



AMERICAN INSTITUTE OF MINING,
METALLURGICAL, AND PETROLEUM ENGINEERS

ORAL HISTORY PROGRAM

Ta Li: An AIME Booklet Inspires a Multi-faceted Mining Career

PREFACE

The following oral history is the result of a recorded interview with Ta Li conducted by Doug Silver on September 30th, 2021. This interview is part of the AIME and its Member Societies: AIST, SME, SPE, and TMS Oral History Project.

ABSTRACT

Ta Li has enjoyed a highly successful and multi-faceted mining career. An AIME booklet inspired his interest in mining and metallurgy, eventually leading to a BS in Mining Engineering from Columbia University. He began his career as a production supervisor at Kennecott's Bingham Mine. This position gave him a valuable foundation in communications & "people skills", engineering consulting, construction, and contract mining. His passion for marketing and publications led him to a job as an assistant editor for EM/J. He eventually served as an editor and writer for Mining Engineering and other publications. He left publications to concentrate on engineering consulting and the junior mining company sector. Ta has also been deeply involved in professional associations. He joined SME while in college. He later served SME as General Member Services Manager, and then as president from 2001-2002. His many awards attest to his professional success, as well as his efforts to promote mining both inside and outside of the industry.

Readers are asked to bear in mind that they are reading a transcript of the spoken word, rather than written prose. The following transcript has been reviewed, edited, and approved by the narrator.

TABLE OF CONTENTS

PART 1

- 00:24 Introduction – Childhood & Parents
- 05:35 The Li Family Today
- 08:21 An AIME Booklet Inspires the Study of Mining & Metallurgy
- 15:15 Academic Mentors & Influencers
- 20:24 Summer Jobs – Practical Learning Experiences
- 21:21 The Late 1960s – The Dragon Society & Student Protests
- 25:44 Into the Workforce – Utah Copper
- 31:01 Utah Copper – Early Challenges & Major Projects
- 34:31 Time for a Change: A Detour Into Mining Publications
- 37:46 A Gift for Marketing
- 38:43 Read all About It! – Major Accomplishments in Publications
- 42:55 Serving SME as General Member Services Manager
- 47:00 Changing Focus – Switching to Engineering Consulting
- 48:37 Wheeling & Dealing – Forming a Junior Mining Company

PART 2

- 00:17 Milestone Achievements in Consulting
- 02:01 Fourteen Years with Washington Group International
- 03:43 A Deep Commitment to Professional Associations
- 06:16 SME President, 2001-2002
- 17:11 A Little Fanfare Reaps Big Benefits
- 19:00 The Value of Technical Societies
- 20:52 The Happiest Times During a Long Career
- 21:51 Memorable Struggles Along the Way
- 22:39 Notable Colleagues
- 26:53 Awards & Recognition
- 30:16 What? No Professional Engineering License?
- 31:22 Career Tenets to Live by
- 34:23 Perspectives on Diversity in the Mining Industry
- 36:29 Introduction to AIME
- 37:35 The Importance of Networking During Conferences & Trade Shows
- 39:46 Why Join SME?
- 41:06 Interesting Young People in a Mining Career
- 42:25 Crystal Ball Gazing – The Mining Industry in Twenty Years
- 43:21 Public Misconceptions About the Mining Industry
- 44:13 Work/Life Balance – A Juggling Act
- 45:42 A Passion for the Mining Industry
- 46:48 Key Attributes to Success
- 47:28 Most Notable Career Accomplishments
- 49:27 Final Thoughts

PART 1

00:24 INTRODUCTION – CHILDHOOD & PARENTS

Douglas Silver:

Hello, my name is Douglas Silver, and I have the honor today of interviewing Ta Li for AIME's oral history program. Hi, Ta.

Ta Li:

Good morning.

Douglas Silver:

Let's start with your youth. Tell me where you grew up.

Ta Li:

I'd love to. I was born in New York City at Women's Hospital in Manhattan, June 25th, 1948. So, I'm really an old timer. Being raised in New York City encouraged me to play city sports: stickball, handball, baseball, and softball. I lived in various locations, primarily in Manhattan and Queens, New York. The latter six years was spent in Jackson Heights, which was primarily a Jewish community. That comes to bite you on Jewish holidays, because the only people that showed up in class were this Asian gal or Chinese gal, and myself. So, after the first Jewish holiday, I tended to play hooky every other Jewish holiday and spend my time where they were, too. I've always had a Facebook page, and it's really useful because I found out and reconnected with a lot of my people or friends from eighth grade, seventh grade, sixth grade. And, it's been remarkable to see that a lot of them who I thought would end up in jail, actually went to big schools like MIT and Harvard and became very important people like myself. When I got to junior high school, I took a special exam for specialized New York City high schools, which is controversial now, and got into Brooklyn Technical High School. I commuted by subway to the high school. I graduated three years from a four-year program by going to summer school. Brooklyn Tech was an outstanding STEM high school with a focus on engineering.

Douglas Silver:

That's fascinating. And, your parents have a very interesting history. Did they also go to college, and what did your parents do for a living?

Ta Li:

Both of my parents came from China. My dad was the scholar, majored in English. And, basically, they came over to the United States in 1947, before liberation. And, he went to Columbia Teachers College on a fellowship. My dad received his BA from Southwest Teachers College in Lanzhou, Gansu Province, China. And, my mom worked as a nurse in China, having been trained by U.S. missionaries. Upon my dad's graduation from Columbia in '49, 1949, he went to work for the Chinese News Service, which was not really a news service but a propaganda machine for the Republic of China and Chiang Kai-shek. He couldn't work for any U.S. firms, or companies, because he didn't have a green card, you know. Elements from the Chinese Exclusion Act were still prominent, although changing, because the Republic of China was a U.S. ally in World War II. He wasn't getting anywhere because everybody who was in this propaganda house, because the real heavies came from the Republic of China. And so, he was often bypassed for a promotion

to the top job in the U.S. So, basically, he returned part-time night school to Columbia in 1958 and obtained his MS in Library Science and got a job as a reference librarian at Princeton. It's interesting to note that this job wasn't his first choice. He would rather have worked for a public library system and interact with all sorts of children and adults in America, a country that he adopted. But, his advisor at Columbia said, "Well, you have knowledge of the Chinese language," and the Guest Oriental library, which was very famous at that time, could use your skills better. He became a reference librarian there, and that's where he went. Princeton secured eventual U.S. citizenship for my mom and my brother. I was born in the U.S., so I didn't have to go through that. My mom worked in the garment industry in Hell's Kitchen in Manhattan. And, when my dad moved to Princeton, she moved along. And, she actually commuted through Lawrenceville and worked on Eighth Avenue for many years, you know, and joined the International Ladies Garment Workers Union, and really enjoyed that type of work.

05:35 THE LI FAMILY TODAY

Douglas Silver:

I've known you for at least 40 years. And, you have a great family. Tell us about them.

Ta Li:

First of all, my wife of 52 years, Tu Leung Li, most of you probably know her. She had various jobs in accounting, insurance, project controls, and recently retired as an office manager for Orion Mine Finance, in their Denver office. We met at Hunter College at a dance mixer. We've been together since 1967. She graduated from the University of Utah in 1977, delayed by marriage and us moving to my first job in Salt Lake City. She was very supportive of my mining career, while concurrently establishing her career in administration with mining mineral industry entities. While both of us are originally from New York, we lived in Salt Lake City and Denver for the past 50 years or so. We have a son, Ta Ming. He's now 50 years old. He received his BS in Geophysics from Southern Methodist University and continues to reside in Dallas, Texas. Still single, he keeps steady company with a girlfriend of eight years, and, of all things, he chose to be a wildcat oil specialist punching holes in Texas, New Mexico, Louisiana, and Ohio. Their basic business model is to drill in the U.S., targets that were depleted from shallower oil wells and punching in deeper holes. And, he's been somewhat successful, but he's not a J.R. Ewing yet, and I'm still waiting.

I have an older brother who was a great mentor in my early professional life, having preceded me both in high school and college. He worked as an IT specialist in data processing and information systems for Unisys and travel companies. He currently lives in Nassau County, New York. Tu and I are living the good life, and traveling was always big for us. And, we did continue and go to places on our bucket list, most recently in Bali, Indonesia in November 2019. If we waited another three months, that would've all been kibosh with the COVID.

Douglas Silver:

Your son is Ta Li, too?

Ta Li:

Yeah. That joke got old, after five years of that. You're not the first American that noticed that.

Douglas Silver:

I'm observant. What can I say?

08:21 AN AIME BOOKLET INSPIRES THE STUDY OF MINING & METALLURGY

Douglas Silver:

You got a BS Degree in Mining Engineering. How did you decide to go into that field?

Ta Li:

Growing up Chinese – now we're Asian-Americans in the U.S. – we were always told that we'd be relegated to becoming a renowned scientist or engineer or working the laundry or restaurant. We could also be an economist, after Doug here. An AIME careers booklet on mining and metallurgy caught my attention and guided me to the earth sciences. While I wrote most of the mining schools, my parental pressures necessitated me to focus on Ivy League schools. Ultimately, I applied to Columbia University in mining and the University of Pennsylvania in metallurgy. Biggest obstacle to getting admitted was the fact that my SATs weren't anywhere near what they required. Also, because Asians didn't focus on extracurricular activities, college admissions departments usually scored negatively in their applications. By realizing that, I spent a lot of time in those areas to enhance my chances for admission to these top schools. I made site visits with my mother and met with the respective department heads. And, at Columbia, they didn't have a lot of people interested in mining. And, at Penn, there wasn't anybody interested in metallurgy. So, my focus in this area was based on "go where they ain't." And, I got admitted to both schools with generous scholarships. They were rewarded, not because of any brilliance, but because they were less populated by applicants. So, I chose Columbia, struggled with studies, focused on extracurricular activities, and finally graduated with a BS in Mining Engineering.

Douglas Silver:

What and who, were the most influences in pursuing an engineering degree?

Ta Li:

If you looked at all of the articles that were around, there were tremendous opportunities in the mining field. In 1965, there were actually only 150 graduates for the 300 plus jobs. Starting salaries were atrocious and small, but, interestingly at the time, graduate studies and degrees translated into being overqualified and was actually a disadvantage in securing employment. The exception was if you wanted to go into research. During my junior and senior years, scholarships were plentiful, but they were limited to top students. Not being one, I always struggled to stay afloat.

Later in my career I always focused on bottom-up students. When I was chairman of the scholarship committee for the Colorado section, I basically selected the applicants from the bottom-up because the top-down students always had opportunities and had plenty of money. But, you know, those that were in the middle like myself, or lower, basically never got anything. The other thing that influenced me were my summer jobs in the metal industry fueled the interest in mining. My first summer job was at the Sterling Hill underground zinc mine in Ogdensburg, New Jersey. Amazingly, we started at \$1.87 an hour for training for the first week. And then, we got raised to \$2.07 an hour as a miner's helper. Another summer job was at a pyrophyllite open pit mine for Standard Minerals Company in Robbins, North Carolina. That job I got through an AIME jobs list. In those years; AIME did that, and I was lucky to spot it. And that it was a great experience in Robbins, North Carolina. They saw very few Asians in those days. And, I could remember getting off in Biscoe, North Carolina, and everybody gawking at me, but we got over that. The interesting story there was I figured out, because I do have some street sense. I went to the local church that first Sunday. I popped out \$20 and made sure everybody saw I put \$20 in the offering plate. And, next Monday

when I went to work, everybody's saying, "Hi, Ta. How are you?" So, you know, it's really cool. The other influence was Pete Szabo, Columbia classmate. He was with me in high school, college, and also into the first years of my career. His thing was, "A rock in the box pays the wage." And, he gave me the phrase that mining is the only business where you start at the top and work your way down.

Douglas Silver:

Did you have to take any additional coursework?

Ta Li:

No, it's kind of interesting there, as I said before, I wasn't on the real Dean's list; but was kind of floating around the other one. I wanted to go to a business school when I graduated. But, my college advisor knew, and he told me to get to work and get some experience. He surmised that business school wouldn't do me any good. With all the time I spent on college extracurricular activity, that probably constituted as an additional course. I would venture to say my load in this area was as significant as my coursework. It's a matter of priorities. So, you know, I was involved in student council, class officers, Theta Tau/ and et cetera. Finally, volunteer work in my local communities was kind of a course. And, I did some tutoring in East Harlem, but honestly that reminded me of my early childhood, and I really didn't want to go there.

15:15 ACADEMIC MENTORS & INFLUENCERS

Douglas Silver:

Did you have any of your professors mentor you in any way?

Ta Li:

All my professors mentored us, because there was only two of us in the class. And, two guys that kind of, pros, that come to an immediate mind: K.P. Wang, who was an adjunct professor and China expert for the U.S. Bureau of Mines. He taught us mineral economics, but most importantly, emphasized our information network, so that, even if you didn't know the answer, you'll always have the means to find out. He also made contacts and helped me with my first China trip, which I discuss a little later. Stefan Boshkov was the department head of the Henry Krumb School of Mines at Columbia. When I went to see him and sold him on my interest in mining he worked to influence the admission department to accept me into Columbia. After years on the Dean's list, [he] encouraged me to continue, despite my academic problems. Through the mining summer field program, we did underground surveying in Bellefonte, Pennsylvania next to another renowned mining school, as well as visits to coal mines and metal mines in North America. That summer we gained our street smarts, which was of great value later in my professional career.

Douglas Silver:

Did you have any classmates that influenced your studies as a career?

Ta Li:

Sure. Alan Silberstein was my roommate and majored in metallurgy at the Henry Krumb School of Mines. We became lifelong friends, and he always assisted me in my professional career as well as in college. Alan went to Harvard Business School and was very successful in the retail banking space. Early in life, when we were in college, we had the Columbia disruptions in 1968. And so, it occurred to me that was a great opportunity. And, we actually put together an Ivy League engineering conference that focused on the social

responsibility of engineers and sustainability. We had twenty people from each school: Harvard, Yale, Princeton and the lesser Ivys. Basically, we talked about current issues. And, another part of Alan's friendship, too was, when I was in a junior company, needing a basic a checking account for, your day-to-day activities. He introduced me to a guy, a colleague of his from Norwest Bank. Basically, we didn't have any money, we didn't have any assets yet. And when I met with him he said that, being recommended by Alan, they can immediately give my company a \$5 million credit line. He also assigned, amazingly, a private banker to us. I said, "Wow." And, that proves handy later on, as we executed our business plan at the junior company.

Moving on again, Pete Szabo he was a classmate, who I spoke about previously, gave me great advice throughout my studies and early professional career. When I became president of SME, I was looking at every picture of all the past presidents. And, I thought maybe I should take a picture of me in a golf jersey, you know, swinging a club. And, he gave me the perspective that that might be cute, but that's not really appropriate. He says, "You've got to think from fifty to a hundred years from now, there'll be students that are studying the mining business. And, part of that would be to look at Mining Engineering magazine, because it is a principal mining publication." He says, "When people look at your picture with a golf club in your hand, that might not be appropriate. So, think of how you want to be remembered in eternity." So, that's why I have such an impressive picture now from Mining Engineering,

Douglas Silver:

It had nothing to do then with your golf swing?

Ta Li:

I had a better one then! And the other, my brother was a great influence. And, the final guy, that was Daryl Goodrich. He was the other mining engineering student. He tutored me in my mining courses, and I reciprocated in helping him to leadership positions in extracurricular activities. We reminisced a lot about that exchange in our 50th reunion in 2019.

20:24 SUMMER JOBS – PRACTICAL LEARNING EXPERIENCES

Douglas Silver:

You mentioned having summer jobs in the mining industry. What did you get from your summer jobs that you didn't get from academia?

Ta Li:

There was a whole new area of learning that we had to do, getting along with miners. I joined the union for the experience at New Jersey Zinc. At Standard Minerals in Robbins, North Carolina, I car pooled with the mill workers. You really learned to work and get along with people because, you have the college graduates that are on a certain level, and you have other people that are on a different area So, anyway, these summer jobs helped my career, seeding me with both relationships and a perspective on management and hands-on experience for the mining production cycle.

21:21 THE LATE 1960S – THE DRAGON SOCIETY & STUDENT PROTESTS

Douglas Silver:

During the late sixties, there was a lot going on in America. Did any of the political or cultural events affect you in your studies?

Ta Li:

There were a lot of things and every year, there was a different problem. One of the great things we did for the Chinese then, we basically got together with three or four guys that didn't really want to join the traditional club. So, we formed something called the Dragon Society, And, it was organized to put together first generation Asian-Americans in the university environment. One of the immediate lessons we learned was that, as a student, we could organize activities that could make a profit. So, we did this Oriental arts festival. We showed movies in the student activity center. One in particular I remember was the movie "Monika," one of Bergman's classic movies. In the publicity, maybe this is my knack for marketing, we actually put a flyer together which showed Monika's cleavage from the back. You put that on a flyer around campus and students get interested. Both showings were both sold out. I remember after the first showing, people coming out said, "It's not a porn film, it's something different." And, the second showing line said, "Yeah, you're just BSing us." And, they all came in and filled that up, and we made a ton of money doing those kinds of activities. So, in the bylaws of this Dragon Society, basically, we made sure, because drinking was only 18 in New York at that time, alcohol was a must for every Dragon Society meeting. So, we got a lot of white diversity people in the club, too. As I mentioned before, I attended Columbia from '65 to '69 and what one would remember the student protests at Columbia, it really had an impact in my life. Engineers continued to study while the campus was held hostage. So, that was kind of an amazing realization of engineering students. And, because I was not one of the brightest students, I kind of held out a sign and protested along with the other guys. And, I remember my mechanics, a solids professor, coming up to me and saying, "Well, I know why you're protesting." So, it was kind of an amazing time. And, like I say, that student relevance and unrest, as I said earlier, made me to conceive to the Ivy League engineering conference. It convened on campus during National Engineers Week in 1969. And, we had Secretary of Interior, Stuart Udall, Percival Goodman, a famous architect, and Bob Lilley, who is the president of New Jersey Bell as key note speakers.

On graduation, America had the draft lottery. I drew a low number: 124. So, I took the full day physical at the induction center in Manhattan. I failed the exam by being underweight. So, I was ready to go to work somewhere. In 1968-69, many mining companies had headquarters in New York, but the Vietnam War era was a deterrent to hiring new graduates. Essentially, they didn't hire us because they thought we were going there for draft deferments.

25:44 INTO THE WORKFORCE – UTAH COPPER

Douglas Silver:

So, how did you get your first job then?

Ta Li:

I interviewed with a lot of companies that were located in New York: Anaconda, Amax, St. Joe Minerals, Copper Range, Phelps Dodge, and Kennecott Copper. Other companies outside New York included Consolidation Coal, Island Creek Coal, New Jersey Zinc. I still kept the rejection letters. Kennecott was most receptive to my career goals, that mining engineers should also be working in nontraditional areas of public relations, sales, and marketing. So, I got an invitation to interview with the Utah Copper Division of Kennecott. I was swarmed with engineering and computer personnel guess Asians were stereo-typed that into the technical areas of the business. When I made the comment, "Well, I'm not really interested in doing technical engineering assignments" Their response was "Oh, nice to see you," and pass me along to the next guy. The final interview was Mine Manager, Tom Carlson, from Michigan Tech, who, when asked, "What would you like to do?" I told him, "Anything short of slavery." And, he ultimately gave me the offer to become a production supervisor. And, my wife and I were off to Bingham Canyon, Utah.

Douglas Silver:

What year was that, roughly?

Ta Li:

1970, May.

Douglas Silver:

What facilities did Utah Copper Division have that made it a good job?

Ta Li:

Utah Copper Division was a typical big company with integrated production centers. So, it was an excellent place to learn. Integrated mine production included an open pit mine, 115,000 tons per day or a stripping ratio of three and a half to one. It had both rail and truck haulage operations, had a concentrator. I.e., crushing, grinding, flotation. It had a conventional smelter and precious metals and moly recovery plant and the copper precipitation plant. Supporting mine and industrial engineering groups were there. They had extensive waste and tailing facilities. Everything you wanted to know about mining was contained in this division. And, I remember commenting to my wife, we were really fortunate that we were able to come here because of its proximity to Salt Lake City, a large metro area versus other remote mining locations.

Douglas Silver:

The first few years of your career, you were working as a production supervisor at the open pit. What were the responsibilities, and how much staff reported to you?

Ta Li:

I started as a rotary drill shift foreman. Bingham Canyon produced 14% of the U.S. primary copper in 1969-70. And, I was responsible for half the drilling fleet. So, I surmise that I drilled and blasted 7% of the nation's copper. Blasting shift foreman, was a tougher job, but, luckily, I was mentored by outstanding blasting foreman, and I was a truck shift foreman. Attitudes of peer groups towards a college graduate was an obstacle easily overcome, once you understood what they were trying to do. Sustaining production at each work center, basically, was a big part of my job – solving day to day problems. "Safety First" was on the minds of everybody, and we had to keep an ongoing safety education program with them. Seniority, even among our newly college graduates, was key components for operations personnel. And here, I had an extended introduction to graveyard shift.

Douglas Silver:

How did Kennecott provide you with a foundation for the rest of your career?

Ta Li:

It actually helped me both in the mining communications area, as well as the engineering consulting, construction, and contract mining. I continued building people skills to all levels of workers that really supported my future managerial skills.

Douglas Silver:

Did you find it difficult to convert from college into the mining world?

Ta Li:

Not really. You know, we needed to have practical knowledge, speak with street smarts as well as book smarts. The transition included building a sense of urgency in everything we did and you needed to know people and the processes to get things done. Establishing respectful, respectable relationships with coworkers was a key requirement for that success.

31:01 UTAH COPPER - EARLY CHALLENGES & MAJOR PROJECTS

Douglas Silver:

And, what were your biggest challenges adapting to working in heavy industry?

Ta Li:

Well, I think the big realization that you don't have forever to solve the problems. Each unit is dependent on each other, and solutions [are] needed immediately, because if your area of responsibility goes down, subsequent unit operations also shut down. And, you had to do some risk taking, which is important to an engineer and production supervisor. Overcoming "we do this as it always has been done" was another obstacle and a challenge, because that inhibits innovation. Relationships and trust building are important to overcome preconceived established procedures.

Douglas Silver:

What were some of your first major projects?

Ta Li:

I suppose mine planning with associated drilling and blasting, basically, to keep ahead of the shovels. When I transferred to truck haulage operations: it was really to sustain and/or schedule a balance between trucks and shovels and flexibility to move trucks within the pit when some were queued up too much, or too little.

Another area where they wanted us to perform was through work simplifications or Kennecott's suggestion box. Frozen water lines in the winter on drill rigs, worn out drill pipe threads were major problems in the drilling cycle. I worked with my peers and design alcohol injection systems for rotary drill and redesigned rotary drill steel pipe thread that extended pipe life. For reinforcing safety programs, we systematically organized safety talks as well as reviewing job procedures to reinforce Kennecot's safety culture. In accident reporting I had an ability to write, and so most of my peer frontline supervisors, put the writing requirements to me. The last thing I did for work simplification was to suggest a frontline supervisor's community relations program. While this was a sidebar, it was innovative in that it recognized that frontline foremen having a key knowledge of the mining processes and could be trained to transfer that knowledge to their specific neighborhoods and communities. The concept was accepted by management. But, unfortunately, the PR department was charged to execute the program. Not really understanding the suggestion's intent, the seminars turned into a gripe session instead of an educational one. But, I mean, it was good thinking at that point in time.

Douglas Silver:

You mentioned that part of your job was solving problems, but it sounds like the problems you were solving were not things like pit wall failures, but just little things that made the operations run better.

Ta Li:

Yep. Smoothly. We had, in a big company like Kennecott, you had lots of people in the mining engineering, industrial engineering, that tackled those issues because they were specialists, and when they weren't, they went outside to consult for us.

34:31 TIME FOR A CHANGE - A DETOUR INTO MINING PUBLICATIONS

Douglas Silver:

Given your work at Kennecott, what motivated you to leave the mine and become associated with mining publications? How did you make this transition from one sector to the other?

Ta Li:

My initial goal in mining was to work and get my hands dirty and understand the processes. And, after a couple of years in operations, I thought it was time for a change. AIME was a great help. I requested from my supervisor paid time off to attend the annual meeting in San Francisco in 1972. Understand that I didn't ask the company to pay for my trip. I just wanted to be paid for the time off to better attend sessions and expand by capabilities. And, the logical thinking there was, the more I knew the better off the company would be. So, I was off to San Francisco.

At the Caterpillar hospitality suite at the meeting, I sold myself to the editor-in-chief of E/MJ, a McGraw Hill publication. George Lutjen, the editor, saw my name badge and was intrigued with all things Bingham, and certainly I could talk about all things Bingham. And so, after a while, he asked, "What did you think of E/MJ?" – which was the leading mining publication. And, I said to him, quite succinctly, "I think you need more engineers to write the magazine instead of English majors," which was a hell of a thing to say. And, he said, "I like you." And, I said, "Oh, okay." And, he continued, "Do you have a business card?" I looked at him rather astounded. I said, "You know, they give business cards to certain types of people." I said, "I'm a guy that's drilling 7% of the nation's copper." I said, "We're too busy working. They don't give people like me a business card." Lutjen became more intrigued, and said "I like you." The next time you're in New York, why don't you come up and visit?" And so, I interviewed in New York and was offered a job as assistant editor. I learned technical writing, trade magazine business, the advertising and sales process, and developed tremendous mining contacts at the highest levels by being an Assistant Editor. , I also understood the politics of publishing. In 1975, I joined SME in Salt Lake City as technical editor and served briefly as manager of general member services, subsequently became editor-in-chief in 1977. Transitioning to publications included learning by practice, that improved my writing skills. At McGraw Hill, there were plenty of professional writers and art departments, and it was at this time I accelerated my skills in writing and oral communication.

37:46 A GIFT FOR MARKETING

Douglas Silver:

Ta, you're considered one of the best marketers in the business. When in your career did you decide or learn that this was actually one of your strongest skills?

Ta Li:

I'm not so sure I know how to answer that question. You know, the politically correct answer is I'm still learning.

Douglas Silver:

And, what's the real answer?

Ta Li:

I guess I always knew it, especially getting into college. I certainly wasn't on an academic par with the other students from an SAT or rank in class perspective. But, I wanted to, or had to go to, Columbia because of my family required it. I found the way to do it. Street sense is as important as anything else I've ever learned.

38:43 READ ALL ABOUT IT! - MAJOR ACCOMPLISHMENTS IN PUBLICATIONS

Douglas Silver:

What do you consider some of your major accomplishments while you worked in publications?

Ta Li:

My ego's big, and I think I did a lot of things. I did 14-cover feature stories over a four-year period with these magazines. I always thought it was important for editors to not just edit, but to build credibility for the magazine by showing that the in-house staff have knowledge and were reporting on major trends in the business. In 1974, we did a special issue for Mining Engineering on ocean mining. And, rather surprisingly, reprints were ordered by the U.S. House interior, sub-committee on deep ocean mining, to serve as a source document for them. I coauthored that special issue with Richard Tinsley who had a special interest in ocean mining. The issue on Ocean Mining was a significant article to SME I also authored two major articles on mining education in the U.S., researching outlooks, starting salaries, types of jobs, and outlook for engineers. These articles were published in 1972 and 1977. In 1978, I was invited by the U.S. Department of Commerce to lead an equipment seminar trade mission to the Philippines, Thailand and Indonesia. Sheldon Wimpfen, who was the Chief Mining Engineer at the Bureau of Mines, couldn't chair this one as he usually did. He was a reader of Mining Engineering and thought I could do it and nominated me to Chair the Seminar. Upon completion of the trade mission, I authored a special issue on mining in the Far East in April 1978.

In 1978, as editor of Mining Engineering, I was invited to visit China through the recommendation with K.P. Wang, my professor mentor. K.P. and I embarked on a four-week tour of the mineral industries of China. We visited several mines and mills throughout the country, as well as meetings with the principal ministries: coal, gold, iron, nonferrous metals. With Dr. Wang, we put together the special issue on China in the April 1979 issue of Mining Engineering. Other special issues were on specific unit operations, Pinto Valley, Eastern Tennessee Zinc, Western U.S. Phosphates. Our Bicentennial issue was on the Coeur d'Alene mining district. I also travelled to the major rotary drill manufacturers in Milwaukee, Dalls and Mario to report on automation rotary drilling. In the ensuing years, I served as chief editor of four SME proceedings publications: Mineral Resources of the Pacific Rim, Mineral Resource Management by Personal Computer, Risk Assessment in Mines, and Small Mines Development for Precious Metals Development. After SME stopped its fall meeting, there was a mandate to come up with special topical meetings. I'm proud to say that we had proceedings, which included all of the paper presentations. After I left, SME, I started writing the Surface Annual Mining Review for Mining Journal in London, as well as the Mining Annual Review for

International Mining magazine. I remember spending all-nighters to meet the deadlines.

42:55 SERVING SME AS GENERAL MEMBER SERVICES MANAGER

Douglas Silver:

You mentioned prior, that you spent some time as SME's Manager, General Member Services. What did you do in this role?

Ta Li:

I thought it was a detour, but, actually, General Member Services was a broad job, which included services that nobody else in SME staff wanted to do. Executive Director, Claude Crowley, at that time, placed me in this role from an SME political perspective so that, when the top editorial post opened, I was the only logical choice. I never knew he was that clever. Member Services included management and administration of local sections and student chapters, membership development, education board, plus the six subcommittees, ABET, and the GEM (Government, Energy, Minerals, which is now the MEC). One special project that I conducted was working with the SME planning committee to put minerals and mining engineering on a national basis. Ernie Spokes, University of Missouri, Jack Hoskins, University of Idaho and I lead the efforts of behalf of SME. My mining engineering background facilitated our committee to progress faster for the exam. We presented the mining/minerals syllabus, two complete examinations and solutions to the National Council of Engineering Examiners (NCEE) and their Uniform Examination and Qualifications (UEQ) Committee, in Orlando, FL. All engineers have egos, and the UEQ members were no different. They thought of mining engineering as not a legitimate engineering, based on the two sample exams that were submitted. They said, "you know, beef up the examination and re-present to us next year when we meet in Louisville." Well, I, I figured out what the problem may have been. Certain solutions, if you were an engineer, you know how to get to the solution. For instance, in a fluids problem, you can go to a McNally handbook and read off a graph and to solve a Ross and Rambler fluids problem. In the solution manual, we just put in a picture of the graph. The UEQ engineers responded "Well, you know this is too easy for a P.E. question. So, I told Ernie, "Don't worry. I think I understand the problem," and I went back to the exam book. And, every solution that was less than three pages, as in the case of the Ross and Rambler graph, I put in the graph also inserting numbers to the equation thus expanding the solution to three pages. So now, the exam solutions were about same in length. The resubmitted examination book increase in size but not in content. I remember in Louisville, the same mechanical engineer that accused us of not being a legitimate engineering field, saw that exam and said, "Hey, you guys in mining/minerals are serious, and I'm voting to have this on the national examination." So, that was a behind the scenes story. When all this was completed by 1979, I was appointed SME's first member of the Professional Engineering Advisory Committee. That's the time when they wanted more citizen participation in these certifications. And, basically, I told them that I wasn't a registered P.E. To which they responded, "Well, you can't be on the PEAC, I politely said, "Well, thank you."

47:00 CHANGING FOCUS – SWITCHING TO ENGINEERING CONSULTING

Douglas Silver:

With an outstanding record in the publication area, what motivated you to switch and refocus into the engineering consulting business?

Ta Li:

It's like everything else, money became a large factor in redirecting my career. In those days, working for a

nonprofit was not financially fulfilling. The greatest asset that evolved for the consulting business was the extraordinary network of contacts in the U.S. and global mining communities. Consulting firms around 1980s, rarely focused on marketing and business development programs. Also, the large EPCM companies were looking for mining professionals with marketing skills, and, again, a large network of contacts. I chose to work with Golder Associates in Denver, headed by Bruce Kennedy. hired to work as a senior mining engineer, and initiated the marketing and sales functions. Subsequently, I worked on and off with Thyssen Mining Construction, Pincock, Allen and Holt (PAH), Behre Dolbear. It was at PAH where we started working together.

Douglas Silver:

Yeah.

Ta Li:

ACZ Environmental Consultants, which was really great because I learned the terminology of the environmental. And now, I could write fairly well in that business, too. And, finally, with Tetra Tech, which I retired from five years ago.

48:37 WHEELING & DEALING – FORMING A JUNIOR MINING COMPANY

Douglas Silver:

Your resume also shows that you worked in the junior mining company sector. What was your experience in that area?

Ta Li:

Minex was a client of Pincock Allen and Holt. With my strong marketing and sales background and a growing network of financial entity contacts, the Venezuelans asked me to join the group and head up the corporate development function. I first interviewed in Caracas in November 1993, during Hugo Chavez's first unsuccessful coup d'état. The country was under martial law. The Minex guys smuggled me out of the Caracas airport and downtown for the interview, and I joined the group. The company's flagship property was the Oro Uno Gold Project located in the Kilometer-88 gold region of Venezuela. Here, we developed and constructed a demonstration C-I-L plant. I served on the negotiating team with financial entities, and we visited with Yorkton, McDermid, St. Lawrence, Gordon Capital. Through work with equity sharing company, International Kengate Resources (cash infusion), we were leveraged to deal property suitors. Ultimately, the property was sold to Venezuela Goldfields (Bob Friedland), for C\$64 million in cash and shares.

To reset the bar, began search for a shell company using our large contact network. We found a shell company and initiated a reverse takeover process. Minex contributed three South American properties to the new venture. Now, I knew nothing about reverse takeovers. I remember, Doug. You said, "I can help you." And, basically, I remember showing you the structure of the shell company, and you suggested, "Well, keep these treasury shares, you know, and gave me a plan. So, we flew to Cleveland, Ohio to negotiate for this shell company. I presented verbatim the plan you suggested. You knew I was having the meeting, because you gave me a number where you could be reached. Well, anyway, the shell company counter offered me and said, "No, we don't want to do this. We want to do this, this. At this point I remember saying said, "Can we pause the meeting? We need to caucus because my three Venezuelan partners want to discuss the counter offer. Our team went back to our suite, and I remember called you. I said, "Well, this is what they countered with What do I do now?" You gave me an alternative. And, rather amazingly, they

accepted the revised terms when we came back. All of a sudden, we created a new junior company by the reverse takeover method and were listed as a Vancouver Stock Exchange venture. During my time there, I negotiated financing for C\$10 million working capital facility and established Anglo-Andean Explorations and served as its President and Chief Executive Officer.

Douglas Silver:

I don't remember getting any founder shares in that.

Ta Li:

We didn't even give you a finder's fee?

Douglas Silver:

No, you might have bought me a beer.

Ta Li:

But, it was absolutely amazing, because my peer group was totally surprised that we completed the Reverse Takeover in such a short time. So, thank you, Doug.

Douglas Silver:

You're welcome.

PART 2

00:17 MILESTONE ACHIEVEMENTS IN CONSULTING

Douglas Silver:

Prior to joining Washington Group International, you spent time back in the consulting sectors. What were some of your milestone achievements during that brief time period?

Ta Li:

I went back to Behre Dolbear after Anglo-Andean and was made Vice President of Corporate Development. At this point in time, here's where I think I peaked in the business development for the consulting area because, armed with a successful resume of operations, engineering, marketing, and numerous contacts, the brief tenure I had at Behre Dolbear was successfully winning a series of high-profile jobs in an amazingly short amount of time. Projects included consulting audits and due diligence projects for Placer Dome's Las Cristinas, Minera Alumbrera's Bajo de la Alumbrera project in Argentina, and reserves audits for Fort Knox, Amax Gold's project in Alaska. We worked with the Nigerian country Energy and Mineral Resources Department for a country mineral inventory evaluation for future reference. Rather amazingly, we worked through some connections in Europe, [and] won Ethiopia's Lega Dembi Gold Mine feasibility study. We got annual audits for Nevada Gold's, Carlin operations and other world class projects. You know, I thought, "Yeah, this is pretty cool."

02:01 FOURTEEN YEARS WITH WASHINGTON GROUP INTERNATIONAL

Douglas Silver:

A fourteen-year tenure at Washington Group International represented your longest tenure with a company. Can you talk about your positions and your responsibilities?

Ta Li:

Great. I loved my time with Washington. I was hired as a marketing specialist, focused on business development for Morrison Knudson, which was sold to Dennis Washington in 1998 to become Washington Group International. As a large EPCM group, I was assigned to the mining division, focused on contract mining. As a mega company, there was great diversity and personnel and operations support, thereby allowing me to focus solely on business development-related activities. Early years were spent learning the roles and politics of the department and company. Sales success was really a result of understanding client needs, sales presentation, preparation, collaboration with client, aggressive proposal pricing and market intelligence on competitors' pricing strategies. I'm not quoting from a textbook. I mean, these are things that, you know, and you, kind of, pick-up from your peer groups. Basically, we had strong and flexible contract negotiations, and I initiated proposal execution, working in concert with the technical teams. Management delegated sales responsibilities but retained executive committee reviews. With these directives, I found the position challenging, interesting, and to continue for a long period.

03:43 A DEEP COMMITMENT TO PROFESSIONAL ASSOCIATIONS

Douglas Silver:

Another important chapter of your life is how you've been associated with professional organizations. Tell me how and why you chose to become involved in these groups.

Ta Li:

It's a natural relationship for a career in mining. AIME, and then SME, was a natural extension for professional development. As in everything else, participation contributes to professional knowledge and expanded business contacts. Each professional group has both attributes and limitations. Principal organizations during my career included SME, Northwest Mining Association, Colorado Mining Association, and the Denver Gold Group. In each organization, I rose to the top leadership roles that diversified and broaden that organization's reach into the mining industry as well as advancing their inherent organization strengths. Each organization further advanced my leadership skills and enhanced my contact networks. My progression in professional life was sustained with lessons learned as a member and chief executive in these organizations.

Douglas Silver:

Now it's your time to show off. What is, or was, your involvement in these societies?

Ta Li:

Basically, in SME, I participated in virtually every position, including vice president of finance and president. And, I became an AIME Trustee and Treasurer. At the Northwest Mining Association, I started as a membership chairman, served on the board of trustees and punched into the vice president and president. At Colorado Mining Association, [I was] chairman of their national Western mining conference and became chairman of the board in 1995-96. For the Denver Gold Group, I am a lifetime member of their founder's circle. I served on the board of directors for 22 years, and I was president in 1990 and 1993, in the

formative years. I also worked in the World Mining Congress, and I'm the U.S. representative, along with Mike Karmis in their International Organizing Committee.

Douglas Silver:

You must have more plaques than anybody in the business.

Ta Li:

You'll see it in the pictures.

06:16 SME PRESIDENT, 2001-2002

Douglas Silver:

You served as SME's president 2001-2002. Tell me what it's like to be president and what you learned along the way.

Ta Li:

That was a pretty busy year. I was elected in 2000, which gave me two years to think of my goals and activities. I continued the President-Elect tradition in attending the Lima section holiday party in November 2000. Instead of just going there and talking about how great SME is, they already knew that, I asked the SME staff to search the database and give me their twelve oldest section members. And then, I asked them to come up with an honors certificate to present at their holiday meeting. I always thought, again, when an SME President attends an international function, he should be an active participant in the program and not just passive and by being a figurehead. Len Harris told me later that, ten years later, that certificate that I presented them were still on everybody's walls, and they were in English. And, yeah, it was kind of a neat thing to do.

In January 2001, the year I was assuming the presidency and the annual meeting in February, I called a meeting of the SME Executive Committee. The reason I did that was because, in the traditional cycle of things, the SME president is president-elect and does certain things. But, in February, when the annual meeting occurs, he or she is somewhat behind in planning, and discussion are minimal because of time constraints at the meeting. But, having a meeting a month ahead of the annual permits better discussion of the year ahead. In my meeting, because I understood the role of SME committees, I, basically, outlined goals and objectives for all of the SME committees, creating an early buy-in by the executive committee to the program prior to the annual meeting. Each committee had a mission or an expectation. And, when we got to the annual meeting, we left, not with what we were going to do by the midyear meeting, but a program to work for. So, we did that. February's SME meeting happened, board of directors' understanding the goals and expectations for the year and the plan to move forward. My focus was going to be on SME globalization and was supported by an international travel plan.

First thing we did was to go to Canberra with Len Harris, chairman of the international committee. And, we met with the AusIMM leadership to reaffirm our reciprocal meeting registration policies and book sales preferred prices. Most importantly, we gathered data for establishing the qualified persons membership class in the U.S. They gave us everything freely, and it was really great. Their materials were handed over to the next generation that subsequently got this Professional Member class approved.

After the Canberra trip, we continued on to Manila to commemorate the 62nd anniversary of the Philippines local section. Apparently, the last time they got a visit from somebody in the states was in 1980 when I did the seminar equipment trade mission. Again, I presented awards to the twelve most senior

section members, and they all came up, and we took a picture. And, it was really great. I remember the chairman of the Philippines section who introduced me. He said, "You know, we've been following Mr. Li's progression over the years. And, for a man that looks like us," –I guess he was meaning Asian – He said, "To reach the top-level job in an organization like SME is a most remarkable event." And, he says, "And, personally, I consider him my idol." Wow, I better say something nice about him. And, I remember the paper I gave was because of your generosity and sharing your information, Doug Silver, on developing priorities for lesser developed countries – that's what we called them then. And, you know, everybody was good on that.

Moving on, the rest of the year I traveled to Arequipa, Peru to attend that Peruvian mining show. And, instead of just going there and taking pictures at SME booth or their Peruvian Association booth, I had a crystal presentation piece presented by the Society for Mining. And, Len Harris said, "You're going to give us an award. So, when are you going to do that?" I said, "Well, I'm not going to your booth to take a picture. You're not coming to my booth to take a picture. I want to present it to you at your largest to be held assembly." And so, they said, "Okay, if you put it that way, we'll have a front seat for you and your wife, and, you can come up and present the award," before their regular agenda came. I said, "Well, we need a seat for Len Harris and his wife." He says, "Why do we need that?" And, I said, "Because Len Harris is chairman of the SME international committee. That's the primary reason I'm here." "Alright. Alright, we'll give you that." And then, I said, "Well, we need one more seat for Paul Sheidig, the executive director" "Why do we need that?" I responded that, "He's the chief operating officer. You wouldn't want to be insulting him." And, they said, "Alright, alright, you have six seats." And then, I said, "Look, my speech will be very short." "You want to make a speech? What do you want to make a speech for?" So, he said, "Okay, please make it brief." I said, "I'm the American here!" I said, "I'm going to tell them what a great meeting you have. Why wouldn't you want me to say that in front of your biggest audience?" "Alright, alright, go ahead. Please don't make it too long."

So, anyway, the meeting started, we came up there, you know, we presented the recognition statue to him. And, the President of Peru, Alejandro Toledo, was up there, and he was sitting, you know, he was going to make a speech a little later on. And, instead of coming off the podium, I went back to the podium. Seems like I had an extra SME trinket. And so, I went back to the podium, and I said, "And now, I'd like to present to the Constitutional President of Peru, the honorable Alejandro Toledo, a small token of SMEs esteem for him. And, we're awarding you the SME "lapel pin of distinction." Toledo said, "Well, thank you, Dr. Li." Anyway, we finally got out of there, but it was a great story for being in Peru. And, I remember the guy at Newmont who was the Latin American Group executive. He said, "You know, I came to that closing session early, and I'm listening to English! They never speak English at that! So, I see you there." He says, "Then, I saw you shake hands with the president of our country!" And, he says, "If anything, a president should be doing what you did." And so, that's what happened.

There's a sidebar at the end. After Toledo left with his contingency, Len Harris and I were there, and the Peruvian press turned to us and wanted to ask us some questions. "Well, here, let's interview the Americans." So, Len Harris is there, and he says, "They want to ask you some questions." The first question to me was "Well, you've been to many international meetings." He says, "How do you think Peru should improve this meeting to raise it to meet the global standards of meetings you're used to?" And, I said to Len, I said, "Well, translate this, tell them that you asked the wrong question." And, they said, "Well, I'm sorry. What should we have asked?" And, I said, "The real question is, how should the world improve their standards to meet the excellence you've done here at this meeting?" Len Harris' mouth was open. He said, "Where do you get this stuff?" I said, "It's marketing and sales."

So, also during that year, I traveled to Expomin in Caracas, Venezuela. I met with Camiven, their mining trade organization, like our National Mining Association. And, we reestablished our technical cooperation agreements and gave each other tokens of our societies. I also met with the Venezuela student chapter, affirmed student membership, and programs for professional growth.

I convened the SME midyear board meeting, moving it from airport hotels to Lake Tahoe, Nevada. Record attendance with our families reinforced bonding and professional networking among SME leadership. I participated in the AIME Board of Trustees meeting held in Williamsburg, Virginia that year. We also hosted the SME Young Leaders, then there were only four, to brainstorm and present future direction of SME.

Later on that year at the invitation of the China Coal Society, I traveled to Beijing to successfully negotiate and finalize a technical cooperation agreement between SME and Chinese mining groups. SME hosted an estimated twelve groups to the U.S. In China, I met with members of the China Non-ferrous Metals Group, China Gold Group, and the Xian Mining Research. I completed the year with the early executive committee meeting by 2002 organized by 2002 President, Mike Karmis, and handed over to the next generation at the Phoenix meeting in 2002.

17:11 A LITTLE FANFARE REAPS BIG BENEFITS

Douglas Silver:

You're known to be an expert in marketing. This fanfare really works, doesn't it?

Ta Li:

I had a great time. Well, it was enjoyable carrying the flag for SME. And, I behaved with decorum and professional integrity.

Douglas Silver:

But, it impacts the recipients, too, doesn't it?

Ta Li:

To see somebody come in and, you know, receive awards from the motherland. Len Harris said he wished more of the people would do that kind of stuff, you know, make a up an award. The fact that, we're the Americans and a leading mining and technical [association] means all the world to people in other countries, although globalization is shrinking. But, yeah, it was a good thing to do in the Philippines, too.

Douglas Silver:

Is it true that your first executive act was to make the plaques bigger?

Ta Li:

Do you know, they did that in the Northwest Mining Association, I added that they should make awards look like awards and not attendance participation. That idea was incorporated, and I won the Northwest Mining Association's Starters Award, which was a Kennecott Steel from their Alaskan mine mounted on a plaque. Later on, you'll see, that's one of the awards I was truly surprised to get, and, again, it was unexpected.

19:00 THE VALUE OF TECHNICAL SOCIETIES

Douglas Silver:

Okay. So, that was wonderful, Ta. How do you see the technical societies benefitting people in the industry today?

Ta Li:

I think there are a lot of factors: awareness of new topics, visualization, digitalization by computer methods, artificial intelligence, benchmarking, and improved productivity. Continuing education and training courses for industry professionals are a mainstay that benefits people. Competitive awareness, technology innovation, and opening new paths for professional growth, horizontal and vertical advancement. Technical societies really can focus on safety management improvements and forums for discussion of ESG trends.

Douglas Silver:

How did this societal membership benefit you in your career?

Ta Li:

Yes, it did everything. It made me rise to executive level of leadership within organizations, which facilitated contacts at the highest level in the mining industry. It helped understanding organizations and their inherent policies, resulting in lessons learned in the private sector. It was social networking in the pre-internet days and improved my public speaking. In closing, I felt that it was the most important part of my professional career.

20:52 THE HAPPIEST TIMES DURING A LONG CAREER

Douglas Silver:

When were you happiest in your career? You've done many different sectors. What was your happiest times?

Ta Li:

Winning proposals as a consultant: working together with the proposal teams, doing the strategy, the research, proposal presentations. And, when you win, you're very ecstatic. The better deals were done because of long-term business development and client relationship management. Other happy times were completing our special issues in Mining Engineering; time to rest and plan for the next big thing. And, when I mentored young professionals who were influenced by my experience, I mean, that was very gratifying. Finally, when I collaborated with others.

21:51 MEMORABLE STRUGGLES ALONG THE WAY

Douglas Silver:

Okay. So, Ta, on the flip side, when did you struggle the most in your career?

Ta Li:

When I started working for the Washington Group in 1997, my average job duration was three years. So, I committed myself that I would stay here at least five years at Washington Group. Initially, it was a big struggle, to say the least. I overcame this by being nonconfrontational, and it worked because then I could focus on my career agenda while kowtowing to my immediate superiors. In the end, I stayed at Washington

for fourteen years, contributing to record sales and advancement in my professional organizations.

22:39 NOTABLE COLLEAGUES

Douglas Silver:

Do you recall any significant experiences working with colleagues that you can share?

Ta Li:

There are a lot; but I'll try to do a couple here. Although I didn't recognize it at the time, working for SME Executive Director, Claude Crowley, greatly impacted me throughout my career. His greatest tenet was, "Everybody is working on their own problem. If it looks like they're helping you, you need to reexamine what their motives may be." Many of my peer professionals thank me for this perspective, as it made their progression a much smoother experience.

Another deal in marketing and relationship building was the South African Minerals Attaché, Barry Hornabrook, in New York. He really liked our company's shaft sinking technology. Every time he brought a group over from South Africa, we would give him the VIP treatment at our coal mine in Alabama. So, in return for our courtesies, he asked me that during Mine Expo in Las Vegas in 1982, that the Minister of Mines in South Africa wants to thank you for all courtesies and invite you to dinner during Mine Expo. And, I said, "Well, there's a protocol here. I can't really go with the minister when my president should be the one to attend." He responded, "Well, the minister is not asking him to go. He's asking you." And, I said, "Yeah, but how would it look, if I'm going with him." Barry put it at the end, and he said, "Do you want to go or don't you want to go?" I said, "All right." I said, "I'll go, because I want to go. I also added Barry if he would you do me a favor and invite the minister to dinner on behalf of Thyssen Mining and have dinner with our president the night before." And, he says, "I'll ask, but that doesn't happen." And so, he passed on the invitation, and, surprisingly, he accepted.

The event was held at the dinner show at the Las Vegas Hilton with our president. The directors of Thyssen in Germany came and couldn't believe they were having dinner with the South African Minister of Mines. After the show, they drank in the Thyssen hospitality suite until four in the morning and furthered their relationship based on this meeting. Well, surprisingly, the Minister of Mines at that time was none other than Frederic DeKerk, who was the president of South Africa. So, it's a memory that'll stay with me.

The other experience I mentioned earlier was with you, Doug, in doing the reverse takeover and becoming a VSE company within three to four months. Another experience was with Rick Tinsley on co-authoring the deep ocean and offshore mining issue, which I talked about earlier. A final experience, which was the largest job we ever won, was with Rick Lambert at Washington Group on contract mining for the San Cristobal zinc-silver operation in Bolivia. That was a business development relationship spanning over seven years. And, we finally closed the deal in 2003, after Washington Group's bankruptcy.

26:53 AWARDS & RECOGNITION

Douglas Silver:

You've done a lot of big things in your life. What were some of the awards that you achieved in doing this career?

Ta Li:

Well, in the business sense, at Washington Group and their mining division, I won four different contract mining jobs from 2003 to 2006, totaling an estimated \$350 million. I'm very proud of leading these efforts and was recognized alongside with the proposal team members with four consecutive Lion Awards for marketing/business development captures for the company. These jobs were for Metallica Resources, Apex Silver Mine, Glamis Gold mining and stripping work, and Arch Coal top soil removal in the Powder River Basin, Wyoming. Another honor was being awarded honorary life member for the Colorado and the New York local sections of SME.

Douglas Silver:

And, are there any awards that you're particularly proud of?

Ta Li:

Funny, they're all AIME based. In 1991, I actually won this SME Distinguished Member, which now I guess is called the SME Fellow. And, I'm still proud of the AIME Honorary Membership. Finally, I received AIME's William Lawrence Saunders medal in 2021.

Douglas Silver:

Of the many awards you won, were there any that were totally unexpected?

Ta Li:

There were several recognitions that surprised me. Early in my career in 1982, I was notified I was a designated a Kentucky Colonel, nominated by a peer group of mining professionals. [And,] in 1987, the Northwest Mining's Starters Award, which I mentioned earlier. The third unexpected recognition was the Elko Convention & Visitors Authority, for organizing and chairing the Intermountain Mining and Processing Operator's Conference, which was co-sponsored with Northwest Nevada and Utah Mining Associations in 1989. The highlight of that meeting was the president's forum with CEOs from Newmont, Barrick, Freeport, Pegasus Gold, and Kennecott Copper on a Saturday morning in Elko, Nevada. I mean, it was truly remarkable. There was over a thousand people at that session in the Elko Convention Center.

At the Canadian Institute of Mining and Metallurgy Annual Meeting, Washington Group won the best exhibit and booth in Edmonton and Toronto. Another surprise was the St. Barbara's Day statue given by the Denver Gold Group, Colorado Mining Association, and SME. Interestingly, the SME New York Section Honorary Member was not given just to me but to my spouse. It was the first time I've ever heard of somebody doing that. I was very proud of my wife and myself at this event. Finally, in 2021, the president of AIME named me his Presidential Citation recipient, which was a total surprise.

Douglas Silver:

No doubt your wife, Tu, got the award because she knows more people in the mining business than you do.

Ta Li:

They tend to remember her more, for some reason.

30:16 WHAT? NO PROFESSIONAL ENGINEERING LICENSE?

Douglas Silver:

You've worked in all these different areas in the mining. Why didn't you ever pursue a PE license?

Ta Li:

It's kind of weird. It may sound like I'm just skirting the issue, but PE licenses exist to protect the public and certify minimum technology knowledge in one's specialty. While working on the mining/minerals national PE exam, I had access to actual exams administered by NCEE, and, again, after the working party was finished, the NCEE asked for my state and registration number. I mentioned that I was an SME staff member and wasn't registered. And, because I had these accesses to the exams, NCEE made a ruling that I was not eligible to register for a ten-year period. So, after ten years, and working in marketing, sales, I may have lost interest, anyway.

31:22 CAREER TENETS TO LIVE BY

Douglas Silver:

You've served as a senior executive in many different types of companies. What are some of the major tenets that you live by?

Ta Li:

Again, and most importantly, is to remember everybody is working their own problem first. If it seems like they're working on your problem, sit back and consider what's the motive, and what's the real problem. I've found that you'll get a lot more accomplished by following this tenet.

Also, hire good people, comply with industry standards, set the bar, and always have a plan, including agendas or scheduled milestones; keep people informed on what's going on, and be open to good and better ideas from young marketing people. A great example of that is, in 2016, the last Mine Expo, I asked our young marketing staff, "At this meeting we're competing with Caterpillar, all the big companies that exhibit there. With a limited budget, how do we make a similar impact to our customers with a far smaller budget, and how would you execute that?" These young people were absolutely amazing. They came back to me a week later, and they said, "You would identify your top 10 best prospects. At the meeting, attendees come in Saturday, goof off Sunday, and go to the show Monday, Tuesday, Wednesday." Our junior staff explained, "Take those people on a helicopter ride and, basically, pick them up on Sunday morning. Have one sales representative per helicopter, and you would fly to the Hoover Dam on the way. When you get there, start pointing to the dam saying, 'Well, your company was involved in this and did that.' They'll land at the bottom, have lunch, and then take them back another way, with further aerial sightseeing. As a result, tell me they won't be talking about that helicopter trip to everybody they meet during the show." Well, you know, my mouth was open. My eyes were open. I said, "You did it." I said, "That's an amazing program."

34:23 PERSPECTIVES ON DIVERSITY IN THE MINING INDUSTRY

Douglas Silver:

As you know, today, there's a great deal of talk about diversity in the working population. And, you, of course, have had the opportunity to spend a life dealing with that. What's been your experience with diversity in the mining industry?

Ta Li:

Well, early on, I thought being an Asian-American would be a disadvantage, but that's only if I went into traditional fields: engineering, science, and those kinds of things. Being in the marketing sales sector, there aren't any Asians. And, basically, it was actually an advantage, and people would remember me longer than other people that were there. So, that's how it became an advantage. For diversity, when I showed up at Kennecott, I found myself in the drill and blast department. It turns out that the drill and blast jobs were the worst assignments in early open pit mining. Then modern rotary drills came, and all of a sudden it became the best job, because now they're in climate conditioned and relatively dust-free cabs. Also, having senior seniority for all those years, so nobody could bump them off it. And so, there was how diversity benefits the diverse people.

Most of my jobs were in nontraditional Asian roles; the people that I visited had no preconceived stereotype of me when I showed up in the door. In fact, they wondered what the hell was I doing here? So, I think that was an advantage. Women in mining was long overdue. It's great to see women taking prominent roles in our business, and we're really the better for it.

36:29 INTRODUCTION TO AIME

Douglas Silver:

Let's just back up a little bit. When did you first learn about AIME?

Ta Li:

Again, during high school, "Careers in Mining" brochure from AIME gave me a list of schools and provided significant background information on the fields, which I used to my advantage in college interviews. Upon entry into my first year at Columbia, I immediately joined as a student member and had access to the New York Section meetings where a lot of mining companies were located. Also, in those early years, 1964-69, AIME annual meetings were in New York City every other year. So, we got to go to a lot of them and meet a lot of people. And, because the drinking age was 18, we drank a lot, too. So, fifty or so years later, I'm proud to be a member of AIME, which is celebrating their 150th anniversary this year.

37:35 THE IMPORTANCE OF NETWORKING DURING CONFERENCES & TRADE SHOWS

Douglas Silver:

You have probably been to more conferences than anybody I've ever met. So, can you share your views or your opinions about what you see or have learned about presentations and execution and opportunities to network?

Ta Li:

All the meetings that I attended are actually very different and are usually cold environments for attendees, especially young engineers. Equipment trade shows and exhibits are wonderful events with manufacturers introducing and displaying their wares. Other conferences are organized for specific audiences and, rather amazingly, there's little crossover between them, except for the marketing and sales personnel: SME versus NMA, Northwest Mining, National Mining Association. After years of participation in great cross sections and meetings, I've always focused on the networking aspect. My advice to all young engineers that go to these meetings, move around as much as you can and collect business cards. Understand that, as attendees, they didn't come to the meeting to see you, but, surprisingly, when you follow up, they'll be very open and very receptive to you and business discussions. That's what I found throughout my career.

Technical presentations at these meetings are important, and, early in my career, I learned that you can always read the paper at another time, unless the subject is of considerable interest where you'd need further discussion. Going to technical presentations, in my opinion, as a sales/marketing [person], wasn't the best use of my time. Focusing on networking and relationship building is reemphasized when you consider how much it would cost if you visited each contact individually.

39:46 WHY JOIN SME?

Douglas Silver:

If you were to recommend SME to a new graduate, what would you tell him or her about?

Ta Li:

It's your principle professional organization for the mineral industries. As such, you get out of it what you put in. Don't rely on your company to send you at their expense to all professional meetings, show some initiative. And, always remind yourself, how much did you spend on your own professional development with your own funds?

As a member, significant opportunities will open to add to your knowledge as well as expand your contact network. And, you'll never know who you meet and how it may affect your career path. An example, in 1972, I met the editor of Engineering & Mining Journal. And, all of a sudden, I was a publications guy.

Listen to and read their technical papers and professional journals. You can also improve your public speaking and management skills by attendance and participation. And, ultimately, what I did was organize conferences and learn how to run meetings, A great skill.

41:06 INTERESTING YOUNG PEOPLE IN A MINING CAREER

Douglas Silver

What do you think we can do to attract young people to this business?

Ta Li:

Ever since I got out of college, it's the same old question. I think first you must make yourself a personal commitment to market and sell our industry from our own experiences and why we love the mining business. Efforts should be coordinated with local sections to visit high schools, speaking about careers and mining. While many young people, typically, have no idea of what comes from minerals, your own experience is the best testament to that career in mining. Get career brochures to support your effort, but they never substitute for actual experience. Finally, I volunteer with local and regional colleges and mining schools for career enlightenment and participate in their alumni interview process. After my first job, I went to about ten high schools in the Salt Lake area. And then, if they applied to Columbia, I helped with the entrance interviews.

42:25 CRYSTAL BALL GAZING – THE MINING INDUSTRY IN TWENTY YEARS

Douglas Silver:

Looking into the future, where do you see the mining industry twenty years from now?

Ta Li:

You've opened everything up for me, you know. First, there will be even fewer people to do scale up production at mining operations. There will be greater diversity in the management and operation of mines, including engineering, operations, governmental and environmental impacts. There will be advanced mill and processing, automation, resulting in improved reliabilities and recoveries. The other big thing is that the industry will better understand and utilize big data models. We'll see more electric battery applications that may lessen global warming impacts, and ESG management will become prominent for social compatibility with local communities.

43:21 PUBLIC MISCONCEPTIONS ABOUT THE MINING INDUSTRY

Douglas Silver:

You and I have had a lot of discussions about this, but are there any misconceptions that you repeatedly see about the industry that you would like to see changed?

Ta Li:

To the general public mining is essentially a smokestack business that contributes to global warming and adverse environmental impacts. Our businesses have really come a long way to mitigate pollution. Another misconception is industry always says we're talking to ourselves. Well, we're not really talking to ourselves, and, if we are listening, we are not hearing ourselves. We need to change that. Finally, there is the tendency to pass on or delegate to others the need to recruit and sustain our professionals for this industry.

44:13 WORK/LIFE BALANCE – A JUGGLING ACT

Douglas Silver:

How would you rate your work/life balance during your career?

Ta Li:

Well, you have to first understand that fifty years ago, work/life balance was not a significant consideration. Initially work was the center of the universe. Being a workaholic was part of the early career, and family was next. I didn't spend a lot of time with my family, especially in the early consulting years. I worked around the clock, juggling between office and my society commitments. Amazingly, I didn't go on vacation either. I always took time at meetings and took extended vacations with my family. As my son left for college, I wondered if I should have spent more time with him. After learning to delegate responsibilities, I improved the balance. At Washington Group, I learned that the quality of life was much better with a balance between family and work. Amazingly, work productivity also improved. As a result, I'm working smarter and becoming better.

Douglas Silver:

But, at the time you were starting a career, the long hours were required to get yourself established, right?

Ta Li:

Yeah. But by working smarter, maybe I could have done the same thing. If you're born with it, you'll always

have it.

45:42 A PASSION FOR THE MINING INDUSTRY

Douglas Silver:

How did you develop such a passion and drive for working in the mining industry?

Ta Li:

A lot of factors, which I've previously mentioned, the AIME careers brochure ignited my interests; my summer jobs in the underground zinc mine were experiences that made me want to do more. The crappy salaries were, at that time, buffered with the backdrop of "You've got to love it to mine it." And, certainly, you don't go into mining for the money, at least early in your career in the 1960s. "The Romance of Mining" was an early publication by T.A. Rickard, who as an executive director of AIME, strongly reinforced the passion. And again, mining is "the only business you start at the top and work your way down" was a colorful expression, that power to drive for excellence.

46:48 KEY ATTRIBUTES TO SUCCESS

Douglas Silver:

What attributes of yours do you think contributed the most to your success?

Ta Li:

I believe it was procuring and sustaining large contact networks at all levels of people. It goes together with hard work. With hard work and learning from my mentors, good things happen. Doing this also translates into being luckier. Plan and write communications well. Again, surround yourself with good people, and always have a sense of urgency in everything you do.

47:28 MOST NOTABLE CAREER ACCOMPLISHMENTS

Douglas Silver:

When we look back at our long careers, we, we've done a lot of things. And, the question is, if you had to shortlist, what career accomplishments are you most proud of?

Ta Li:

Not necessarily in the order of importance, but I thought my role in co-founding the Denver Gold Group with you and others and that the organization became a leading precious metals forum in the global marketplace was a tremendous achievement. I'm also proud of my contributions to returning the Northwest Mining Association, now American Exploration & Mining Society, back to prominence as a premier mining organization. I thought my time at publications reestablished Mining Engineering as a leading publication with in-house editorial content and staff written feature articles, which thus became a worthy competitor to the other peer trade journals. We had the expertise in house to report on trends and operations. I believed that my contributions to SME's working party on getting mining/minerals engineering on the national exam, which facilitated reciprocity of our PEs in over 22 states was an achievement. Sustaining SMEs global market position by completing cooperation agreements with China, Venezuela, Australia, and the Philippines was notable.

And, finally, restoring Washington Group's leadership in the contract mining business by contributing over \$350 million backlog after the company went through a Chapter 11 bankruptcy environment.

49:27 FINAL THOUGHTS

Douglas Silver:

Well, thank you very much, Ta, for sharing your life with us. And, as we close, the final question is the floor is yours; would there be anything else you'd like to say?

Ta Li:

Choosing a career in the minerals industry has given me opportunities to travel, participate in professional organizations, and contribute to the success of the many mining groups. Also, I received my share of industry recognition from my peer groups. Many of the diverse turns in career operations, engineering, editorial publications happened because of the many contacts made in the business through trade shows and other professional society gatherings. Doug, thank you for taking the time to do this interview. I appreciate the opportunity from AIME to reflect on my career; it's really been a most satisfying career.