

BATTLE BORN:

*The History of
Basic Magnesium, Inc.*

The LandWell Company

Presents

Battle Born: The History of Basic Magesium, Inc.

with

Senator Harry Reid

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By

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U.S. Senator Harry Reid: Some stories are told so often they become part of the tapestry of our lives. ..and then others are so little known that when they're told belief is momentarily suspended and we

stand in awe wondering how a story this big never made it to the forefront of our consciousness. The story you're about to hear falls in the latter category. It's a tale of people who were modern day pioneers, worked their hands and minds to develop materials that would change literally the course of history. From the front lines of World War II to the top secret development of the world's fastest spy planes to the far reaches of outer space. Our story begins in this undeveloped patch of desert just 15 miles from Hoover Dam, 10 miles from Las Vegas strip. The site of Basic Magnesium Inc. or BMI. It's hard to fathom how this single industrial plant had such a tremendous impact on our history. But as with many stories it's a story about people. The men and women who labored in the harsh desert climate to build the colossal BMI factory in less than a year, 11 months, and the men and women stayed and adopted southern Nevada as their home.

Hello, I'm Senator Harry Reid. I'm here to share with you the history of BMI, Basic Magnesium Incorporated, and the pivotal role it played in our nation's history and the role of Henderson, Henderson, Nevada. In the next half hour we'll meet a few of the pioneers of this community and discover how BMI and the City of Henderson were truly "Battle Born." In the years leading up to World War II the United States and Europe were still struggling with the worst economic crisis. It was a depression. It was the worst in history. At the same time Nazi Germany had made significant strides in development of new technology and materials for war, for combat. Germany was secretly rearming in direct violation of the Versailles Treaty which was signed after World War I. Light weight magnesium, often referred to as "the miracle metal," suddenly became the most important metal in the world. Aircraft and bombs created with this metal were not only superior, they meant the difference between defeat and victory. Nazi Germany's knowledge of magnesium production was a closely guarded military secret. It helped them build the most sophisticated air force in the world. It allowed the German Blitzkrieg to sweep through Europe like lightning. Japan was also using magnesium in its bombs, bullets and airplanes in China and the Pacific Islands with devastating results. These were the words of Congressman Charles Levy on January 5th, 1940: "The tremendous efficiency of German and Japanese dive bombers is due to the fact that their vital parts are composed largely of magnesium alloys. We must build planes with the lightest and strongest metals known and arm with the lightest and mightiest guns. This means more magnesium, hundreds of tons of it at the earliest possible moment." German incendiary magnesium firebombs, five times more destructive than traditional bombs, rained down on England's defense plants making it difficult for Great Britain to produce magnesium. Although the United States was still trying to stay out of World War II Congress did allow President Roosevelt to increase the United States' military budget and to provide war materials to Great Britain. President Roosevelt was looking for any means to help Churchill fight this menace to the world, to freedom.

Second Narrator: When Churchill took office he knew he needed to build up the British military. Churchill had run the Navy in World War I. He was a military minded man. But he knows that to take on this great German air power he needs magnesium for the planes and for the firebombs they are eventually going to have to use.

Senator Harry Reid: But unknown to the world the answer to this magnesium shortage would soon be found faraway in the deserts of Nevada.

Second Narrator: Howard Eales was a Cleveland industrialist and he needed magnesite and brucite for his plant. Luckily for Howard Eales and luckily for the country, history sometimes is just one big accident. Things come together for now apparent reason. Eales sent out geologists looking for magnesite and

brucite. Happily for Nevada they find it in the Gabbs Valley of Nye County, over 300 miles from Las Vegas.

Senator Harry Reid: In fact Eales acquired the rights to the world's biggest deposit of magnesite and brucite, 70 million tons of the very ores needed to produce magnesium just 330 miles north of Las Vegas. It was discovered by Nevada silver prospector Harry Springer in the 1920's. Eales wanted the magnesite to produce refractory furnished bricks at his plant Basic Refractories Inc. Anyone living in Henderson today is familiar with the word "basic" from Basic Street to Basic High School where I graduated. Many assume it means "fundamental," however "basic" has its origin in BMI history, referring to the method of steel production. Eales soon learned that the government needed these raw materials to produce magnesium. Eales also knew that he would need help to undertake a project of this magnitude.

A.D. Hopkins: To build a plant big enough, fast enough, to produce enough...the only way he could get that done was with federal help. He got Senator Pat McCarran and Senator Key Pittman interested in his project and he also got a former US senator from Nevada called Charles Henderson who headed a federal agency that built factories.

Senator Harry Reid: Southern Nevada was the ideal location for the magnesium production facility. Its proximity to Hoover Dam facilitated the delivery of massive amounts of water and power needed to produce magnesium and with Eales' find in Gabbs, Nevada, the necessary raw materials were also close at hand.

A.D. Hopkins: Logically it made sense because you had the railroad connection at Las Vegas you had the power from Hoover Dam, you had the ability to draw water in from the impoundment behind Hoover Dam, Lake Mead. It came together here pretty well.

Senator Harry Reid: So a deal was struck between England and the United States. The United States would build Basic Magnesium Inc., the world's largest magnesium plant on 2,800 acres of land in the Nevada desert between Boulder City and the little railroad town of Las Vegas. The British in turn would provide magnesium expertise and plans for the plant.

Dr. Michael Green: If FDR and Churchill don't get together and do what they did we may not be here today. Now magnesium is part of that. It's a key cog in the war machine. So magnesium plays its role, if you will, in saving the world.

Senator Harry Reid: The US government spent \$150,000,000 to build BMI. Today that would be nearly 2 billion dollars. But the critical need for magnesium overrode any financial concerns. Afterall, many believed the fate of the world was at stake. In May, 1941 a young British industrial chemist, Dr. Sidney John Fletcher, almost lost his life trying to get plans for producing magnesium to Nevada.

Elizabeth Tinsley: These plans were very secret and had to be brought from England to America and it was arranged that my father and his colleague would come by ship and the Germans maybe found out that their plans were on this ship and it was torpedoed and he was rescued and continued his trip to America but the plans were lost.

Senator Harry Reid: Undaunted by this delay the British microfilmed the original plans in England and sent them by air in a subterfuge that would rival the great spy novels of the day.

Elizabeth Tinsley: And there were two sets of agents, one with the second set of plans and one without. One set acting as a decoy. And the plans safely arrived here.

Senator Harry Reid: A handpicked group of Nevadans were sent to England to learn the magnesium process.

Mayor James B. Gibson: My grandfather Gibson was asked to accompany a group of scientists and engineers to England to learn the processing.

Senator Harry Reid: My father knew the Gibson's back then because they were also involved with some of the mining operations in Searchlight. Mayor Gibson's grandfather even hired my Dad to work at BMI on many occasions. Whenever mining was slow in Searchlight he would go to Henderson to go to work. This program was a dangerous mission with England under constant bombardment, but the scientists and engineers knew the importance of their mission. The very outcome of the war could be decided upon their success or their failure. Meanwhile great strides were being made in the Nevada desert.

Toni Carter: I watched them build BMI. I was...saw the time when they broke ground in September 15th of 1941, they broke ground for the plant and 11 months later they poured their first magnesium. Fantastic amount of work went into that before the magnesium was produced.

Senator Harry Reid: The United States was still in the throes of the Great Depression and jobs were scarce. But thousands of men flooded eagerly from every state, because of the Depression, to build BMI. Almost three times the number of men that it took to build Hoover Dam.

A.D. Hopkins: There were only 5,200 people at one time working on Hoover Dam. At BMI there were over 13,000! I can't think of a construction project that big anywhere! And of course this just completely overwhelmed Boulder City. It completely overwhelmed the facilities of Las Vegas. They couldn't build accommodations fast enough. There were people livin' in tent cities, livin' in automobiles, livin' in trailers. There were even some Navajo hogans that some of the Indian construction workers had built out along Boulder highway and people were livin' in those.

Mayor James B. Gibson: The early beginnings were really tough because of the sparsest of conveniences were available. An outdoor plumbing, no running water, you effectively had to eat at a cafeteria. No place to keep your food if you needed to ice it down or keep it cold.

Senator Harry Reid: During the first part of the War my Dad, our family, moved to Henderson from Searchlight. My Dad worked there as a machinist at BMI because the mines closed during the War. My three brothers and I all graduated from Basic High School in Henderson. My wife graduated from Basic in Henderson. Even with these challenging conditions, construction of the plant was completed, as I said before, in an amazing 11 months!

Toni Carter: It was very awesome, because, like I say, it went up so fast! Can you imagine that many buildings being built in 11 months' time. And all the things they were accomplishing in that amount of time!

Senator Harry Reid: BMI was a massive project. The country's biggest defense plant. It's two miles long, nearly a mile wide and with more structural steel than the Empire State Building. It also had 305 miles of pipe. Almost 400 hydrants and 18 miles of standard gauge railroad track. A sixteen mile government built pipeline brought 30,000,000 gallons of water from Lake Mead to the plant every day. This is the

water system that later helped enable the massive post-War growth in the southern half of the Silver State. To produce the vast amount of electrical power needed to manufacture magnesium at the plant, Nevada Senator Pat McCarran used another kind of power, political power. He convinced the federal government to lend BMI 18,000 tons of Nevada silver stored back east since the Civil War.

Toni Carter: The silver was loaned to BMI from the government to use for electrical (?) bus bars and most of it, a lot of it was underground, it was valued at \$23,000,000 and it was used in place of copper which freed up the copper for other War uses.

Senator Harry Reid: As Senator Pat McCarran acknowledged, "This plant, utilizing Nevada ores, and Nevada Silver will play its great part toward winning the War." Then a day that still lives in infamy changed our nation's perspective. December 7th, 1941, the Japanese attack on Pearl Harbor gave BMI workers a strong, strong patriotic purpose. Hitler and Mussolini declared war on the United States just a short four days later. Now BMI workers would not only be supplying magnesium for British spitfires and hurricanes but for American B-17s, B-24s, and B-29s, up to 2,000 lbs. of magnesium per plane.

John Fanning: During World War II the performance of the combat aircraft were highly dependent on the properties of magnesium. And there was no other safe place in the world at that time to manufacture the quantities of magnesium needed.

Senator Harry Reid: On March 30, 1942 the first magnesium ingots were shipped to a Los Angeles defense plant. And a year later, BMI was in full production.

Selma Bartlett: The Henderson residents, during the War, were a united team. And yes, there was a lot of patriotism. And at the plants, most of them worked at the plants, they knew what they meant to those men fighting: end the War.

Senator Harry Reid: With young American men joining the military, older men, minorities and women were soon pressed into service at American defense plants all over America, doing what was often hard and dangerous work. Hundreds of black men and women who migrated from the deep South to BMI have helped to forever diversify the racial profile of Southern Nevada. During the War, women who worked in place of men at plants and jobs across America were known as "Rosie the Riveters" but at BMI they had a special and more fitting distinction: "Magnesium Maggies".

Irene Rostine: Well women came to the BMI plant because the World War II was in full force and there was a great need for manpower. And the men had to go into the armed services and so women stepped into the plant to take their place. It was a difficult situation for a lot of them because they had families and children at home to take care of in addition to doing...they did double duty. They worked in the plant and some of them worked 12 hours a day and then still had families to take care of. So their contributions were really invaluable.

Toni Carter: I worked in a lab. We called ourselves "The Cookbook Chemists" because most of us were housewives and had never had chemical training. I had three brothers in the service at that time and I felt that I was doing all I could to help.

Senator Harry Reid: In 1943, BMI was given the National Security Award for its magnificent effort and was honored with a visit by the crew of the most famous airplane in the War, the Memphis Belle. The

crew expressed the gratitude of Allied Flyers from BMI workers contribution to their effort, to the War effort.

Mayor James B. Gibson: As I would point out to any new resident who had never seen the BMI complex, I would point out that while it may look like a relic from a distance, that that relic has made a significant and important contribution to the freedoms we enjoy and to the safety of our land. It has made a contribution in the defense of our country. It is an important part of the heritage of our City. And frankly we owe to the people who founded the companies there, our very existence.

Senator Harry Reid: As the factory developed, gave birth to a City, at first the settlement where Basic Magnesium workers lived was simply called Basic Townsite. Its 1000 houses were really “basic” but there was already a great sense of community and shared purpose among the residents of Henderson.

Winnie Prince: We didn’t think anything about locking a door if we went anywhere. And the houses were so much alike, that there was two different times somebody walked in our house and thought they were in theirs (laughter).

A.D. Hopkins: It was the kind of town where people had a sense of honor. They were proud of what they’d done to win World War II.

Senator Harry Reid: An industrial community began to sprout up around the factory. The Townsite not only had homes and schools but also a Library, Bank, movie theater and even its own hospital.

Selma Bartlett: And I must say that if it wasn’t for the hospital we would not have had medical care in the late 40’s and the early 50’s. So everything starts from a seed and that seed has grown into a big city of around 209,000 people!

Senator Harry Reid: Basic Magnesium was the seed and the true beginning of the City of Henderson. The plant and its workers also had a positive impact on the entire Las Vegas Valley. In December of 1942, a Life magazine journalist wrote: “The big boom which the town enjoyed during construction of the dam seems like hijinx at a Church Bingo Party compared to the preposterous prosperity of today! Nearby the World’s largest magnesium plant paid out, during construction, over \$900,000 every week.” Basic Magnesium workers, even more than Boulder Dam workers who proceeded them, flocked to Las Vegas in search of housing, groceries, clothing and recreation. With paychecks every week totaling about a million dollars, BMI gave Las Vegas a tremendous economic shot in the arm. Business owners had their first inkling of the railroad whistle stop town of Las Vegas might someday become a thriving city and major tourist destination. But now they really knew it was going to be something!

A.D. Hopkins: The Basic Magnesium Plant isn’t far from Boulder Highway. Well, you head down Boulder Highway and it turns into Freemont Street. And a lot of workers at Basic Magnesium made that trip! Las Vegas benefits economically in a lot of ways that frankly local leaders would not have imagined, because the people who are coming to work at Basic Magnesium when they don’t yet have a townsite, they head into Las Vegas.

Senator Harry Reid: In January, 1944, Basic Townsite was renamed Henderson, after Charles Belknap Henderson.

A.D. Hopkins: Charles Belknapp Henderson did a lot for the town that bears his name. He gets the loans to build the plant, he oversees the operations in connection with his work at the Reconstruction Finance Cooperation, it is a deserved tribute.

Senator Harry Reid: But before the year was over, the fate of the giant plant would be in question. The very success of the plant became its ultimate demise. After 807 continuous days of operation magnesium production was halted in November of 1944. In just over two years more magnesium was produced at BMI than the rest of the world produced in 1939 and '40, combined!

A.D. Hopkins: Basic Magnesium is crucial to the war effort. 166,000,000 lbs. of magnesium. More than had been produced in a couple years before the War, and enough to give Great Britain and the Allies, including of course the United States, the airplane material, the firebombs they need to help win the war.

Senator Harry Reid: So much magnesium was stockpiled in fact that production was halted even before the War ended. When the War was over, people left in droves. People thought it would become a ghost town. But there were men and women of vision who said, "No, we're going to save Henderson."

Irene Rostine: When the plant closed, a lot of people went back to where they came from but there was this small core of women that worked there, and their families, that remained here. They grew accustomed to the desert and they loved it! And those women became the core of what would be your future community of Henderson.

Senator Harry Reid: These men and women battled to keep the young town alive. They enlisted the aid of Sen. Pat McCarran and Charles Henderson who headed the federal committee disposing of War assets.

Dr. Eugene Mochring: The people of Henderson didn't want to leave and Pat McCarran was able to convince Harry Truman, Franklin Roosevelt's successor, not to cannibalize the machinery and remove the demountable (?) houses.

A.D. Hopkins: Pat McCarran got most of the credit for this "win-win" maneuver because he was the most powerful person involved, but truly I think if there was ever anything that everybody in Nevada worked for it was this!

Senator Harry Reid: The saving of BMI was a cooperative effort by Nevada's local, state, and national leaders who believed it would be a great way to diversify the State's economy.

Dr. Michael Green: Economic Diversification has been one of the key terms in the history of Nevada. We're always looking to diversify the economy. Well, Pat McCarran's vision was of an industrial mining Nevada. Gaming? Yes. But a more diverse economy. And that was the goal that State and local leaders had in acquiring the Basic plant.

Senator Harry Reid: In 1945 the struggling community hung on and the federal government leased the plant facilities to private companies instead of permanently closing the plant. The government finally decided to put the entire town up for sale, including the stores, post office, the school, the library, the theater, the churches, the electrical facility and homes. The original townsite homes were sold to BMI workers at 'rock bottom prices.'" For many, this was their first opportunity to own a home.

Maryellen Vallier Sadovich: They just posted, 'um, papers on the wall with the addresses of houses, two bedroom or three bedroom. And my husband just picked our house off the wall! He didn't even go and look at it! He had no...and when I walked into that little house...I was rather thrilled! I was really was thrilled.

Senator Harry Reid: The Henderson Chamber of Commerce was formed and the city began to take on a life of its own. In 1947 the BMI Hospital was transferred to the Dominican nuns. Seven nuns took over the property and renamed the facility Rose de Lima. Today the hospital is thriving as St. Rose Dominican Hospital. Meanwhile back in Washington, D.C. in the halls of Congress, Pat McCarran convinced his fellow senators that instead of dismantling the huge and expensive plant for sale of scrap the federal government should allow Nevada to buy it for 24 million dollars, a fraction of the original cost of the project. The terms included a \$1 down payment with the balance to be paid from leasing the facilities to private industries.

Dr. Michael Green: In 1948, the State of Nevada takes over the Basic Magnesium plant. It's going to run by a state agency, the Colorado River Commission. They start renting out parts of the plant but the state had a much smaller government then than it does today. The population was much smaller. It was only recently that the population of Nevada had passed 100,000. So you can't ask the Colorado River Commission and the State of Nevada to do a lot. They wanted private enterprise to come in and take it over. And the state would oversee things in terms of regulation, it would obviously make some tax money. So in 1952 they finally succeed in privatizing the plant. It's bought out by the chemical companies.

Senator Harry Reid: These companies established Basic Management Inc. to own and manage the common facilities such as water and power within the industrial complex. The little neighboring town of Pittman and the Basic Townsite were incorporated as the City of Henderson in 1953. A city was born. As Henderson and Las Vegas Valley continued to grow at an extraordinary pace vital resources were needed for residents and businesses alike. Most critical for this desert community was, of course, water.

Pat Mulroy: The State Engineer had declared that the aquifer underlying Las Vegas was over pumped and he was not issuing any more ground water permits. And so it became imperative in order for this tiny little community of Las Vegas to continue to grow and to prosper economically that it would bring in additional water resources. Basic Management saved the day essentially. So it was the existence of these BMI facilities and the willingness of the companies to assume a larger responsibility, a larger community responsibility, if you will, to serve as both the tiny little city of Henderson and the tiny little city of Las Vegas that allowed Southern Nevada to begin to become the community that it is today.

Selma Bartlett: Basic Magnesium, which I call BMI, is definitely entwined in the roots of Henderson, it was Henderson in those days. Our people worked at the plants, our bank banked those people, and it was very much dependent on the success of the industrial plants.

Senator Harry Reid: BMI's and Henderson's contributions did not end World War II victory. As America plunged into the Cold War and the Space Race new advances were needed to meet the demands. Titanium, another new light weight high tech metal was vitally important to America's security during the Cold War, BMI would once again be at the forefront of technology.

Don Cooper: The airplanes for World War II really relied on the magnesium and the airplanes for the jet age relied on titanium. You would not, absolutely would not have modern jet engines without the titanium metal.

Senator Harry Reid: In 1960 when the U-2 of Francis Gary Powers was shot down over the Soviet Union it was clear that the United States needed a reconnaissance aircraft that could not be detected by radar and could outfly enemy missiles. The answer was the SR-71. TIMET produced 90% of the titanium for a fleet of the new legendary spy planes known as the Black Birds. This top secret plane, made almost entirely of titanium could fly three times faster than the speed of sound and soar nearly 100,000 feet about the earth. President Johnson finally announced their existence in 1964. The mysterious black birds were often reported as UFO's.

John Fanning: The Black Bird was one of the first major users of titanium, one of the bigger success stories. Without titanium and without titanium alloys that were developed right here in this facility, the Black Bird never would have flown.

Senator Harry Reid: Henderson's plants, including BMI's TIMET and Kerr McGee also helped America win the race to the moon and beyond.

Don Cooper: Not only were we making the metal for airplanes and space vehicles but the companies down the line were making the oxidants for the rocket fuel and some of those people had worked here in this factory and had moved down there. So we were all one big family and we felt a lot of pride in the kind of work that was being done here.

John Fanning: It's all through the 1970's...TIMET worked very closely with NASA and the prime contractors on the Space Shuttle, United States first reusable launch vehicle. And many of the titanium alloys that are used on that were developed and manufactured here at TIMET.

Don Cooper: Kerr-McGee was the producer of the oxidizer for the solid fuel rocket boosters for the first manned space flight using solid fuel boosters. Today Kerr-McGee produces electrolytic manganese dioxide (?) which is sold to all the major US battery producers for dry cell batteries. It also produces boron trichloride (?) which is sold to manufacturers of semiconductors, sold for organic chemical synthesis and for the production of boron fiber. And they manufacture some elemental boron which is the fuel in the ignition device for pyrotechnic devices including airbags.

John Fanning: TIMET is one of the largest manufacturers of titanium in the world and we're the only fully integrated manufacturer in the United States, meaning: we start with the (?) sand and we manufacture the sponge and melt that into ingots. And that's all done in Henderson, Nevada.

Richard Wohlete: Titanium also impacts other areas. It's not all aerospace. Titanium impacts the medical field. Probably 90% of all implants that go into the body are made out of titanium. Virtually all of the new artificial hearts and the heart implants are all made out of a high purity titanium.

(Check last bit with video)

Selma Bartlett: I have three titanium pins of which I'm very proud of! I'm sure they came from TIMET. When Dr. Tate put my titanium pins in he said, "I know you know where they came from."

John Fanning: Over the past several decades the City of Henderson has flourished and grown up all around this once remote industrial site and today, BMI, now known as Black Mountain Industrial Center, continues to be home to the leading manufacturers of specialty metals and chemicals and with a growing number of new businesses makes a significant contribution to the economies of Henderson, Nevada and the world.

Gary Sulik: Corn has a variety of uses, not only in treating water, which we primarily do, but 85% of the pharmaceuticals, vitamins, antibiotics, and medicines that go into the use of treating heart disease, hypertension, pneumonia, ulcers, and the symptoms of the common cold. Our product goes into that type of application. We treat all the water for Henderson, Boulder City, Las Vegas, North Las Vegas, Clark County and a lot of the other cities in the western states.

Pat Mulroy: It doesn't matter how sophisticated we get in water treatment technology, you can go anywhere and water scientists everywhere will tell you the best and the safest disinfectant today, *still*, is chlorine.

Mayor James B. Gibson: Everytime anything happens in the world that makes us remember how important our freedoms are, those of us who've been around a long time and are more intimately acquainted with the history and the early beginnings of the City, feel a great sense of pride and patriotism. It was after all a Battle Born City! In the Battle Born State of Nevada! And the contribution to defense and the defense of our country is something that is ongoing.

Selma Bartlett: The flag is a symbol of our freedom and BMI contributes greatly to that symbol of freedom through their industry.

Mayor James B. Gibson: That's a contribution that our community can continue to be proud of. Not just the people who were here in the very beginning but all of us today share in the heritage of this community and its commitment to freedom and to the American Way.

Senator Harry Reid: The original Basic Magnesium Inc. built more than a half a century ago, not only helped to win World War II and ensure our nation's freedom, it also gave rise to the City of Henderson, Nevada, now America's fastest growing city. In fact, Henderson grows more in a month than most cities in a year! Yet it retains a friendly, small town atmosphere it had when I graduated from Basic High School. Although little is known of BMI's contributions outside the immediate area, the story of this company and this town is never less a story that should be told. It is indeed a story about people, the brave and hardworking men and women who pioneered the community of Henderson and helped shape its future. All of Nevadans can take great pride in the role BMI has played in American history.