



Sixty-Ninth ANNUAL CONVENTION

**Phoenix Civic Plaza
March 12-13, 1990**

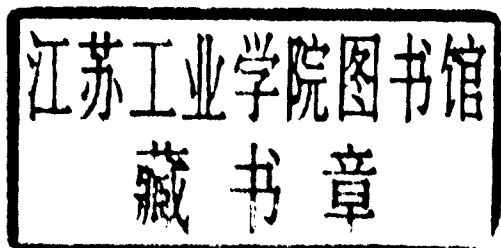
PROCEEDINGS

Meeting Papers of Gas Processors Association



Sixty-Ninth ANNUAL CONVENTION

PROCEEDINGS



**Gas
Processors
Association**

6526 East 60th St., Tulsa, Okla. 74145

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J. R. Walsh, Conoco Inc.	Houston
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Opening General Session

PRESIDENT W. J. CEPICA
*Union Texas Petroleum
Houston, Texas*

Welcome to this 69th Annual GPA Convention.

We are all anxious to hear our distinguished speakers, Senator Goldwater and Mr. Steigmeir, and we will make the preliminaries of this session as brief as possible. However, I do want to take a few minutes of your time to provide a brief update on the state of the industry and the association, and to flag some of the important issues that are facing us today.

I am pleased to report to you that GPA and the industry appears to have turned the corner in 1989, following the disastrous years of 1987 and 1988, when the entire petroleum industry was in a state of deep shock over \$10 crude oil. As we all know, these and related events precipitated unsettling consolidations, mergers, reorganizations and drastic cutbacks.

One good sign of possible recovery is the fact that GPA membership is now on the increase, following two years of drastic decline. Many of our new member companies are new entrants into gas processing, which suggests that industry conditions may be improving, and may even be better than we believe them to be.

In any event, GPA enters 1990 fiscally sound, with our research programs and other functions back on the fast track. It is a fact, of course, that corporate reorganizations and cutbacks have reduced the total number of people participating in GPA committees, but the quality and dedication of our committee leadership and participation has never been higher.

Some of the more prominent issues that GPA and the industry will be facing in the immediate future include adaptation to the reduction of motor gasoline volatility, which became effective in June 1989.

In addition, we continue to investigate the technology of odorization, which has embroiled a broad segment of the industry, including GPA, in litigation. GPA sponsored the first symposium

on LP-gas odorization in April 1989, which was the first concise summary of our current state of knowledge. Continued GPA research, we believe, will provide additional answers and insight before the end of 1990.

A new issue is that of alternate fuels. GPA is deeply involved in this issue. We are attempting to ensure a level playing field in federal legislation and regulations, and to further ensure proper recognition and consideration of LP-gas as an environmentally sound alternate motor fuel. We believe we have made significant strides, but this is a complex issue which will require additional efforts far beyond anything GPA has ever attempted.

The proliferation of other environmental legislation and regulations have prompted a GPA attempt to quantify and summarize regulatory requirements pertinent to the petroleum and gas processing industries. This will be a monumental effort to develop, and an even more difficult chore to keep up to date, but it should be a significant service to gas plant operators.

Other committees continue their traditional industry services in product specifications, analysis, plant design and operations, computer applications, statistics, safety and continuing oversight of a multitude of state and federal regulatory and legislative developments.

We go into 1990 with a reprieve from the recent past and a new vitality for the challenges ahead. Whatever the immediate future might bring, we can be sure of one thing: today's corporate survivors will be meaner, tougher, leaner, and better equipped to cope with the uncertainties that lie ahead.

Presentation of the Hanlon Award

BILL CEPICA
GPA President

We come now to what is perhaps the most gratifying privilege of the GPA President: The presentation of the GPA Hanlon Award.

The Hanlon Award is the gas processing industry's highest honor. It was established in 1937 by the late E. I. Hanlon, who was a gas processing pioneer in West Virginia, founder of the Hanlon companies in the Mid-Continent, and former Chairman of the Board of the National Bank of Tulsa.

Our 1990 honoree will be the 54th recipient of this high honor. He joins a distinguished list of prior recipients whose names are prominently identified with progress in the gas processing industry. These prior recipients include a broad variety of business leaders, engineers, researchers, educators and others who have played vital roles in the development and advancement of the gas processing industry and its technology.

Our 1990 recipient might best be called "Mr. Gas Processor", who typifies the aggressive and innovative leadership that is essential in today's gas processing industry. He is the industry's most vocal, most energetic, and most persistent spokesman for the advancement of our industry.

He received the B.S. Degree in Petroleum and Natural Gas Engineering from Texas A&I University in 1950, and was honored with the University's Distinguished Alumnus Award in 1976.

He began his gas engineering career with the Waxahachie Gas Company in 1950, became measurement engineer for Texas Eastern Transmission Corp. in 1953, and joined Tenneco Oil Company in 1956, where he became manager of engineering development. During his eight year hitch with Tenneco he coped with the difficulties of design and construction of 3-phase gathering systems, particularly in Canada. He was instrumental in the design

and construction of a 250 mile raw mix pipeline and a 40,000 barrel per day fractionator at La Porte. Under his direction, Tenneco was to construct or expand seven gas processing plants in the 1960's.

He joined Mitchell Energy & Development Corporation in 1974 as Vice President of Gas Processing. In this capacity he led the gas processing industry in the development and utilization of the skid mounted turbo expander gas processing plant. Under his leadership, Mitchell constructed or expanded 55 gas processing plants over the next 10 years. His current responsibilities include operation of 57 gas processing plants, interests in 2 plants operated by others, joint ownership of an 80,000 barrel per day fractionator, 3,700 miles of gas transmission lines, and marketing of Mitchell's crude oil, natural gas and natural gas liquids.

Along with his accomplishments as an industry leader, he has also been a forceful and effective leader in GPA activities. He served as Vice Chairman and Chairman of GPA Technical Section H, Vice Chairman and Chairman of the Technical Committee, and as Vice President and President-Elect of GPA, and service as GPA President in 1983-1984.

In addition, his contributions to the engineering profession, his University, and his community include active participation on numerous working committees and boards.

It has been said by more than one of his friends and associates that he is one of a kind. Our industry is fortunate to have his aggressive and innovative leadership and I know you will share my pride and delight in joining me in this presentation of the 1990 GPA Hanlon Award to the President of Mitchell Energy's Transmission and Processing Division, Bruce Withers. ■



Bruce Withers (right) receives the Hanlon Award from GPA President Bill Cepica.

Hanlon Award Response

BRUCE WITHERS

Mitchell Energy Corp.

Mr. President, Members of the GPA Board of Directors, Honored Guests at this table, Ladies and Gentlemen:

At this moment, I find myself in one of those rare situations where I am almost at a loss for words. For many of you out there today who know me so well, I know you'll find this hard to believe.

Truthfully, I have finally recovered from the sheer state of shock and surprise encountered when I first found out that I was to receive this prestigious award. Shortly afterward, I received a call of congratulations from Ron Cannon (a former recipient of the Hanlon Award) and during our conversation I asked him "what did you talk about when you received your award?" He was very helpful and after some hesitation he told me that he talked about 5 to 6 minutes. I knew better because he can't talk about anything in less than 10 minutes!

Seriously though, I can think of no greater honor that could mean as much to any person, than that bestowed upon him by the very people who mean so much, and are respected so much by that person. That is certainly true for me here today. Most of my professional life has been dedicated to the Gas Processing business through boom and bust, good times and bad, and I must say that this moment is indeed a high point in my career, and I am deeply honored because the GPA means so much to me. I belong to and attend several other industry associations and professional organizations, but I can truthfully say to you that the many friendships and relationships developed through the GPA have been more meaningful to me than all the others combined. There is something about you . . . that seems special to me.

It has been said that "adversity brings people together", and if that is the case we should be about the tightest-knit group of people on the face of this earth. Because it sure has been "Adverse" lately but it's going to get better. I believe and I predict that the decade of the 90's will be good for our Gas Processing Industry – wait and see!

For a lot of years now, I've been attending these Annual GPA Conventions and watching the Hanlon Award Presented to many of my friends. Each year (as the award was being presented) I thought to myself, what a wonderful honor and meaningful tribute to be honored by your friends. Each time, I shared a warm sense of pride with my friends and sometimes I even shed a tear of joy with some of them.

Never in my fondest imagination, did I ever dream that such an honor could happen to me.

As a matter of fact, you honored me greatly in 1983, when you elected me your President. I'm sure that all you "Past Presidents" will agree that being president of such a Prestigious National Organization as the Gas Processors Association is quite an honor, as well as quite a responsibility.

Anyway, I thought I had peaked out in 1983 with the GPA and, was very proud and happy for the opportunity to serve as your President and planned to just fade back, not away!

There is a saying in Proverbs 15:33 . . . "Fear of the Lord is the instruction of wisdom and Before Honour is Humility".

Today as I accept this Hanlon Award, I do so not only with my sincerest and heartfelt gratitude but also with a deep sense of

humility because I know that there were several other recommended candidates, any one of whom was just as deserving as I. Therefore, I feel that this really is a very special privilege for me to receive this award, and I am truly grateful.

I know that I can't begin to thank all of those who had a part in making this happen for me, and for fear of leaving someone out, I almost hesitate to mention any individual names but feel I must. First, I want to express my appreciation to the GPA Awards Committee (where it all begins) for their consideration, confidence and support. Without them, I wouldn't be standing here before you today. My special thanks also to GPA President Bill Cepica and the Executive Board for their support and kind words. I also appreciate the help of Ron Cannon and his GPA staff in Tulsa. They do a super job! I would certainly be remiss if I didn't express my sincerest gratitude to all of my "Gas Processing Team" at Mitchell Energy for their many years of dedication, hard work and loyal support. As you saw earlier, their safety record over the past years has been outstanding. Allen Tarbutton, who most of you know, heads up this exceptional group, my sincere thanks to you Allen and all our team.

I could not conclude my remarks without expressing my sincere appreciation to a very special lady here today who has helped me so much and meant so much to me over the years. That special lady is my beloved wife, Ruby. Without her patience, understanding, and love, I would not have made it this far. I'm sure if you ask her, she will admit that I tested this patience and understanding a few times. Thank you very much honey, for putting up with me all these years. You certainly deserve a part of this award today and I share it with you now.

I am privileged and very proud to have my one and only daughter Robin here with us today. Needless to say, she is my pride and joy, and the best thing that's happened in my life since I met and married her Mother. Thank you sweetheart for taking the day off to fly out here and share these special moments with me, and thanks for all the joy you've brought to my life over the years.

You are all familiar with the saying, "Last but not least". Well, the last person I want to say a special word of "thanks" to is by no means the least important to me, her contribution to my business career has been tremendous. She is the one that makes sure that I am at the right place, at the right time, and most of the time even on the right day. I would like to express my special appreciation right now to my devoted secretary for the past 14 years, Mrs. Colleen Broyles, better known as "Colly" for her loyalty, devotion, friendship and tremendous help to me over these years. Thanks Colly, I don't know what I'd do without you.

In conclusion, I want to express my gratitude to each and every one of my friends and associates in this audience today for *just being here* to share this honor with me.

Although the words seem so inadequate to express my true and deep feelings, let me say them again.

Thank you very much, you have honored me greatly and I will cherish this day and this honor always.

God Bless you all. ■

Presentation of the Donald L. Katz Award

BILL CEPICA
President

The Donald L. Katz Award was initiated in 1985 to acknowledge among other things, our industry's considerable debt to Dr. Katz, who was an outstanding research leader in natural gas, and Professor of Chemical Engineering at the University of Michigan. We regret to report that Dr. Katz died in May of last year. The award is designed as a recognition of "Outstanding accomplishments in gas processing research and technology, and for excellence in engineering education", which provides us an opportunity to recognize the academic community that has provided virtually all of the research and the technological leaders for the gas processing industry.

The recipient of the 1990 Katz Award was a visionary in 1937 when he began to establish the first, and currently the most outstanding gas engineering school, in the country. It is a terrible disappointment for us, and I know for many of you, that Dr. Frank Dotterweich cannot be with us to accept this Katz Award. But in his absence, it is appropriate that the Award be accepted for Dr. Dotterweich by a former student, neighbor, a former member of the Texas A&I Board of Regents and our immediate past president, Wayne King.

Some of you may recall that, in 1937, natural gas was largely a waste by-product of crude oil production, largely flared and ig-

nored by the oil industry. This was before the advent of long-distance gas pipelines and the development of significant markets for natural gas, which typically sold for 1-2 cents per mcf into the meager local markets of the day.

His probable vision began to make sense following the war and the tremendous expansion of the nation's gas transmission systems and the opening of major gas markets in the North East, Mid-West, and California markets. By that time his Institution was at the forefront in producing the trained engineers and managers who would be needed to operate the gas transmission systems and processing organizations for the natural gas and gas processing industry. A partial list of his students reads like a Who's Who of the gas processing and natural gas transmission industries. Included are three Presidents of the Gas Processors Association.

Our recipient received a Bachelor of Engineering Degree in 1928 and the PhD in Chemical Engineering in 1937 from John Hopkins University. On graduation, he immediately set upon his lifetime work of establishing the gas engineering curriculum at Texas A&I University. That school and his many students will endure as a monument to his vision and his early faith in the natural gas industry. ■

Katz Award Response

WAYNE KING
Past GPA President

On behalf of Frank Dotterweich I accept the prestigious Donald L. Katz award. Doc regrets that he can't be here today due to a recent hospital stay, but I can say that I talked with Doc a couple of days ago, and can report that he is currently at home and as fit as any other professor who turned 84 last January and continues to pursue his life's profession. If Doc were here, I think he would tell you that he is humbled and honored to a group of previous honorees – Donald Katz, Riki Kobayashi, Gant Wilson and others who he knows and holds in the highest regard. He would also tell you there are others more deserving, but in his absence, Wayne King might argue that point.

Let me take a few moments and tell you about the man we are honoring today, a man whom I have known and respected for over 35 years. Doc was born, raised and educated in Baltimore, Maryland. As a young man, he was a world class athlete being named to the All-American LaCrosse team in 1928 and then later that year representing his country on the Olympic LaCrosse team in Amsterdam. He received his PhD in Chemical Engineering from John Hopkins University in 1937 and moved to Kingsville, Texas, that same year to begin building one of the most outstanding gas engineering schools in the country. Kingsville was a town of less than 10,000 people and Texas A&I had less than 1,000 students.

Doc's work at A&I was interrupted in late 1941 with the attack on Pearl Harbor. Shortly thereafter, Doc found himself in Washington, D.C. working in the Natural Gas and Gasoline Division of the Petroleum Administration for War. He worked with some of the brightest scientists in the world – the likes of Buck Buckcannon, James Edgar Pew, Donald Katz and a Russian, Paul Raigorodsky. Their contribution in developing aviation gasoline, synthetic rubber and explosives kept our military machines rolling. Doc's Washington years just might have been his "finest hour".

Doc's first contact with our Association occurred April 12, 1941, in Dallas, Texas. The Association was then known as the "Natural

Gasoline Association of America", and Doc presented a paper entitled "Useful Products from Natural Gas". I asked Doc if Ron Cannon, our executive director, who most of us feel has been around forever, was in attendance – Doc paused and said "Lad" – he always calls us Lad – "If you want to know if Mr. Cannon was in attendance, you should ask Mr. Cannon." Two years later Doc and Paul Raigorodsky again addressed the association with a paper entitled "War Products from Natural Gas and Gasoline". Then again in 1946, "Trends in Processing Gas Condensate Reservoirs".

Doc has continued to maintain his interest with the Gas Processors over the years, but in my opinion Doc's greatest contribution both to our industry and our Association has been his ability and unending desire to shape young men into industry and association leaders. "Doc's Boys" as he fondly refers to them, read like a list of Industry Who's Who, as Bill Cepica, our President, referred. I would like to take just a second to give you a few of the names that make up Doc's former students:

Norris Crownover – President, Esso Indonesia
Phil Kelley – Vice President/Director, Exxon Production Research
Larry McNeil – Principal, Corpus Christi Oil & Gas Company
Bill Stevens – President, Exxon U.S.A.
Bruce Withers – Division President, Mitchell Energy
Bob Withers – Vice President, Transco Energy
Hank Wright – President & CEO, Amerada Hess

When I spoke with Doc last Friday, I asked him what message I might deliver to the Association on his behalf. He said an old Chinese philosopher once said: "To plan for a year, plant grass; to plan for tens of years, plant trees; to plan for eternity, educate." He said this is exactly why the Association has been so successful, and he congratulates the Association for this great endeavor. He said tell them that he accepts this award not for himself alone, but for all. Thanks. ■

Wayne King (left), Valero Energy Corp., accepts the Katz Award from President Cepica for Frank Dotterweich.



Citations for Service

W. J. CEPICA
GPA President

INTRODUCTION

As most of you know this Presidents' Luncheon has also served as our awards luncheon for many years. With our condensed convention schedule this function becomes more important for several reasons. First, we have one less general session at which to make these presentations, and second, we have more deserving people whose principal compensation is this peer recognition and the satisfaction they may have derived from serving the industry and GPA.

In any case, it is an important function of this session to recognize those who have made outstanding contributions to the advancement of the gas processing.

The first of these recognitions is what we call the Citation for Service. These are presented each year to just a few of the many people who have contributed outstanding leadership, time, talent, counsel and resources to the gas processing industry, usually through the Association and its committee organization.

LEE

The first recipient for the 1990 Citation for Service received the B.S. Degree in Chemical Engineering from Seoul National University, Korea in 1961. He received the Masters Degree in 1968 and a PhD in Chemical Engineering 1971, both from Oklahoma State University. He joined Mobil Research & Development Corp. in 1973 as a Technical Data Specialist, and has become one of the industry's most authoritative and widely recognized authorities in the science of thermodynamic behavior of natural gas and petroleum fractions.

He has shared his expertise with the industry through his tireless and effective work on the API Technical Data Committee and as a leading member of the GPA Enthalpy Steering Committee.

He is a co-author of a leading text on applied hydrocarbon thermodynamics and is also co-author of a generalized thermodynamics corresponding state correlation, which has been adopted as a standard method in the API Technical Data Book.

It is impossible to describe the significance of his contributions to the technology of petroleum and natural gas processing, and I ask that you join me in this modest expression of our appreciation to Dr. B. I. Lee, Mobil Research and Development Corporation.

WHEELER

Our next recipient of the Citation for Service is one of the engineering products of Dr. Dotterweich and Texas A&I. He received the Bachelor of Science Degree in Chemical Engineering in 1950. After brief tours with Tennessee Gas Transmission Corp. and the U.S. Army, he joined the Chicago Corporation as a plant engineer. He remained with that organization through mergers with Champlin and Union Pacific until his retirement in 1989. His responsibilities ranged from process engineer to gas plant superintendent to regional manager for natural gas operations in Union Pacific Rocky Mountain Division.

Throughout most of his career, he has been extremely active in GPA affairs, laboring in the trenches of Regional Program Committees, as long-time Chairman of Technical Section A on Plant Design, and as a member of the Convention Program Committee for more years than we can document. He served as Convention Program Chairman 1988.

His long service to GPA and the gas processing industry is typical of the work of literally hundreds in the gas processing community: Unobtrusive, unsung, but certainly not unappreciated. Therefore I ask you to join me in this recognition of the long service of Joe Wheeler, recently retired natural gas operations manager for Union Pacific Resources.

PRICE-THURMAN

Next honoree came on the natural gas and gas processing scene later than most of us, but provided GPA Legislative and Regulatory activities a broad background in environmental engineering, lobbying and the Washington scene, and in Legislative and Regulatory policy development. Our honoree received a Bachelors Degree in Education and Chemistry in 1966 from the University of Evansville, and the Master of Arts Degree in Chemistry from the University of Chicago in 1968. This was followed by a Masters Degree in Management from Purdue University in 1977.

She joined Phillips Petroleum Co. in 1977 and advanced through a number of increasingly responsible positions including Senior Environmental Engineer, Federal Regulations Representative in Washington, and from 1985 through 1989 as Vice-President and Manager of the Laws and Regulations Division of Phillips 66 Natural Gas Co. In this position, she also served as Chairman of the GPA Legislative and Regulatory Activity Committee from 1987 to 1989.

In this service to GPA, her unique talents for organization, motivation, and the ability to focus the committee's efforts on critical issues provided our Legislative and Regulatory activities with much needed direction.

GPA and the gas processing industry continue to benefit from her brief but extremely effective chairmanship of the Legislative and Regulatory Affairs Committee, and I ask that you join me in this recognition of the Manager of Corporate Environmental Services for Phillips Petroleum Co., Barbara Price-Thurman.

WARD

The last recipient of the 1990 Citation for Service received the Bachelor Science Degree in Chemical Engineering from Rice University in 1959 and joined Brown & Root shortly thereafter. His 30 years of engineering experience in the petroleum, chemical and petrochemical industries includes 13 years of process engineering and some 18 years of engineering management experience in a broad range of projects. He is one of the industry's leading experts in the technical aspects of project engineering and hydrocarbon processing.

His services to the petroleum industry as an engineering manager has been expanded to include significant personal service and leadership to virtually every related technical organization, including the American Institute of Chemical Engineers, National Association of Corrosion Engineers and the Board of Rice Engineering Alumni. His specific services to gas processing include significant contributions to at least three editions of the Engineering Data Book, and as Director, Vice President and President of the Gas Processors Suppliers Association in 1988-1989. In his leadership position with GPSA, he was a moving force in the acquisition of the current GPA/GPSA office quarters.

Our industry is indeed fortunate to have available the expertise, experience, talents and integrity of this recipient, and I ask that you join me in this presentation of the 1990 Citation for Service to the Vice-President of Technology for Brown & Root, Julian Ward.



Alan Silverman (left) accepts the Citation for Service for B. I. Lee from Bill Cepica.



Joe Wheeler (left) receives the Citation for Service from Bill Cepica.



Barbara Price-Thurman (left) receives the Citation for Service from Bill Cepica.



Julian Ward (right) receives the Citation for Service from Bill Cepica.

Ted Davis accepts the Division I First Place Safety Flag from President Cepica for Conoco Inc.



Allen Tarbutton accepts the Division II First Place Safety Flag from President Cepica for Mitchell Energy.





Bill Caswell accepts the International Division II First Place Safety Flag from President King for Westcoast Energy.



Ken Self (left) and Kenneth Butler (center) accept the Division III First Place Safety Flag from President Cepica for Meridian Oil.