

Engineering Operations Strategies, Part III

By: Joe Alvin Haun, PE, MSE

Receiving course credit

This is only the text file for the course. Please review or download file for later review. Course credit can not be granted until the following steps are completed.

1. You will need to purchase the course. To purchase the course, please
 - a. Enter the Engineering Business Publications Continuing Education Center web page:

<http://www.engineeringbusinesspubs.com/classes/>
 - b. Or type the link into your browser.
2. If not already, you will need to register on the site. Once you have register, each time you log-in you will be able to view any courses that you have purchased in past visits, or purchase new courses. To find this course you will first click on the category "Engineering Operations Strategies". You will then see all of the available courses under this category. Next click on "Engineering Operations Plan – Part 3".
3. If you have not already paid for the course, you will then be forward to PayPal to pay for the course. Once you have completed the payment with PayPal, you will be redirected back to the Continuing Education site.
4. If you are ready, you can now immediately take the online quiz. When you complete the online quiz, your score will automatically be calculated. Once you have received a passing score of 80% or higher, you may download your course Certificate of Completion. If you do not pass the quiz, you can retake the quiz as many times as needed.

If you have any questions, please contact us at our website
www.engineeringbusinesspubs.com .

Engineering Business Publications

Seminars and Publications

P.O. Box 33611

Las Vegas, Nevada 89133-3611

www.engineeringbusinesspubs.com

Table of Contents

Engineering Operations Strategies, Part III	1
Congratulations!!.....	3
How to Use this Guide	3
Developing Operations Manuals	4
Types of Standard Operating Procedures (SOPs).....	5
<i>Guidelines for Technical SOP Text</i>	5
<i>Guidelines for Administrative or Fundamental Programmatic SOP Text</i>	7
Developing Quality Control and Quality Assurance Programs	8
Developing Checklists.....	10
Sample Operational Plan	11
Sample Operational Checklist	15
About the Author.....	16
Recommended Reading List	17
Contact Us.....	17

Congratulations!!

Welcome to *Engineering Operations Strategies, Part III*, your do-it-yourself guide to creating an Operations Plan that works for your engineering firm.

Once you've been through this guide, you'll know precisely what it takes to write an effective Engineering Operations Plan and supporting documentation. More importantly, you'll have a sample of a powerful Operations Plan to get you started.

This is the next step in your business story. From this point on, you won't have to stab in the dark – you'll have clear direction. You'll start to see some real results for your efforts.

Once completing the on-line course at our web-site www.engineeringbusinesspubs.com, you will be awarded with 2 PDH. The on-line seminar includes reading this guide and passing the 10 question test on our web-site.

Currently 30 U.S States require licensed engineers to obtain continuing education credits (CEU) or professional development hours (PDH) in order to renew their license. The PDH awarded by our seminar will be accepted by your state licensing board. **I personally guarantee it.** If your state board rejects our on-line seminar PDH, please forward us a copy of the board's letter and we will refund to you the cost of the on-line seminar.

How to Use this Guide

Each step covers an important aspect of your Operations Plan – these are things that you must give special consideration to before implementing your Operations Plan.

You will be surprised how much this guide will reveal about your business. It will get you to think about important issues that may have never crossed your mind in the past. It may also uncover new issues. But it is never a better time to put together or update your Engineering Operations Plan than now.

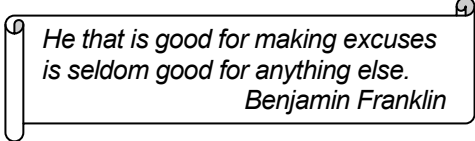
While reading please go ahead and jot down some notes in the spaces provided. It will help to improve your Engineering Operations Plan.

Later sections will go into greater depth describing the Standard Operating Procedures, Quality Control and Quality Assurance, and Checklists.

Now, it's time to get started.

Developing Operations Manuals

Operations Strategy should be inline with the organizational strategy, which should be inline with the corporate vision and mission. Selections of markets are the key to any strategy. After markets are analyzed for their attractiveness, operations managers develop appropriate processes and designs to achieve the organization's objectives.



*He that is good for making excuses
is seldom good for anything else.
Benjamin Franklin*

A written document that often goes unnoticed is the office standards and procedures. No matter what size the company, a clearly written operation manual that is followed by the staff can save the budget thousands of dollars. Have you heard of someone saying that in your engineering profession every job is different and that there is no way to have a set of procedures to follow? That is wrong. Procedures evolve and change in time as needed to modernize, but also to address new circumstance not thought of in the past. The military is notorious for procedures. On the flight line in the Air Force, technicians have to have the procedures book opened to the page describing exactly the steps they should be taking to test, monitor, or replace a part on the aircraft. Any mistakes can cause at a minimal an inoperable airplane and worst the lost of the plane and the aircrew due to a mishap in the air. A Professional Engineer's mistake can cause failures that cost thousands if not millions of dollars to fix or repair, and those major mistakes can have the potential of causing the loss of life.

To avoid mistakes procedures can be sit-up for any operation in the office, and all of the office procedures together produce the office standards manual or Operations Manual. Management must be diligent in requiring the entire staff to follow the manual; not allowing anyone to deviate. Flexibility is built into the Operations Manual (Manual) by providing guidelines were possible and specifics as necessary. The size of storm drains should be determined by company approved methods that meet or exceed the local requirements. Required local entities general notes are very specific in the Manual. Individuals are encouraged to make suggestions in revising the Manual, and then a committee should be formed to review suggestions and recommendations. The committee should then take the necessary steps to accept or decline the recommendations along with a written justification notifying the staff and revise the Manual if necessary. This may sound like a cumbersome procedure, but once implemented does becomes routine.

The following is different types of procedures that should be included in the Operations Manual.

Types of Standard Operating Procedures (SOPs)

SOPs may be written for any repetitive technical activity, as well as for any administrative or functional programmatic procedure. General guidance for preparing both technical and administrative SOPs are as follows:

Guidelines for Technical SOP Text

Technical SOPs can be written for a wide variety of activities. Examples are SOPs instructing the user how to perform a specific analytical method to be followed in the office such as a rip-rap design for armoring the banks of a proposed earthen channel, or the CAD standards for designing the channel, or in the field for staking out the sides of the channel in order to install the rip-rap or collecting of samples for soil laboratory analysis. Technical SOPs are also needed to cover activities such as data processing and evaluation (including verification and validation). The process of converting survey data from field notes, aerial photos, and legal descriptions to a site boundary and topographic map should be written in detail in the Operations Manual for surveyors, CAD Operators, and engineers to follow.

Example: Attempts in establishing CAD Standards

As a CAD designer in the office, an engineering company's design team has had difficulty in using standard details from the other company design teams, because no one seems to use the same layers, styles, line types, or much else. Usually, the best they can do is to make a copy and then redraw the detail, which costs the company a lot of time.

After suggesting and eventually convincing the Department Manager, they were able to form a CAD standards committee. The committee agreed to create several standards that everyone in the department could use. The standards will initially only cover a few items like a standard plot configuration, basic layers, and a few standard details. Over time the standards will increase to nearly ever CAD standard.

The company's design teams can now spend more time on the design process and not on routine CAD details due to inadequate standards. All of the design teams can now readily accept the standard CAD files, and the standard details are stored in a computer network directory that everyone has access to, and every CAD Operator has a copy of the standards at their desk for easy reference.

The CAD standards team will continue to meet to discuss problem areas, and improve the standards.

Citing published methods in SOPs is not always acceptable, because cited published methods may not contain pertinent information for conducting the procedure in-house.

Technical SOPs need to include the specific steps aimed at initiating, coordinating, and recording and/or reporting the results of the activity, and should be tailored only to that activity. Technical SOPs follow the outline presented below, but this format can be modified, reduced, or expanded as required.

The following text was excerpted from a United States government's publication.

In general, technical SOPs consist of five elements: Title page, Table of Contents, Procedures, Quality Assurance/Quality Control, and References:

1. Title Page
2. Table of Contents
3. Procedures - The following are topics that may be appropriate for inclusion in technical SOPs. Not all will apply to every procedure or work process being detailed.
 - a. Scope and Applicability (describing the purpose of the process or procedure and any organization or regulatory requirements, as well as any limits to the use of the procedure),
 - b. Summary of Method (briefly summarizing the procedure),
 - c. Definitions (identifying any acronyms, abbreviations, or specialized terms used),
 - d. Health & Safety Warnings (indicating operations that could result in personal injury or loss of life and explaining what will happen if the procedure is not followed or is followed incorrectly; listed here and at the critical steps in the procedure),
 - e. Cautions (indicating activities that could result in equipment damage, degradation of sample, or possible invalidation of results; listed here and at the critical steps in the procedure),
 - f. Interferences (describing any component of the process that may interfere with the accuracy of the final product),
 - g. Personnel Qualifications/Responsibilities (denoting the minimal experience the user should have to complete the task satisfactorily, and citing any applicable requirements, like certification[s]),
 - h. Equipment and Supplies (listing and specifying, where necessary, equipment, materials, reagents, chemical standards, and biological specimens),
 - i. Procedure (identifying all pertinent steps, in order, and the materials needed to accomplish the procedure such as:
 - i. Instrument or Method Calibration and Standardization
 - ii. Sample Collection
 - iii. Sample Handling and Preservation
 - iv. Sample Preparation and Analysis (such as extraction, digestion, analysis, identification, and counting procedures)
 - v. Troubleshooting

- vi. Data Acquisition, Calculations & Data Reduction Requirements (such as listing any mathematical steps to be followed)
 - vii. Computer Hardware & Software (used to store field sampling records, manipulate analytical results, and/or report data), and
 - viii. Data and Records Management (e.g., identifying any calculations to be performed, forms to be used, reports to be written, and data and record storage information).
4. Quality Control (QC) and Quality Assurance (QA) Section - QC activities are designed to allow self-verification of the quality and consistency of the work. Describe the preparation of appropriate QC procedures (self-checks, such as calibrations, recounting, re-identification) and QC material (such as blanks - trip, field, or method; replicates; splits; spikes; and performance evaluation samples) that are required to demonstrate successful performance of the method. Specific criteria for each should be included. Describe the frequency of required calibration and QC checks and discuss the rationale for decisions. Describe the limits/criteria for QC data/results and actions required when QC data exceed QC limits or appear in the warning zone. Describe the procedures for reporting QC data and results.
 5. Reference Section - Documents or procedures that interface with the SOP should be fully referenced (including version), such as related SOPs, published literature, or methods manuals. Citations cannot substitute for the description of the method being followed in the organization. Attach any that are not readily available.

Guidelines for Administrative or Fundamental Programmatic SOP Text

Again the following text was excerpt from a United States government publication.

As with the technical SOPs, these SOPs can be written for a wide variety of activities, e.g., reviewing documentation such as contracts, QA Project Plans and Quality Management Plans; inspecting (auditing) the work of others; determining organizational training needs; developing information on records maintenance; validating data packages; or describing office correspondence procedures. Administrative SOPs need to include a number of specific steps aimed at initiating the activity, coordinating the activity, and recording and/or reporting the results of the activity, tailored to that activity. For example, audit or assessment SOPs should specify the authority for the assessment, how auditees are to be selected, what will be done with the results, and who is responsible for corrective action. Administrative SOPs should fit within the framework presented here, but this format can be modified, reduced, or expanded.

In general, administrative/programmatic SOPs will consist of five elements: Title page, Table of Contents, Procedures, Quality Assurance/Quality Control, and References.

1. Title Page
2. Table of Contents
3. Procedures - The following are topics that may be appropriate for inclusion in administrative SOPs:
 - a. Purpose – (identifying the intended use of the process)
 - b. Applicability/Scope (identifying when the procedure is to be followed),
 - c. Summary of Procedure,
 - d. Definitions (defining any words, phrases, or acronyms having special meaning or application),
 - e. Personnel Qualifications/Responsibilities (identifying any special qualifications users should have such as certification or training experience and/or any individual or positions having responsibility for the activity being described),
 - f. Procedure, and
 - g. Records Management (specifically, e.g., as forms to be used and locations of files).
4. Quality Control and Quality Assurance Section - Describe any control steps and provisions for review or oversight prior to acceptance of the product or deliverable. This can include test plans such as verification and validation plans for software or running a “spell-check” program on the finished document.
5. Reference Section - Cite all references noted in the body of the SOP. A copy of any cited references not readily available should be attached to the SOP.

Developing Quality Control and Quality Assurance Programs

Having to repeat or redo work is the easiest way for an engineering firm to lose money. Therefore, it is best to limit the amount of rework if possible, and the best way to avoid these costly design mistakes is to sit-up a Quality Control and Quality Assurance (QC/QA) program. No matter what size your engineering business or the number of employees it employs, it is best to have a QC/QA program. The QC/QA system eliminates routine mistakes, which by itself will sit your engineering company above the competition. It is easier to sit up a QC/QA program while the business is small, then when the company has grown to a much larger firm. As the firm grows the QC/QA program can be modified and updated as needed.

The QC/QA program can be as simple as having a second person review all plans against a checklist to make sure that minor mistakes are avoided. The second person does not have to be the same person all of the time. These checklists can be derived from common mistakes found from past agency and in-house reviews.

There is a difference between Quality Control and Quality Assurance. Quality Control is a process implemented by the firm to ensure a certain level of quality is achieved in a product or service. In an engineering design firm, it may include whatever actions the business deems necessary to provide for the control and verification of certain characteristics of a product or service. The basic goal of Quality Control is to ensure that the products and services provided to the public consistently meet specific company standards.

Once the Quality Control process identifies a product or service that does not meet a company's specified standards of quality, the next step is to correct the problem and to ensure that future products or services will also meet the standard by adding the corrective measures to the Operations Manual.

Quality Control can cover not just products and services, but also people. Employees are an important part of an engineering company. In fact, the staff is the company. If a company has employees that do not have adequate skills or training, have trouble understanding directions, or are misinformed, quality may be severely diminished.

Often, Quality Control is confused with Quality Assurance. Though the two are very similar, there are some basic differences. Quality Control is concerned with the product or service, while Quality Assurance is process-oriented.

Quality Assurance is designed to make sure processes are sufficient to meet objectives. Simply put, Quality Assurance ensures a product or service is manufactured, implemented, created, or produced in the right way. Quality Assurance is the process of verifying or determining whether products or services meet or exceed customer expectations, and it is a process-driven approach with specific steps to help define and attain goals. This process considers design, development, production, and service.

Dr. W. Edwards Deming, the developer of Total Quality Management, summarized Quality Assurance as a cycle consisting of four steps: Plan, Do, Check, and Act. These steps are commonly abbreviated as PDCA.

The four quality assurance steps within the PDCA model stand for:

- **Plan:** Establish objectives and processes required to deliver the desired results.
- **Do:** Implement the process developed.
- **Check:** Monitor and evaluate the implemented process by testing the results against the predetermined objectives
- **Act:** Apply actions necessary for improvement if the results require changes.

PDCA is an effective method for monitoring Quality Assurance, because it analyzes existing conditions and methods used to provide the product or service to customers. The goal is to ensure that excellence is inherent in every component of the process.

Quality Assurance also helps determine whether the steps used to provide the product or service is appropriate for the time and conditions. In addition, if the PDCA cycle is repeated throughout the lifetime of the product or service, it helps improve internal company efficiency. The goal to exceed customer expectations in a measurable and accountable process is provided by Quality Assurance.

Developing Checklists

The Quality Control (QC) and Quality Assurance (QA) process may sound like a very complicated process, which requires a great deal of money to implement and to maintain. But, in fact, it can be a very simple process of basically following checklists. As each new job is completed the checklist is revised or altered as needed for situations that were not previously covered. As an example, a civil engineering company may create a checklist for checking a grading plan sheet. The initial checklist is based on the engineer's and CAD Operator's previous experience, the plan is submitted into the local government for review, and about three weeks later the company receives a list of comments from the city that needs to be addressed. After addressing the comments and revising the Grading Plan the plan is return to the city for additional review. Meanwhile the checklist is revised with the agency's comments. This process removes the typical agency comments in the future. The process is repeated when the plans are submitted to other agencies for review, and it is repeated for all future projects submitted for review. Eventually the checklist covers nearly ever-conceivable situation, and the plans are submitted to any agency with minimum comments. The checklist becomes extremely valuable to the company, because it saves time by not having to revising the drawings several times due to the typical mistakes or oversights that the competition continues to repeat.

Sample Operational Plan

(EXAMPLE ONLY)

The following section will identify the proposed operational plan for HAUNTEC Civil Engineering Services (HAUNTEC). Included are the general operating procedures, human resources, insurance, and working capital requirements of the business. Also included is a table outlining the office space requirements, asset acquisition and an outline of Terra Engineering's operational workflow.

General Operating Hours

HAUNTEC Civil Engineering Services operates Monday thru Friday from 9 am to 5 pm. HAUNTEC is operational year round with the exception of Federal holidays and the week between Christmas day and New Years day.

Human Resources

Mr. Haun, Mr. Holton and Mr. Smith are currently the sole employees of HAUNTEC for the first two years of operation.

Mr. Haun is a civil engineer with *Master of Science in Engineering* degree in Civil and Environmental Engineering and holds a Nevada Professional Engineering license.

Mr. Holton is a surveyor with Nevada Professional Land Surveyor license.

Mr. Smith is a CAD operator.

When additional human resources are needed, HAUNTEC has identified the persons qualified and able to assist on a contract basis for an agreed rate.

They include:

Mr. Bret Long, a civil engineer specializing in Land Development, is sub-contracted to complete work as needed. It is estimated that Mr. Long will eventually be hired full time by HAUNTEC once demand warrants growth.

Mr. Chad Short, a civil engineer specializing in traffic engineering, is sub-contracted to complete work as needed. It is estimated that Mr. Short will eventually be hired full time by HAUNTEC once demand warrants growth.

Mrs. Joann Sharp, a CAD operator, holds an Associate in Science degree in Design and is also be sub-contracted to perform work for the company. Eventually, HAUNTEC intends to hire Mrs. Sharp full time.

Mr. James Dull, a CAD operator, holds an Associate in Science degree in Design and is also be sub-contracted to perform work for the company. Eventually, HAUNTEC intends to hire Mr. Dull full time.

GEO, a geotechnical company, is retained to perform geotechnical surveys and reports.

TRAFFIC COUNTS, a traffic engineering supporting company, is retained to obtained field data such as traffic signal timing and traffic volume.

TECHNCIAL PRINTERS, a printing company, is retained to print large volume projects including development plans and reports.

HAUNTEC does not anticipate sufficient growth to hire more than one employee this year. Once the business has reached 7000 billable hours, HAUNTEC will offer one of the above professionals (engineers and CAD Operators) a full time position. If the sub-consultants refuse the offer, HAUNTEC will seek an individual to fill this position. Filling vacancies will begin by placing ads on Craig List and in local papers and organizations to attract a good pool of applicants.

An administrative assistant is not sought at this time.

New employees, once hired, will be covered by the Workers Safety and Insurance Board and covered for Employment Benefits.

Insurance Requirements

HAUNTEC will continue to incur costs for business liability insurance and professional liability insurance. The estimated costs for these insurances are as follows:

Business Liability	\$750 per year
Professional Liability	\$5,300 per year

Operating Capital Requirements

Due to the economic conditions in the local market, HAUNTEC will continue to have sufficient working capital to meet all operational responsibilities of the business for a minimum of six months.

It is estimated that the business will need approximately \$150,000 in working capital to sustain and ensure the business meets all on-going financial obligations.

Due to the low number of available development contracts, it continues to be anticipated that throughout this year there will be extended periods of low billable hours. Consequently, the company will experience financial pressures during these months or minimum cash flow. While much of this time will be spent developing proposals and marketing strategies, there will be a need to maintain sufficient working capital to cover these periods.

A long term strategy to maintain a positive cash flow during these periods will be to continue to diversify the company and develop other profit centers. These new profit centers are joint ventures with developers to design and build four projects including a Medical Office building, a Museum, a Themed Shopping Center and an Independent Living facility.

Office Requirements and Asset Acquisitions

HAUNTEC leases office space located at:

800 North Rainbow Boulevard, Suite 208
Las Vegas, Nevada

The office space is leased and accommodates the business office equipment such as computers, fax machine, photo copier, plotters, survey equipment, and other engineering equipment. This facility has a waiting room for clients, conference room, three offices, and CAD bay with four positions.

These facilities are leased at \$2,500 per month including utilities. In addition, HAUNTEC is not requiring any additional specialized equipment this year. If possible, HAUNTEC does anticipate obtaining used survey equipment desk and chairs from distressed companies. These are the estimated costs associated with those investments:

Office Equipment and Furniture \$2,000
Specialized Survey Equipment \$20,000
Total Capital Costs \$22,000

The above noted capital purchases will increase work effectiveness, enhance professionalism and will prepare the business for the forecasted demand for services. Further, the survey equipment may be leased out to other companies when not in use.

Operational Workflow

As with any consulting firm, the operational workflow for the business is quite uniform and simple to follow. The following is a step by step outline of how contracts are completed on a regular basis:

Step 1 HAUNTEC will respond to a request for proposal (RFP) from the government (city, county or state) or private entity with a professionally prepared proposal for service;

Step 2 At this point, the potential contract is awarded to either HAUNTEC or another company which submitted proposals for services. Therefore, communication is made by the contract to the successful consulting firm. If HAUNTEC is successfully selected to perform the work, the contract is then triggered to begin;

Step 3 HAUNTEC will collect a deposit (retainer) from the client and will begin the project. Retainer values vary depending upon the size and location of the project and the reputation of the client. Generally larger contracts over a \$200,000 require a retainer of 10%, while lesser amount requiring a retainer of 25%;

Step 4 HAUNTEC will go ahead and start the project while keeping communication with the client. The client will be invoiced monthly for services completed. At each milestone the client will be need to be current in billing before HAUNTEC proceeds with the agreement;

Step 5 Once the work is completed to the satisfaction of both, HAUNTEC and the client, the final payment for the contract will be made.

The above operational workflow is very standard, easy to understand and within industry's norm.

HAUNTEC will accept cash, check and visa payments. These payments are well within industry standards. The business will provide credit to larger account holders.

It is estimated that the length and terms of payments are net 30 for all clients. This will allow the business to avoid cash flow problems. Late payment charges are 2% of the projects outstanding balance.

Sample Operational Checklist

Table 1 - Typical Tentative Map Checklist

Tentative Map Checklist		
Date: _____ Project Number: _____ Reviewer: _____		
Subdivision Name: _____		
Yes	N/A	Description
		Does the Legend shown on the map show all of the lines, symbols, and markings in the plan?
		Is the Date Prepared updated on the map?
		Is the Map Scale correct?
		Is the North Arrow point up or to the left and aligned with the drawing?
		Are the Names, Addresses, and Telephone Numbers of the Owners of Record, Sub-divider, and Person or Persons who Prepared the map correct?
		Is there a sufficient legal description of the land to describe the location, including a graphic exterior subdivision boundary, dimensions, and approximate acreage? (If streets are not dedicated, the map must be drawn to the centerline of the street)
		Is the location, names, present widths and improvements of adjacent streets shown on the map?
		Do the contour lines of the entire subdivision, have the following intervals: <ol style="list-style-type: none"> i. Two (2) foot contour intervals for ground slopes between level and forty percent (40%). ii. Five (5) foot contour intervals for ground slopes between forty percent (40%) and eighty percent (80%). iii. Ten (10) foot contour intervals for ground slopes exceeding eighty percent (80%). iv. If the slope exceeds twelve percent (12%), it must comply with hillside development regulations and show the limits of such slope.
		Are the width and location of all easements for drainage, sewage, public utilities, and other purposes shown on the map?
		Are the radii of curves shown on the map?
		Are the lot layouts, lot number, and approximate dimensions of each lot shown on the map?
		Is there a key map on the drawing indicating plans for development of the entire area, if the proposed plat is a portion of a larger holding intended for subsequent development?
		Are the location and outline, to scale, of each building or other structure, within the proposed subdivision, noting whether or not each building or structure is to be removed or remain in the development of the subdivision, and other physical features which would influence the layout or design?
		Is the location of areas subject to inundation of storm water overflow, and the location, widths, and direction of flow of all watercourses and proposed storm water drainage and facilities, and also depicting limits of the 100 year flood plain shown on the map?

About the Author

Joe Alvin Haun, PE, MSE

Joe Haun is a highly experienced Civil Engineer, author, public speaker, and business advisor who have worked in the engineering profession since 1983.

Mr. Haun's early career was in the United States Air Force as an Engineer Assistant. A Desert Storm veteran he has a unique perspective of the Middle East.

Mr. Haun graduated from the University of Las Vegas, Nevada in 1994 with a BS degree in Civil Engineering and in 1995 with a MSE in Civil and Environmental Engineering.

Mr. Haun worked with several engineering firms in the Las Vegas valley until February 2005 when open his own engineering company HAUNTEC, which has grown to a designing multi-million dollar projects in Nevada and Utah and in the countries of Iraq and Costa Rica. Review his growing company's website at www.haunteceng.com to see the firm's latest capabilities.

Mr. Haun has published articles in engineering magazines and has given speeches on water resources, and is currently working on several articles on permeable pavements.

In 2009, Mr. Haun started Engineering Business Seminars and Publications to. His first publication is the "Engineering Business Success." He has created many self-study engineering business seminars for Professional Development Hours credits. Visit the web-site www.engineeringbusinesspubs.com to review the latest seminars and publications.

Recommended Reading List

Engineers are constantly learning about new techniques, products and design methods. Improving your skills as a business leader is no different. Reading books is one of the best ways to improve your skills. Below is a list of books we recommend.

- *Engineering Business Success* by Joe A Haun (book)
 - *Engineering Business Plan* by Joe A Haun (seminar)
 - *Engineering Marketing Strategies* by Joe A Haun (seminar)
 - *Engineering Operations Strategies* by Joe A Haun (seminar)
 - *Engineering Financial Strategies* by Joe A Haun (seminar)
 - *Engineering Proposal Strategies* by Joe A Haun (seminar)
 - *Engineering Joint Venture Strategies* by Joe A Haun (seminar)
 - *7 Habits of Highly Effective People* by Steven Covey
 - *First Things First* by Steven Covey
 - *Awaken the Giant Within* by Anthony Robbins
 - *Unlimited Power* by Anthony Robbins
 - *The E-Myth Revisited* by Michael E. Gerber
 - *Get Clients Now* by C. J. Hayden
-
- ❖ Please visit our web-site www.engineeringbusinesspubs.com to order Joe Haun products from our recommended book list.
 - ❖ Our on-line seminars include the manual, down-loadable from the web-site www.engineeringbusinesspubs.com , and sample letters and forms. After completing the seminars the participant will receive a PDH certificate showing the number of units awarded.

Contact Us

Engineering Business Seminars and Publications

P.O. Box 33611
Las Vegas, Nevada 89133-3611

www.engineeringbusinesspubs.com