

Course Instructor

Attend One or Both!

U.S. NAVY, Submarines - 12 years. •

Honorman U.S. NAVY Instructor's School •

Course Design Specialist, U.S. NAVY •

National Sales Manager, SEALOL •
(Second largest seal company in the world.)

Marketing Specialist, A. W. CHESTERTON •
(Most successful seal conversion program in the world.)

Brown University - Mechanical Engineering •

SAN DIEGO STATE UNIVERSITY - •
B.S. in Learning Psychology



Larry McNally

• GEORGIA TECH - Graduate Studies in Engineering Psychology

• Author of **Seal & Survive**, translated into seven different languages. Over 100,000 copies sold.

• Taught courses and consulted in Pump and Seal problems in 19 countries.

• Taught over 3700 one-day courses that have been attended by over 50,000 people.

• Three patents.

• Author of numerous trade magazine articles.

School Registration Information

HOW TO REGISTER

School Hours: Registration is from 7:30 - 8:00am
Class starts at 8:00am and ends at 4:15pm

You may register in one of the following ways:

Fill out the form below and then:

FAX TO: Techpro AT (770) 822-0580

Fees: Course fee is **\$175.00 per person per day.**

The fee covers the course, course manual, and handouts.
Lunch is not included.

OR YOU CAN MAIL TO:

Techpro - Larry McNally
342 Kings Hill Court

Lawrenceville, Georgia 30045

Federal Tax Identification Number: 58-1181141

Payment: Payment may be made by the following:

- 1.) Mastercard, Visa or American Express
- 2.) Cash or Check
- 3.) Company Purchase Order

You Can Now Register and View Schedules Online at www.techpro.org

REGISTRATION

I wish to enroll the following people: _____

_____ in the course to be held on _____ at _____

Name: _____ Title _____

Company: _____

Mailing Address: _____

City/State/Zip: _____

Telephone: _____ Fax: _____

E-Mail Address: _____

PAYMENT METHOD

Payment Enclosed Will Pay at School Payment Mailed Bill Company (Purchase Order Attached)

Mastercard or Visa # _____ Expiration Date _____

Name on Credit Card _____

PUMP SCHOOL

1. Positive Displacement Pumps. A description of the operation of: progressive cavity pumps, gear pumps, vane pumps, lobe pumps, diaphragm pumps, piston pumps and others. How to tell which type of pump is used where. How to prevent the most common problems on these types of pumps.

2. How Centrifugal Pumps work. How several laws of nature explain how your pumps work. How to estimate how much pressure any centrifugal pumps will produce. How to start and operate your pumps.

3. Pump Curves. How to tell how many gallons per minute you are pumping. How to tell if your internal clearances are right. Using the pump curve to make sure you are starting the pumps the right way. How to reduce the cost of pumping.

4. System Design. An eight-step procedure for designing a pumping system. How to tell the difference between a pump problem and piping problem.

5. The Pump Suction. Simple ways to prime any pump. Why pumps cavitate. Why damage occurs in the pump and how to recognize the difference between cavitation damage and erosion and corrosion.

6. Pump Suction Problems. How to find and fix cavitation problems. A powerful method for troubleshooting difficult system problems is explained and then illustrated by many examples.

7. Troubleshooting Pump Parts. How to recognize the symptoms of: pipe strain, soft foot, unbalanced impeller, bearing failures, bent shaft, expansion of metal parts, shaft deflection, and a variety of pump problems. Where to look and how to tell the cause of your pump's problem.

8. Pump Packing. How to cut packing rings. How to pack a pump correctly. How to prevent sleeve damage. How to get maximum packing life. How to solve most packing problems with simple, inexpensive packings.

9. Bearings. How to prevent premature bearing failures. How flingers, excluders, seals, oil misting systems, and other preventive maintenance devices can stop bearing failures. How to lubricate bearings.

10. Alignment. What you align when you are aligning pumps and motors. Why you align, and when to precision align. The complete procedure for a reverse indicator alignment is described. The Techpro alignment worksheet is provided.

MECHANICAL SEAL SCHOOL

1. Introduction. How to estimate pressures at the seal. How to prevent vertical pump seal problems.

2. Seal designs. A review of ten common seals, identifying parts. A review of what all mechanical seals have in common and the differences between them.

3. Checking and Rebuilding Seals. How and why to check your seals. Which seals should be rebuilt and how it is best done.

4. Packing versus Seals. When seals should be avoided. Where they should be used. Converting packed pumps to seals.

5. Sealing Problems:

a. Sealing Dirty Fluids. Flushing methods, disadvantages of outside seals or back-to-back double seals in dirty fluids. Each of the problems caused by dirty fluids and how they can be solved by picking appropriate designs.

b. Hot Water Sealing. Cooling the water to 180o F by methods including pump jackets, external cool flushing and pumping rings. Why hot water is a problem. Hot water seal designs that do not need cooling.

c. Corrosion. How to select materials for springs, body, face and elastomers to prevent chemical attack in any fluid.

d. Crystallizing Fluids. Special quenching glands and fluids to prevent crystals from forming. How to pick the appropriate design to solve a problem.

e. Vacuum Sealing. Selecting the right spring load and shaft seals for easy vacuum sealing. The reason double seals and outside seals are not necessary.

f. High Pressure Sealing. How seals are balanced for high pressure, speed, and large sizes. When balanced seals are necessary and how they work. Special designs for pressures in excess of 300 psi.

g. Hot Oil Sealing. Safety problems and seals necessary for oils over 350o F. Methods for preventing coking at the seal.

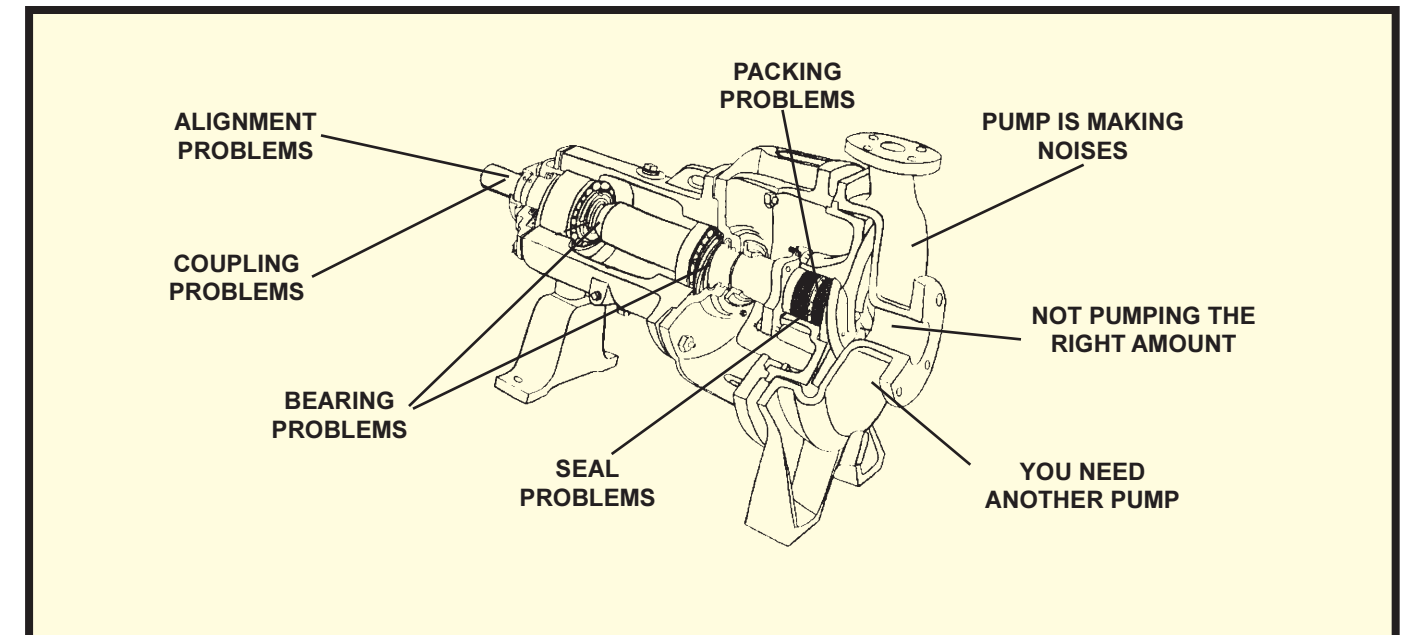
h. Toxic Fluids, Gases, and Non-Lubricating Fluids. Barrier fluid alarm systems and double seal arrangements.

6. Installation. Detailed procedure for installing rubber bellows seals. The procedure for converting a packed pump to seals. How to position any set screwed seal. How to avoid the most common installation problems.

7. Troubleshooting. How to inspect every seal to determine the cause of failure and what steps can be taken to prevent having the problem again.

AN INTENSIVE TWO-DAY COURSE ON FINDING, FIXING AND PREVENTING PUMP PROBLEMS

Pumps Vary. The problems remain the same.



Big pumps, little pumps, centrifugal pumps, positive displacement pumps, fire pumps, sewage pumps, gear pumps, peristaltic pumps, diaphragm pumps, piston pumps, hydraulic pumps, chilled water pumps, sump pumps, vertical turbine pumps, well pumps, submersible pumps, progressive cavity pumps, magnetic drive pumps, etc.

The problems remain the same.

TWO ONE-DAY SCHOOLS - ATTEND ONE DAY OR BOTH

THE PUMP SCHOOL

You will learn how to find, fix, or prevent almost all pump problems. If you have anything to do with the operation, maintenance, selection, sale, repair, or troubleshooting of pumps and systems, the course will be very useful.

THE SEAL SCHOOL

Most people run a pump until the seal fails and so almost 90% of pump failures are seal failures. This is a course on how to get any seal installed correctly and how to troubleshoot seals to prevent the same problem from repeating.

TYPICAL COMMENTS FROM PEOPLE WHO HAVE ATTENDED THIS COURSE:

- 1. If you have anything to do with pumps and seals, attend at once!*
- 2. Most schools of this nature deal with specific brands of pumps. Larry's does not. In the eleven years I've been training others, this is the best course I have ever attended.*
- 3. I wanted to thank you for providing the NY Port Authority with your excellent training program on pumps. It was quite informative. Even I learned a thing or two and I have been in this field for over 25 years.*

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