company by such an outsider person. After Kurt had left the company, Karen invited back a former application engineer, chief engineer Tom Rastin who had preferred Ariel to another its competitor. Tom was offered to deal with engineering, i.e. the take the position of Karen's brother, and Tom agreed to that. Tom asserted that Karen was ready to manage the corporation. Ken Reynolds approved this idea and Karen took up the reins of Ariel. Her son Alex says: "I think that she herself realized that there was no alternative."



Serial No.1000 produced, 1978



The K line compressor – a favorable combination of reliability and performance capability. Designed by Jim Buchwald and Greg Phillippi, 1988

Karen started with forming a group of advisers to assist her in company management, like Ken Reynolds had already been advising her on financial issues. Finally seven leading professionals were chosen to be included in the executive group. Kent Dubbe, Vice President of Human Resources and Org. Development, says: "About 20 persons used to reporting directly to CEO, therefore this organizational structure required improvement in order Karen could focus on more important business issues." The group got together for a meeting on Mondays at 10 o'clock, so it was called M10. Ariel management team (M10): **Karen, Tom Rastin, Ken Reynolds, Steve Thompson, Kent Dubbe, Gene Ridenbaugh, Chris MacDonald, Court Wissinger.**



Karen built credibility of the staff members of all levels at once; the employees were quite receptive to the fact that the company would remain a family business. Unfortunately the tragic events of 2001 - the September 11 terrorist attacks, which followed the year-long transitional period for the company, dented the global economy and adversely affected the business activity of Ariel Corporation.

Karen looks back: "Global recession began and our business declined almost twice, it turned to be a time of bitter trial." Karen set the goal to preserve the human resources of the corporation by means of reduction of paperwork and early retirement. These measures helped the company to overcome the most severe 2002 and 2013. This period strengthened the staff and management of the corporation.

Over the next decade, the company under Karen's leadership had more than quintupled in size and increased its staff and incomes. Ken Reynolds points out that Karen managed to preserve the basic principles in her work, notwithstanding the fact that its staff numbered 2,000 at that time instead of 300.

Jim and Maureen were following the development of the company. They noted with satisfaction that Karen had assumed a new role for the President; she performed the duties of a sales manager and concentrated on customer relations with the management of packagers and distributors. Jim says: "Karen realizes how important our customers are and they would like to the boss to visit them even in the most remote regions". Keith Paul, the customer who once bought the serial No.1 compressor and now manages Reserve Equipment Services, Inc., and continues buying Ariel compressors points out: "I am amazed at the achievements of Ariel corporation and Karen's work. She carries on the founders' traditions and she has demonstrated that she is able to manage such a huge company".

The main competitors of Ariel were large public companies which were dedicated to turning profit to its shareholders, whilst a private family company was able to plan its long-term development during economic decline periods and make resolutions required by such long-term development without need to ensure the quarterly profit.

Akron and Newark

During the period of explosive growth in 2004-2005 all the qualified human resources of Mount Vernon and Knox County were exhausted. A decision was made to buy a production facility with the qualified machinists in the town of Akron, about 90 miles to the north-east of Mount Vernon, population numbers about 200 thousand people (total population of Knox County including Mount Vernon is about 60 thousand people). In 2014 Ariel bought a facility under-construction in Newark, about 25 miles to the south of Mount Vernon. This facility was bought with the qualified personnel as well. Subsequently construction was finished in accordance with high-tech equipment required for building Ariel compressors. All the workplaces for the professionals residing in Mount Vernon were preserved. The latter facility was bought in a view to the future development of the company.

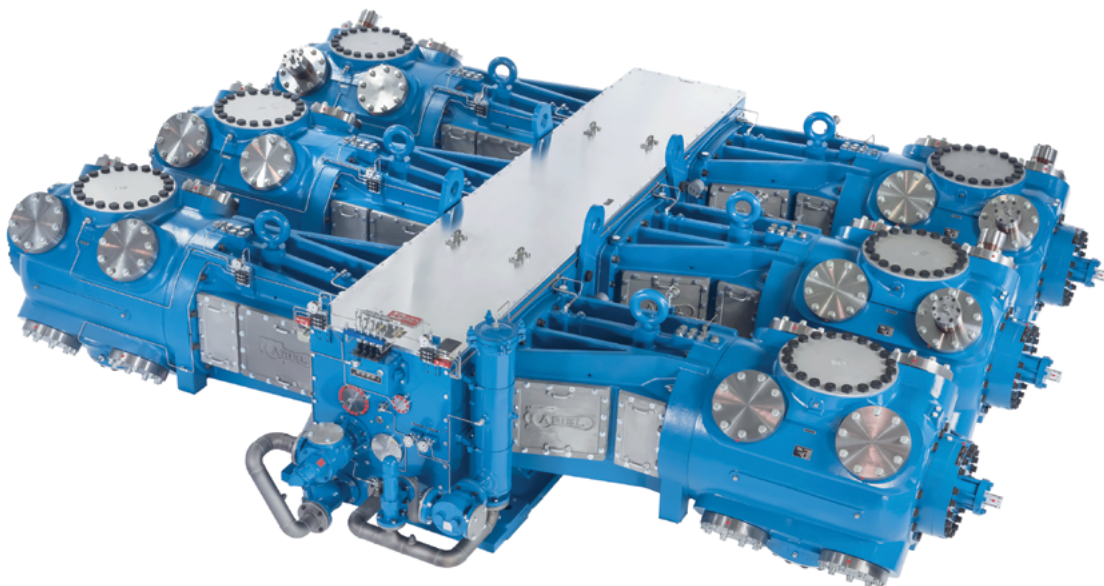
Cyclicity

Industrial recessions took place in 1983, 1986, 1991, 1999, 2002, 2009 and 2016. 1983 and 1986 were really hard, the Buchwalds had to discharge from employment their neighbors, there was no stock. Jim and Maureen took it badly. In 1986, when oil contracts dipped below 10 dollars per barrel, they had to dismiss around 75% of the personnel. They had to dismiss even Steve Thompson. The current position was discussed during safety meetings. When a there was new order, Jim declared: "We're working!" Gradually they learned to overcome these difficult periods without losses and even derive benefit from them. "In 1990s, our business showed sustainable growth and we managed to stock-pile, to build up our war chest. Ironically we were supposed to carry out the business activities carefully and thoughtfully in the year of our anniversary (2016) in order to easily proceed with further growth".

SENSE OF PRIDE

Cultivating sense of pride

Ariel employees know that their company produces the best reciprocating compressors in the world. They also realize that this is due to their continuous commitment to quality, timely delivery and customer service.



The KBB/KBV - Ariel's largest compressor frames, 2006

“In everything we do we must do our best”, says **Court Wissinger**. The best salaries, compensations and benefits. Creative initiative is encouraged in order people were more efficient and could apply utmost efforts in their work.

All the solutions made by Karen and M10 are aimed at cultivating the sense of pride in their employees. “Give them the materials and tools and train them and everybody will be happy with it and will do his best. After 15 years we finally learned working with profit. Jim and Maureen developed a profit distribution program. The staff felt like joint owners of the company. They were paid deductions from profits quarterly.” (Ken Reynolds, CFO) Ariel also directly contributes money to the pension schemes, medical care and insurance of each of its employees. It focuses on every work place ensuring proper lighted, clean and well ventilated work places. Improvement and managerial activities are encouraged. A hearty welcome and an individual development program awaits each new-comer.

Professional training

People make all the difference and Ariel prepares its workforce beginning from colleges. For example, Court Wissinger joined Ariel in 1980 after he had graduated from the local college. There is also a special training program supported by Ariel. The students are awarded scholarships even if the production process slows down. Karen: “Technical education is sure to be useful to everybody, it contributes to people’s intelligence.”

Ariel – for the long haul

Ariel has the greatest respect for its veterans. Each production facility has its own photo gallery of its veteran employees.

Bogdan Smereka recollects: “I remember like several years ago (maybe in 2014-2015) I got confused standing in front of such photo gallery with the group of the young Chinese. They asked me if there was my photo in the gallery. I have never thought about it before. We were trying to find my photo but failed to do it. As it turned out on the following day, my photo was in the second or the third row of the gallery, because I had worked in Ariel for more than 15 years. So, I found it there”.

All Ariel's veterans even after their retirement are invited to different events, both remarkable and entertaining. Every five years of work are celebrated by presenting special badges to employees.

Old-fashioned safety meetings

In 1970, the state of Ohio adopted an order prescribing regular safety trainings in all the production facilities. There were only 6 employees in Ariel at that time and such a prescription could have seemed to be redundant. But Jim said: “Well, let’s hold a safety meeting!” and sent a young man to the nearest public house to buy a pack of beer and German sausages. From the day of Ariel’s foundation these meeting were intended for discussing all the issues concerned with the employees’ lives and oil and gas industry...

Dave Vannatta, who joined Ariel in 1977, recollects that during these meetings they were discussing not only production issues, but also operation of the compressors shipped to their customers, development plans, company growth, etc.

Jim used to mount the rostrum about every three months and tell about all the aspects of the company. The safety issues were touched upon once in a while during these meetings but they were still called “safety meetings”.

On holidays and days before holidays there were potluck luncheons – spontaneous pauses for a snack followed by beer and card games...Once a droll situation occurred to Gene Ridenbaugh in 1974. He was sent by his senior mentor to buy some beer but he was only twenty then so he was allowed to buy only low-alcohol beer 3,2%, but the men drank 6% beer. His mentors ridiculed the light beer and had to buy the real beer themselves. Following the increase of production load and multiple shift operation in the 1990s such beer sessions were ceased.

Nowadays it is really difficult to arrange one general meeting for such a large company. Karen holds two meetings a year. Each meeting includes 3 or 4 sessions for different shifts and facilities in order to personally inform each employee of the company's business, thank for his or her efforts and answer any questions. The way Karen's parents used to do it in the past.

Tom Rastin

Having worked as a service engineer in Technical Compression Services in Louisiana for three years, in 1993, Tom Rastin joins Ariel and assumes the position of application manager. He was servicing Ariel compressors in Louisiana. He packed everything he had and loaded into his car in New Orleans. Then he drove to the north. He was going to start working on Monday after the Thanksgiving Day. But on that Monday he was absent from work. Ariel HR manager reached by phone Tom's brother, whose phone number was provided as an auxiliary one. It appeared to be that a drunk truck driver drove into Tom's car between Chattanooga and Knoxville. Tom had a humerus fracture, lung laceration, his face was smashed. Although Ariel had not yet signed a contract with Tom, its HR manager came to the hospital and insisted that the treatment should be covered by Ariel insurance. “I was really moved by such generosity, I'll never forget it”, says Tom, Ariel's Executive Vice President.

Made in the USA

Steve Thompson, Vice President of Procurement and Quality Control says: “We select our suppliers with regard to three factors. First, we seek quality, secondly, time of delivery and thirdly, price. Please, note that the price comes only third. Fourthly, we prefer the supplier as close to Mount Vernon as possible. All the materials and components shall be made in the USA and from local raw materials. Sometimes it happens that supply from overseas is cheaper by 30%, but the resolution to use only local materials and components was made by Jim and we still follow this principle. We always pay to our supplier within 30 days and they really appreciate it”.

Ben Lingel, who has worked his way from a trainee to the Director of Quality, points out that he had always admired Jim's comprehensive approach to business: "As well as being a talented designer Jim is also a great manager. He paid close attention to timely payment for all works and supplies for Ariel. Jim is a many-sided personality".

Initially the suppliers were supposed to believe in Ariel's future, and those who did, have become successful prosperous companies. For example, **Cook Compression and Hoerbiger**, are our partners who have been cooperating with us from the very start.

Entertainment events for Ariel employees and their families

Ariel holds special events five-six times a year to pull together its employees and their families. These are vintage cars parades, picnics, golf, and trips to the amusement park Cedar Point located on a Lake Erie.

Bowling during the sales meetings makes a lot of fun, it's amazing!

Karen directly supports business. She participates in various American and international shows and conventions every year. Ariel compressors are constantly advertised via different Ariel's publications.

MOUNT VERNON COMMUNITY

Giving back to Mount Vernon

Throughout all her management career in Ariel Corporation Karen does her best to give back to Mount Vernon, her hometown and a birthplace of the family company.



The Rastin Observation Tower
at Ariel-Foundation Park.



"Ariel Arena", the athletic center.

In 1966, the year of Ariel foundation, the magazine “Look” listed Mount Vernon in 12 most beautiful, prosperous and interesting industrial USA cities with such production facilities as Cooper-Bessemer and Jeld-Wen.

Jim and Maureen bought a house in Mount Vernon and joined its community. Their children attended local schools. In 1980, their elder daughter Karen Buchwald graduated from college and having worked for several years in Minnesota returned to Mount Vernon. She felt that she was connected to MV community.

But Mount Vernon suffered from decline of 1980 (like most of the towns of the Middle West) caused by industrial decline, cheap workforce at the overseas, etc. Mount Vernon downtown had become deserted within the period of two decades from 1960s to 1980s.

In 2004, Karen began cooperating with MV authorities and its mayor, the President of Mount Vernon Nazarene University with the intent of reviving the MV community, particularly its downtown. “The downtown of Mount Vernon requires such a transformation so it attracted people.”

Sidewalks

One of the first Ariel’s projects aimed at improving the life of Mount Vernon community was the project supported by Ariel Foundation (founded by Karen) and the state grant. This project provided for building sidewalks and planting thousands of trees in Mount Vernon. The sidewalks made the routes to schools, parks and recreation objects in the eastern and south-eastern parts of the city more convenient.

Ariel-Foundation Park

Ariel-Foundation Park is the most ambitious and largest project of the MV city and Knox County. It is the landscaped area in the south of MV which includes on the former site of a glass-making factory Pittsburgh Plate Glass and former Goodwin Sand and Gravel site. There are a lot of lakes, woods, pedestrian and cycle lanes, rebuilt locomotive depot, picnic pavilions, event center and architectural ruins of the former glass-making factory.

The project was launched in 2005 and was initially financed by the Community Foundation of Mount Vernon & Knox County. Ted Schnormeier, the Vice President of Jeld-Wen, offered to develop and execute an alternative development plan for Foundation Park. The former site of a glass-making factory is now fashioned with chunks of glass, called “cullet”, and crushed glass.

Tom Rastin, the Vice President of Ariel Foundation and Ariel’s Executive Vice President, supported the project of the observation tower and spiral staircase 42 m high (136 feet). The spiral staircase coils around the iconic PPG smokestack. The staircase does not touch the smokestack, “it is a free-standing and self-supporting marvel of engineering” (Karen). It is named for Tom Rastin, who dedicated this construction to his parents.

After five years of active construction works, Ariel-Foundation Park was opened on July, 4th 2005 with ceremonial parade and fireworks.

Bringing legacy to life

A private family foundation was founded by Karen Buchwald Wright in 2009. The Foundation concentrates its efforts on improving the quality of life in Mount Vernon, support of parks and recreation zones, the arts, education, and non-profit organizations which help the homeless and people suffering from diseases.

Karen is the Chairman of the Foundation, Tom Rastin is the Deputy Chairman, and Ken Reynold's wife (Ariel's CFO) is the Vice President.

One of the main projects of the Foundation was treatment program for children who have experiences early trauma in line with the approach of Dr. Bruce Perry. This treatment helped children to recover their trust in people and their self-respect. By that time (2012) Karen had come through an oncological disease and painful chemotherapy. The disease was cured and Karen again could boast her new blond curly hair.

Not only members of the family of Ariel owners participate in the Foundation but also all the important persons of MV community. Among them are the President of Mount Vernon Nazarene University (MVNU), the mayor of MV, the current and former leading businessmen. Mount Vernon downtown was totally transformed due to the Foundation. The Buchwald Center is home to MVNU Art Department and Schnormeier Gallery. The Buchwald Center and the Hunter Hall with MVNU School of Nursing are built on the territory of the former department stores. To commemorate Karen's support of MVNU, the sport center of the University was named after her family company "Ariel Arena". Karen funded the construction of Grand Hotel of Mount Vernon which was then transferred into ownership of MVNU.

David McCoy, Director of Technical Service, points out that Ariel employees are proud of Karen's philanthropic activities. "When MV people see you in a T-shirt with Ariel logo, they come up to you and express their gratitude to Ariel company and Karen personally for the contribution to the community of Mount Vernon."

Moscow representative office of Ariel Corporation conveys its sincere thanks to Karen and Ariel Foundation for the help to its employees, including in particular help to granddaughter of N.Ch.

CONSISTENCY OF DEVELOPMENT

Who is responsible for the compressors?

A month after David McCoy had joined Ariel, he was sent to the customer's facility in California to repair one of the compressors. When he found out that the crankshaft was damaged and it had to be replaced, Dave got frustrated. "I was aware that crankshafts are rather expensive and I did not know how Chris McDonald would take such news. So, I took courage and phoned him and said that I needed the crankshaft. The only question I was asked was: where and when I need it. And the next day around 3 p.m. the crankshaft was in California". Dave was really stunned. "The company had known me for less than a month, but when I said that I needed the crankshaft, they sent it to me without any hesitations..." Subsequently Dave came to know that there was such a rule from the very foundation of the company. Jim used to say about warranty: "If the equipment failure is by our fault, we shall pay, if by the customer's, then he shall pay. In case it is difficult to decide by whose fault it happened, we shall not argue but solve the issue and move forward".



Tom Rastin, the Executive Vice President, stresses out that Karen carries on the tradition of servicing each of our compressors throughout its operating life. “She believes that even after we have sold a compressor we’re still responsible for it. If it bears the ARIEL logo, we will take care of this unit irrespective of whether this unit is small or large. Can you imagine what a challenge this is! But this is one of the fundamental principles of our business”.

From left to right: Chris McDonald, Ken Crockett, Robert Drews, David Bardeen, Tom Rastin.

When customers purchase our compressors they get unswerving technical support. Even in case a customer asks for help with the failures resulted from his fault or the use of the components by other manufacturers, our technical experts will do their best to resolve the technical issues. Karen says: “According to our principles we are aimed at enabling further operation of the compressors first of all and only after that we resolve the payment issues. We decide whether this failure is covered by our warranty and use our best efforts to eliminate such failures in future”.

Spare parts are always available at stock and if necessary are supplied to our customers at affordable prices. All the necessary spare parts are available also for the compressors manufactured several decades ago. Our customers do not suffer from operating compressors manufactured in the preceding millennium. If any compressor assembly is modernized or compressors are abandoned, we still provide spare parts for them.

Dixie Brown, a designer responsible for historical information on our compressors: “Sometimes we have to decide whether we can buy the assembly or a component we need from our subcontractor, manufacture it ourselves or replace the assembly (component) with one currently used for modern compressors and performing the same function”.

In exceptional circumstances we can take the necessary assembly or component from the new unit being assembled to enable further operation of the compressor as soon as possible, which of course is sure to delay its shipment. Jim Buchwald: “Such are very rare cases. But sometimes compressor downtimes cause financial losses for our customers, so we make every effort to avoid it. Nowadays when our company is so large such situations occur rarely if ever. We’ve gained a reputation, and our customers fully trust us”.

Ariel Performance Program

Our customers utilize our compressors in tens various applications and hundreds of operating conditions. The key factor of best performance is proper compressor sizing – selecting compressor frame and cylinders. Ariel provides the industry leading compressor sizing software – Ariel Performance Program. Tom Rastin: “Communicating with our customers we always seek realistic and cost-effective solutions. Ariel engineers perform the roles of both teachers and consultants who help our customers in selecting proper equipment for their unique and challenging projects”.

Ariel Performance Program was developed in 1992. This simple DOS program based on the compressor power equations allowed best compressor sizing - the throw of the piston, maximum RPM, number of throws in accordance with application of the customer. The software is constantly being improved and updated. In 2001, 7.0 version was released which is still released with multiple updates and additions. **Keith Burley**, manager of production department and distributor's support: "I believe that this software is one of the greatest innovations I've take part. It is not just a program; it is a business-system. Users can order a compressor using this program. It facilitates providing users with knowledge and information, which has also greatly contributed to the company's growth".

Ariel Training Center

One of the key elements of partnership between Ariel and its distributors and products end users is comprehensive training in theory and practice of gas compression by Ariel compressors. Ariel offers online training and training in 6 training centers all over the world. In 1998, Ariel built a training facility which incorporated lecture-room accommodating 50 students and training labs. The Center offered training in a range of applications, including NGV filling stations, petrochemical and oil refining industry, etc. Ariel training is available to our industry partners at no cost. Mechanics, engineers and managers shall only pay travelling, food and accommodation expenses. Jim Buhwald thinks that training is useful not only for those who are trained in our training centers but also for Ariel's employees. "We get acquainted with people who operate our compressors, we learn from them the way they operate Ariel compressors and what requires improvement. We also learn something new from them".



Sergey Lukyanov gives Basic Ariel Course. Moscow, 2012.

Ariel has shown significant growth over the last decade and a decision was made to build a state-of-the-art Training Center with an area of 6500 sq. meters. It is located at Blackjack Road in Mount Vernon adjacent to engineering and assembly shops. The center had been under construction by the time the book was published (May 2016). It was due for completion in summer 2017.

And it was opened in mid-2017.

Perfect production



Over the period of five decades Ariel has worked its way up from a small workshop in the basement of the Buchwald family home to the world's largest designer and manufacturer of reciprocating compressors. The first Ariel's challenging breakthrough in the world's best industry practice was implementing of Single-Minute Exchange of Dies (SMED) in the late 1980s. This system of quick equipment changeovers allowed reducing time for changeovers and production areas. Implementing this system resulted in splitting the production process between product areas. The engineering shop was split into several areas which were equipped with the tools required for processing of a certain part (parts) instead of the same-type tools. There were areas of connecting rods, cylinders, etc. For each of the areas was assigned a leader with his team.

Karen: "Each production area functions like a small company. We used to performing quality control of our compressors only before their shipment, and now each part or assembly is checked as it is released from a certain production by the machinist who had produced it. Each member of our team is responsible for the result of his work and our employees take pride in it. It refers to the groups of areas as well. This aims to improvement of quality and cultivation of personal responsibility".

Continuous improvement is cultivated in our workshops. Kent Dubbe, the Vice President of Human Resources & Organization Development: "All our machinists and operators improve their knowledge and hence improve the efficiency of Ariel's production; and it's not only about our permanent workforce but also about temporary employees (hired during peak periods).

John Wright joined Ariel in 1981. He took the position in the finance department, and in the late 1980s he was upgraded to the Vice President, and in 1994 he became the President of the Corporation. In the early 1983, he got married to Karen Buchwald. John Wright proposed the program of production improvement which included implementing the MRP system (Material Requirements Planning) and ISO quality management standards. The MRP system was implemented in Ariel in mid-1980s. Rick Bennett assisted John in development and application of this system. Wright and Bennett implemented also KBM Data 3 – a computer system which facilitated integrating the supply and production chains (in the early 1980-s this work and filling the tables related to it was manually done by young specialists if the Finance department of the company – John Wright and Karen Buchwald). The MRP system could not communicate with the accounting department, compressors sizing department, engineering and sales departments. In the next two decades Ariel's young engineers mentored by Court Wissinger developed thousands of programs which integrated all the production and business activities of the Corporation.

John Wright had administered development of these programs until he left Ariel in 2001. ISO quality management standards were implemented also under the direction of John Wright in the late 1980s.

About three decades after John Wright had implemented the MRP system, his elder son Alex Wright headed the team which was developing and implementing Enterprise Resource Planning software (ERP), the software that allowed integrating all the enterprise software. Alex Wright: “This software is like central nervous system of the company. The latest version of SAP allows integrating international operations and various Ariel facilities. Such renovations are in line with the best Ariel traditions aimed at continuous pursuit of excellence which lays the groundwork for further growth”.

In 2013, Ariel opened a new **Global Distribution Center** where compressors are packed, stored, some of the units are assembled, and from where Ariel genuine spare parts are sent to the customers all over the world. This distribution facility allows processing 720 stock keeping units (parts) a week.

Bastions of quality

As noted above, commitment to high quality is cultivated throughout all the levels of Ariel’s business. Dave Renemans, Director of Manufacturing: “Compressors are really expensive and it’s very important to make sure that each of them is in good operating condition, everything must operate perfectly. Hence we check our products twice or thrice”.



REX gas pipeline in the USA. Compressor package with the KBU/6 driven by gas engine 6 MW.

In accordance with Ariel's tradition, high quality is ensured through personal involvement at all the production stages. Each Ariel's machinist stamps the parts he has manufactured with his personal stamp as if demonstrating that this particular part belongs to him.

Upon assembly procedure each compressor is thoroughly checked by one of 70 authorized assemblers, i.e. mechanical inspectors. Karen: "After assembly and tests have been complete, the mechanical inspector checks every part before shipment - tightening torque, valves, lube oil system, to make sure that everything is okay." If the compressor complies with the requirements, the inspector applies a quality control plate with his name and surname to the frame of the compressor. As Jim Buchwald used to say, assemblers are the last "bastions of Ariel quality".

Building a career with Ariel

Ariel provides for perfect environment for its employees' professional development. Most of them began careers as trainees broadening then their horizons, learning on their own, they were promoted as specialists or even as managers.

Gene Ridenbaugh spent his childhood at the cattle-farm. Two years after he had graduated from school in 1974, he took a position of a machinist in Ariel. Then he began servicing machines as well, mastered their electric circuits and then electrical engineering at large. Nowadays he assumes the position of the Vice President of Manufacturing. He is Karen's right-hand man on the issues relating to manufacturing processes.

Ariel's Vice Presidents **Court Wissinger** and **Steve Thompson** have also developed professionally with Ariel. They both joined Ariel in 1980. Wissinger had just graduated from college and Thomson had come from social service (he had never before dealt with manufacturing). "Ariel was unique at that time, because the only requirement to its employees was the eagerness to learning", recalls Steve Thompson. He began his career as drilling machine operator, and now he is Vice President of Procurement and Quality Control. Wissinger assumed the position of the operator's trainee and changes several shops, i.e. he was designing tools. As Karen points out: "Court achieved such professional growth due to his commitment to continuous improvement and self-learning. Court Wissinger and Gene Ridenbaugh are brilliant specialists who have worked in different teams and who then headed these teams".

One more example of successful career with Ariel is Dixie Brown's professional journey. Having joined Ariel in 1981 as a trainee in the workshop, she became the second Ariel's women to assume a position of the machinist in machine workshop. She recalls: "I had to feed my family." John Konkler, the chief engineer at that time, offered her to master designing and drafting. The 50th Ariel's anniversary she celebrated as the chief specialist of Ariel's technical archive. Chris McDonald, Vice President of Technical Support and Service: "Dixie is a great specialist having vast knowledge. Such employees have made Ariel the industry leading company".

Serial No.1

In 1966, one of Ariel's founders George Woodman offered Keith Paul who was managing the leasing company to buy Ariel compressor. George mentioned several people who supported Ariel at that time and Keith knew them as professionals familiar with compressor business. Then Woodman said that the compressor would not require water for cooling, and it really appealed to Keith Paul, because most of the compressors were water-cooled with heavy cylinders and required a water source. So, Keith Paul dared to order this compressor. "I boasted of having been such a wise man to buy Ariel's first compressor. While George Woodman used to say that it took him too much time to find a man silly enough to buy the first Ariel compressor".



Tomskgazprom, Kazanskaya - 1. Three compressor packages with Ariel compressors JGZ/6-3 driven by gas engines 3.6 MW.

This first Ariel's compressor built by Buchwald and Doune was shipped from Mount Vernon to Houston to the packager Southern Engine and Pump Co. Keith Paul was amazed with how easy it was to package and maintain Serial No.1 compressor and he decided to buy four more compressors from Ariel. In 1997, Ariel located and purchased Paul's original Ariel, which was still in service 27 years after it had been shipped from "The Chicken Pluckin' Factory". It has been cleaned, painted and restored and now graces Ariel's lobby.

Distributors and packagers

One of the peculiarities of Ariel's business is that its professional staff is supplemented by unprecedented global distributor network. Packagers buy Ariel compressor and integrate them into gas compression systems for the end users' applications. These packages generally include: the compressor, driver, gas piping and auxiliary systems (engine, compressed air and lube oil air-coolers, control system (automation system), shut-off and pressure-relief valves, inlet and interstage separators) all mounted on one or several common structural steel base plates

in accordance with the requirement stated in the Ariel Packager Standards. Packagers and distributors represent Ariel at the global oil and gas market and make all possible efforts to provide their consumers with service and support brought in line with Ariel's reputation.

The distributor network had been developed for many years and it numbered 25 packagers and distributors by company's 50th anniversary. Kirk Townsend, the Director of Corporate Development, joined Ariel Corporation in 2010 after he had worked with packagers (Universal Compression and Exterran) for 30 years. He knew already that Ariel compressors were a trademark of high quality and reliability. Kirk recollects: "Before I joined Ariel I thought it was running like a well-oiled machine which worked by itself. I could not even imagine what attention and hard work it required to sustain that perfect product delivered to the customers. So much concern, so much contribution". One of the key factors predetermining Ariel's long-term success is its close cooperation with its packagers which are treated like teammates. This cooperation has begun from the very foundation of the corporation. Warehouse and Distribution Manager Joe McDonald said: "Having worked in Ariel for several years, I realized that Jim and Maureen took care not only of Ariel employees but also of our packagers. Since Jim made a decision to enter into the market through packagers instead of direct sales which were typical of 1960s, he had been holding firm to this strategy. He sees them as Ariel's continuation; they have always been treated as a part of our family. We still adhere to this tradition and the same about our packagers".

Building relationships with the packagers is of vital importance for Ariel and high standards must be adhered when selecting them. Greg Phillippi, Director of Process Compressor Marketing and Sales, says: "They should look like we do. They should carry out business like we do and they should treat their customers like we do".



Azerbaijan International Operating Company (AIOC), Baku, Azerbaijan. Compressor packages with Ariel JGD/4 driven by gas engine 890 kW.

Chris McDonald, Vice President of Technical Support and Service, describes the way Ariel selects its distributors: “Distributors selection is an exact and scrupulous procedure. Candidates are selected with regard to their technical and financial aspects. The Sales Department must decide whether the company needs one more distributor, whether this new candidate will bring us to a new niche, or like Kirk Townsend says, whether this distributor will add to our pie or the pie will be the same but we’ll have to roll out to thinner pieces. If from financial point of view the candidate is worth being our distributor (“if he will add to our pie”), the technical and service experts begin analyzing other aspects. We analyze candidate’s engineers, sales skills, the way orders are taken and processed, workshops, service technicians’ availability. If the distributor is approved, he is provided with the recommendations on the type of compressors, market and area; we also develop a plan of its growth”.

During periods of decline in the market, during the most challenging times, Ariel does everything it can to reduce its distributors’ and packagers’ hardships. Since Ariel holds the reciprocating compressors market share of 80-95%, consumers believe in reliability of compressors promised by the brand. This tendency is especially important for compressors intended for lease, including mobile compressors for exhausting sections of gas pipelines before repair. In Ariel’s early years, compressors were configured for particular applications by the specialists of the packagers and distributors. Nowadays it is much easier owing to Ariel software and compressor sizing department. As it has already been mentioned, Ariel provides its packagers with the industry leading software for compressor sizing - Ariel Performance Program.

Compressor market is currently occupied by large public companies not only small private enterprises. Ariel’s basic competitors are such giants as GE and Siemens. In light of this, Karen’s personal relationships with our packagers and distributors are of utmost importance.

International Market entry

During its early years Ariel sold compressors mainly to its distributors in Texas and in the cities of the Middle West. Then the company began developing markets throughout the USA and Canada. And some time later we entered the international market. Kirk Townsend, the Director of Corporate Development: “Ariel began winning the international market more than two decades ago through its cooperation with distributors from North America...”

Nowadays Ariel’s network of packagers and distributors allows providing technical support and service of the same quality as in North America. To deliver such quality in every corner of our planet, our service technicians cover the distances of hundreds of thousands miles around the world. In addition to Ariel offices in Moscow and Beijing there are Ariel specialists all around the world. Kirk Townsend manages the whole network and he says: “Ariel’s international business has the most international prospects in Russia, China, in the South-East Asia and the Middle East and in the LTA region. Our prospects in Europe and the Near East are rather limited. Karen realizes that in addition to the traditional market of the North America and shale industry, Ariel has a promising future in the international market and promotes this business area in every possible way”.

All Ariel's international specialists including its representatives in Moscow and Beijing are trained the same way as employees in the USA. These specialists including our service technicians participate in annual sales meetings along with our specialists from the North America, M10 and the directors. Such events enhance relations within our team and contribute to professional development of Ariel employees.

Taking into account the fact that the governments and entities of some of the countries prefer cooperating with local companies (local currency, language, customs), Kirk Townsend and Ariel international representatives decided to establish a network of its local distributors. Kirk: "We've delegated packaging and selling Ariel compressor to a number of companies in Russia, China, India, Europe and in the LTA region". All these companies were checked and adopted Ariel norms and regulations in similar way to Ariel distributors in the North America. Keith Burley, manufacturing and distributors' support manager: "International packagers and distributors are trained in service, engineering and programming on a full scale. In addition to it, online training is available which allows preparing mechanics, engineers and customers for training in Mount Vernon."



NOVATEK - TARKOSSALENNEFTEGAZ. Compressor package with Ariel JGC/6-2 driven by gas engines 3.6 MW.

Sometimes consumers paint Ariel compressor to match the compressor package. But it is remarkable that very often our compressors are packaged blue as they have been initially painted representing their quality and reliability.

Adventures of service technicians

Ariel service technicians have to perform their duties not only in urban and other humane environments but also in various remote areas, deserts, jungle. "The hardest part about such work is that we have to overcome not just difficulties related to compressors repair but to the lack of understanding with the customers", says **David McCoy**, Director of Technical Service.

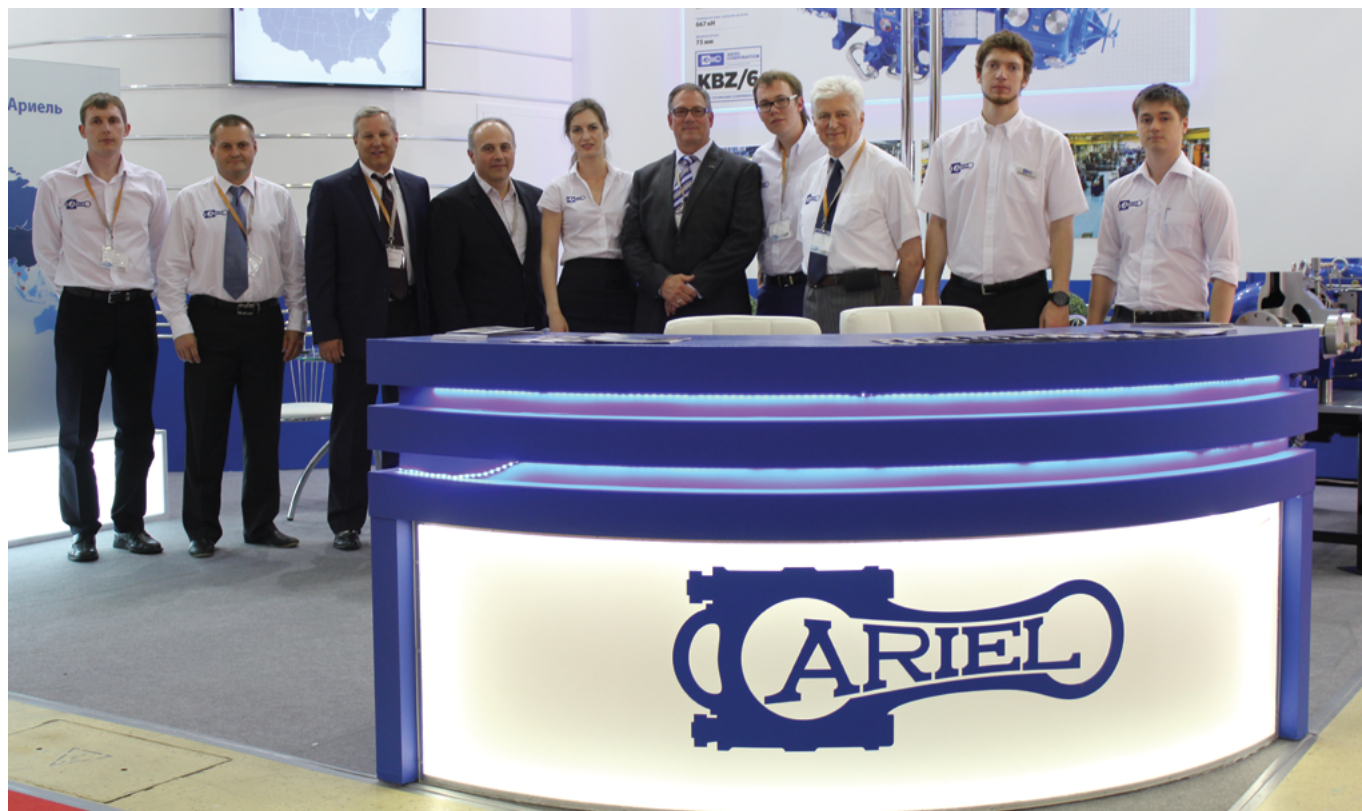
There are around 40 American and international service technicians in Ariel whose aim is to restore operation in the most speedy way. "They represent our company's image and it depends much on them if the customer will return to Ariel for a new compressor".

Ben Lingel joined Ariel in 1993 and Chris McDonald who managed the Technical Service at that time asked him if he was ready to travel around the world and solve the issues with Ariel compressors. Ben Lingel: "And I happily agreed. But it turned out to be no as easy as it had seemed to me. I remember a mission when I had to spend more than a month on board ship in the North Sea. I was allowed to use radiotelephone to make calls in the most urgent situations and I phoned my girlfriend only late at night. Radiotelephones were really expensive at that time."

Sometimes our technicians face security issues during their missions. In 2001, on Thanksgiving Day **David McCoy** was notified of an Ariel compressor failure at Conoco gas plant in Syria (200 km from Iraq). Dave was familiar with the army and he realized that security is endangered in Syria. "I requested the packager to develop an emergency plan. We considered this plan with Chris McDonald and approved it with our insurance company. It guaranteed medical help if necessary by air. Taking into account the security issues and that there was Thanksgiving day, I decided to fly a mission myself". He arrived in Damascus and was going to drive to the oil refinery next morning. But there came an order to take him immediately to Palmyra". Dave recollects the driver who was discussing the attitude of Americans to the Near East after 9/11 attacks. He met the representative of Conoco gas plant. "When I arrived there had already been working American specialists. The accident turned out to be really severe and I reported to Ariel that all major units must be replaced: the frame, the crankshaft, connecting rods, bearings. And within 6 days I was delivered all the components and units by air, almost a new compressor. Things turned out all right finally". Dave recollects also more severe experiences of our service technicians. For example, Jason Turner fell ill during one of his missions in the Amazon Jungle in Peru. And a local witch doctor cured him.

Ariel Response Center (ARC)

In 2000, Ariel opened its Response Center (ARC). A team of five technical service engineers is ready to assist Ariel's customers: **Tom Hubbell (the leader), Jeremy Fogle, Pat Maloney, Jason Williams and Sean Lucas**. It has already been mentioned that in addition to unparalleled quality compressors Ariel provides its customers with technical assistance to ensure many decades of trouble-free operation. Ariel Response Center (ARC) provides telephone technical support on configuring compressors and other engineering issues from purchasing spare parts to service. The Center was initiated by David McCoy after he had come across such a center at Mobil Oil. Dave McCoy: "People are not concerned with how much you know, the main thing here is to let them see that you are eager to help them in solving their compression issues". The team of ARC includes technical service engineers in various areas of expertise able to communicate with end users. "This is not a commercial center, but we promote sales of our products through providing support to our consumers which allows customers to contact directly with manufacturing."



Management of Ariel Corporation. From left to right: 3 – Kirk Townsend, 4 – David Bilenko, 6 – Chris McDonald and Moscow representative office at Moscow International Oil and Gas Exhibition MIOGE -2014.

Generation Next

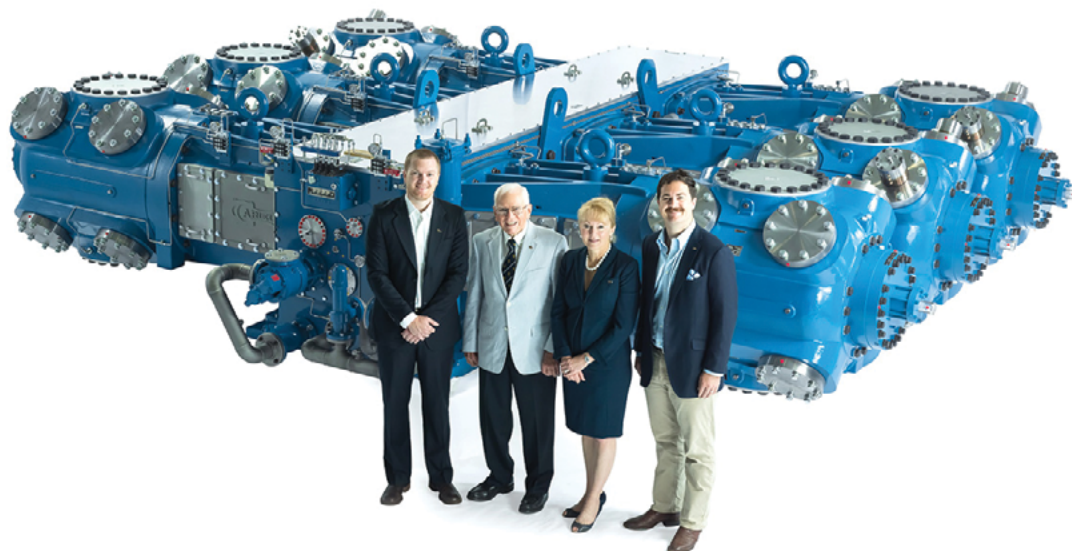
In mid-1990s, when Ariel's future was under consideration, Karen insisted that the corporation should remain a family business. She cannot even imagine that her four sons could have been brought up without that peculiar to Ariel sense of pride and commitment which has been cultivated in her from early childhood. Alex, Hunter, Andy and Sam nurtured on their mother's milk with that spirit of Ariel.

Karen's elder sons Alex and Hunter are currently with the family company. Alex assumes the position of CEO and Hunter is finishing his on-the-job-training in different departments of the corporation. They both assumed full-time job positions in Ariel after they had worked with various independent companies.

Alex returned to Ariel in 2012 after he had worked with Caterpillar in Huston, Singapore and Australia, and after that with Compressor Systems Australia. In 2013, Alex Wright headed the team developing and implementing ERP business management software which integrates all corporate operations at present.

See also *Perfect Production* section.

Having graduated from university, Hunter Wright worked at Caterpillar engine manufacturing facility in Lafayette, Indiana. Then he joined Black Horse, the joint venture between Caterpillar Inc. and Ariel Corporation, where he assumed the position of a manager of quality. In mid-2005, he returned to Ariel.



Three generations of the Buchwald family and the 50,000th Ariel Compressor. July, 2015.

Andy Wright currently assumes the position of a designer in another company and he has not yet made decision concerning his future, but his mother still hopes that he will also join the family corporation.

The younger son Sam graduated from university in 2016 with diploma in Mechanical Engineering and he is intended to follow his granddad Jims steps. "I would like to take part in our family business and work with my brothers". Sam is undergoing training in various Ariel's departments and like his elder brothers is going to work with some other company first.

The fourth generation of the family is represented by Alex Wright's daughters: Everleigh (born in 2011) and Lark (born in 2013).

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*The digest of the book and comments in Russian are prepared by B.M.Smereka, a former employee of Moscow representative office of Ariel Corporation.**

** Translation from Russian into English*



WORLD STANDARD
COMPRESSORS