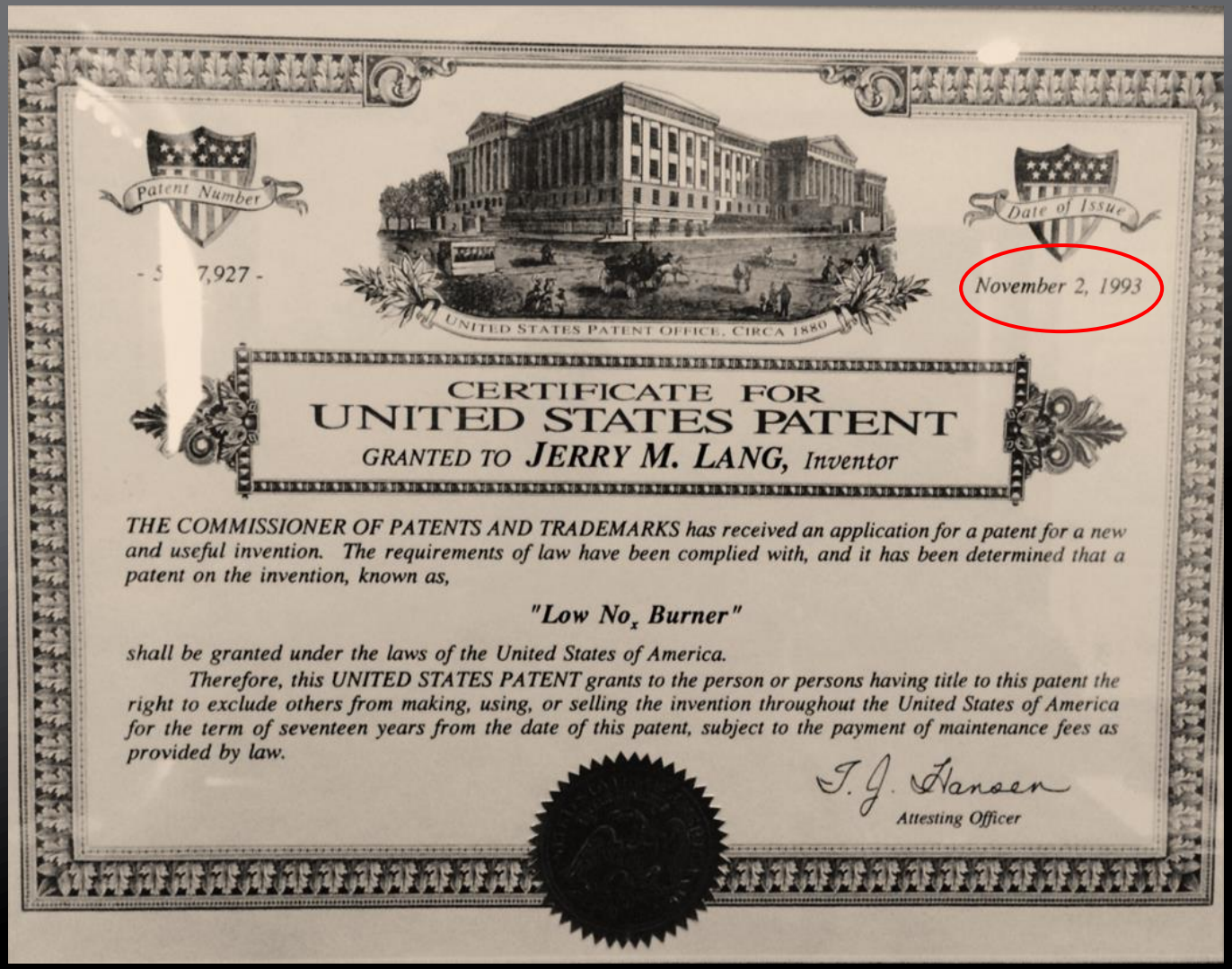
WELCOME TO

JLCC, Incorporated
COMBUSTION & EMISSIONS

Defining the Art of Combustion

IN ORDER FOR YOU TO SEE TRUE VALUE JLCC OFFERS, WE WOULD LIKE FOR YOU TO UNDERSTAND A LITTLE ABOUT OUR BACKGROUND.



JLCC was founded by long-time Combustion Pioneer Jerry Lang

A PYRO IS BORN

In 1954 young Jerry decided to use drip gas from the oil field in a 1931 Chevy.

The problem was, the car didn't run very good and sounded terrible while using the drip gas.

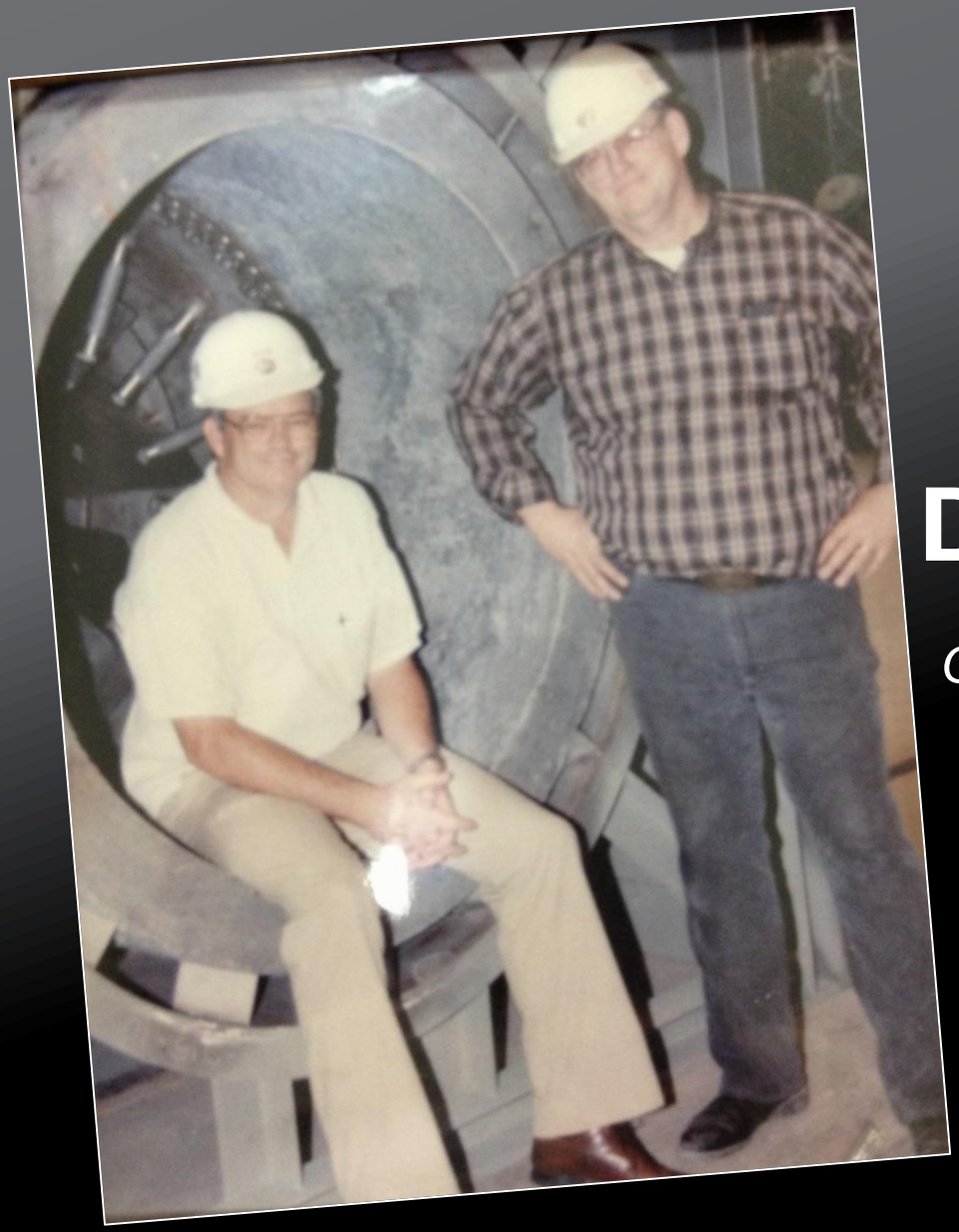
With a little input from his uncle, Jerry added a valve and recirculated exhaust gas to clean the combustion of the drip gas.

This improved the operation of the engine drastically and at 14 years old, Jerry's first combustion-related patent was filed for.

(EXHAUST GAS RECIRCULATION)

Years later, Jerry's patent was discovered to lower NOx emissions by one of the largest automobile manufacturers in the U.S and they purchased the patent that is now on most automobiles from the factory.

Throughout his career, Jerry has worked on many projects World-Wide including work with Dr. Edward Teller for years.



DAVE SCOTT

Over 50 Years Experience

Long time engineer and consultant Dave Scott has worked with Jerry for over twenty-five years as an innovative combustion applications designer.

Dave has worked with Jerry to improve efficiencies and lower emissions while also training the younger generation of JLCC team members to do the same.

IN 2014

WE CHANGED OUR LOOK,

BUT STILL HAVE THE SAME

COMBUSTION ***ART***

JLCC, Incorporated

COMBUSTION & EMISSIONS

MARKETS NOW SERVED

MARKETS NOW SERVED

- Petrochemical Refining
  - Chemical Refining
  - Power Generation
  - Food & Beverage

We have served most major refiners and worked in most of the plants here in the US at one time or another.

OUR BUSINESS TODAY

3RS of the Art

- Refurbish
- Retrofit
- Replace

WHAT DO WE DO?

- **COMBUSTION CONSULTING & SERVICE**
- **BURNER REFURBISH**
- **BURNER RETROFIT**
- **BURNER REPLACEMENT**
- **BURNER PARTS**
- **OPERATOR TRAINING**
- **FIRED EFFICIENCY STUDIES**
- **COMBUSTION ENGINE TESTING**
- **M.A.C.T. COMPLIANCE**
- **NEW PRODUCT DEVELOPMENT**

BURNER REFURBISHING

BOILER BURNER REFURBISHING

BURNER BEFORE PULLED FROM BOILER

BURNER REFURBISHED BEFORE SHIPPING BACK TO PLANT

BOILER BURNER REFURBISHING

Since the 1990s plants have been required by air quality regulations to lower NOx emissions in boilers that generate steam in their process as well as heater burners. In most cases, low NOx burners have been installed to accommodate these regulations.

Now, in 2017, we find many burners still in operation and in desperate need of repair or replacement. While most groups only offer new burners as an option which gets into deeper costs including detailed engineering, upgrading controls, and re-permitting. JLCC offers a much different approach. In most cases we can refurbish the existing burner back to its original condition and in many situations, better as far as register operation and lugs, etc. without requiring new permitting or causing other troubling hassles that go along with installing brand new burners and equipment and we are the best in the business at this with over 100 years in combustion art and modifying all brands of burners.

It is not unusual for us to pick up your burner and have it returned in the same week, if not overnight.

BURNERS WE REFURBISH

- OUR OWN
- COEN
- TODD
- JOHN ZINK
- ZURN
- POLLARD
- CALLIDUS
- ZEECO
- B&W
- NORTH AMERICAN

AND MORE…

“WE’VE RE-BUILT THEM ALL”

BURNER RETROFITTING

BURNER RETROFITTING

BOILERS

HEATERS

While the first option we look at is refurbishing an existing burner, in some cases an elevated level of performance is desired by our clients. In these situations we can add to or modify a part of the burner and increase/decrease firing rate to meet new capacity or accept new fuel (i.e. plant gas), increase efficiency, and/or lower NOx and other emissions. We have many different methods and approaches to retrofitting your existing burner to get the performance you seek.

We are known as the Retrofit Kings!

RETROFIT SCENARIO

MODIFED NOZZLES
AND CENTER SECTION

FLAME BEFORE

FLAME AFTER

NOx REDUCTION, EFFICIENCY INCREASE, CAPACITY REACHED

BURNER REPLACEMENT

BURNER REPLACEMENT

Burner Replacement is sometimes the only option to achieve the performance desired and this is mostly when an existing burner is really old and its lifespan is over. Other times, plant expansion and other new equipment or modifications call for entire burner replacement and even control upgrades. We do that too. A benefit of JLCC's custom design capabilities is that many times furnace modifications are not required and we will design a burner to fit your furnace.

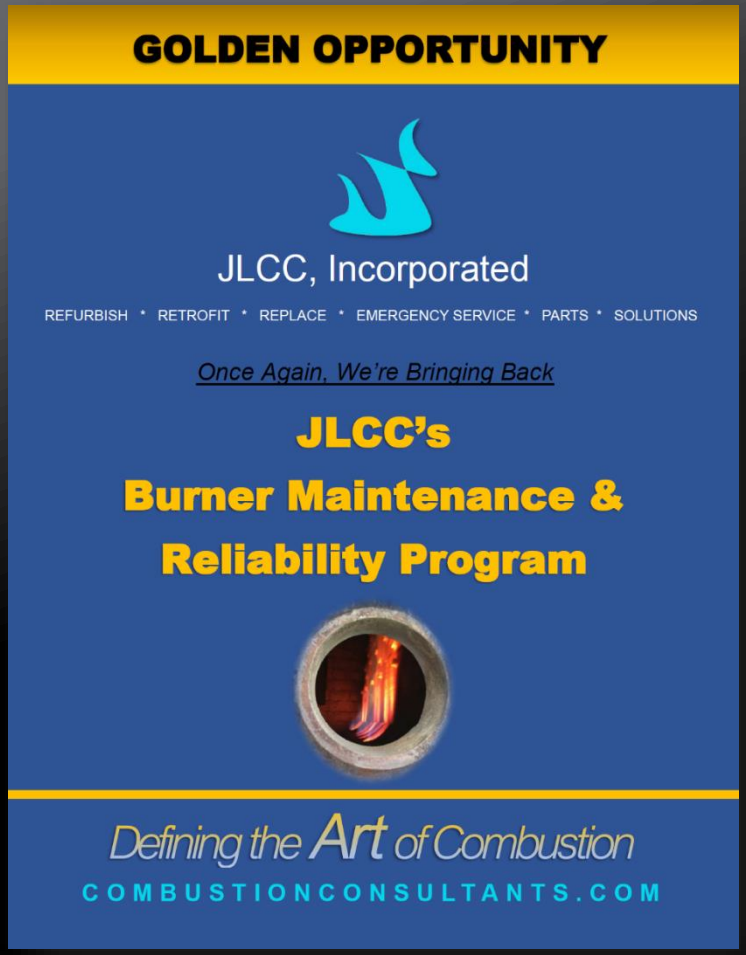
COMBUSTION SERVICES

COMBUSTION SERVICES

JLCC is highly experienced in servicing boiler and heater burners and consulting. Our background allows for us to service almost any burner installed today. We offer Emergency Consulting Services, fast turn-arounds on refurbishing burners in need of repair to get you running again. JLCC's team can come in and inspect burners in boilers and heaters, then report on whether or not they need any work while units are down or on the run. In some cases your team member will accompany our Team member inside the unit and we can point out what we see that may affect operation of a burner or safety.

BURNER MAINTENANCE & RELIABILITY

BURNER MAINTENANCE & RELIABILITY



BURNER MAINTENANCE & RELIABILITY

"GIVE US RESPONSIBILITY OF YOUR COMBUSTION EFFICIENCY PROGRAM"

OUR LONG-TIME EXPERTISE IS ***COMBUSTION***

COMBUSTION TRAINING

COMBUSTION TRAINING

JLCC offers a training program in your facility or ours. We will create an agenda for the program and follow up with an acknowledgement of the course. This course is great for new-hires as well as well as a nice refresher course for those that have been in the industry for a while. We have operators, engineers, maintenance personnel, and even plant management attend our training course.

TESTING / R&D

JLCC, Incorporated
COMBUSTION & EMISSIONS

JLCC, Incorporated
COMBUSTION LABORATORIES

BURNER TESTING

UNDERNEATH OUR
TEST FURANCE

R&D NEW PRODUCTS

JLCC, Incorporated
COMBUSTION & EMISSIONS

COMBUSTION IS OUR BUSINESS

JLCC HAS BEEN A LONG-TIME SUPPORTER, AND PRESENTER AT THE ***AMERICAN FLAME RESEARCH COMMITTEE***

COMBUSTION SOLUTIONS FOR INDUSTRY

JLCC, Incorporated
COMBUSTION & EMISSIONS

Our Difference is Combustion Art

Engineering is defined as the practical application of scientific principles.

Education provides the scientific principles, however the practical application requires a great degree of art.

Art comes from experience and the ability to visualize the problem.

JERRY LANG DELIVERED A PRESENTATION AT 2014 AMERICAN FLAME RESEARCH COUNCIL

“MY 60 YEAR HISTORY OF FUEL DILUTION TECHNOLOGY”.

AFRC 2014 Joint International Combustion Symposium
September 7-10, 2014
Houston, Texas

Sixty Years of Fuel Dilution Technology

Jerry Lang - JLCC, Inc.

Abstract:

The evolution of emission control technology goes back before it was required by regulation. It has been found that innovations in the automotive industry that were applied back into the 1950's have been used in burners and process equipment as regulations have pushed emission requirements lower.

New technology, computer innovation, and modeling brought us into the 21st century.

This paper is one man's viewpoint of how it all ties together.

Jerry Lang, who is retiring this year, tells a small bit of where he started in this industry and where it has gone in the last 60 years as he has experienced its development.

A unique view of how all the technologies tie together.

Background and Overview:

It probably sounds, odd, strange, and unlikely that anyone today could talk about 60 years of fuel or flame dilution technology. Regulations of emissions just do not go back that far, but I do personally. In 1954, I bought a 1931 model Chevy car. During those days gasoline was 15 to 20 cents per gallon, and much of the time, I did not have 15 or 20 cents. I did, however, live in a small oil field town in East Texas. I learned that, if I went out to a producing oil well near our home and cracked open the gas valve to atmosphere, heavy ends would drop out. We called this drip gas although many of you would call it distillate. If I put the drip gas in my car, it would run but the engine would clatter real

JLCC CEO, Brad Smith

“It was surreal to see the entire auditorium of professionals from leading combustion companies give Jerry a standing ovation at the end of his speech. He is a true Pioneer in combustion and everyone who’s anyone in our industry knows it. I am grateful every day that I get to work with Mr. Lang and Mr. Scott and learn from their extensive experience and our unique technology.”

*Defining the **Art** of Combustion*

combustionconsultants.com