Practical
Power Magnetics Design Techniques
With
Basic Fundamentals

This Presentation will be a PowerPoint Projection.

The outline is on the following pages.

There are well over 800 slides.

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Colonel Wm. T. McLyman

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Learn the Practical Fundamentals of
Power Magnetics Design

Now my presentation is available on CD the entire lecture 45 segments over 800 pages in *pdf* format.

Colonel Wm. T. McLyman, Autobiography

Colonel McLyman has fifty-three years of experience in the field of Magnetics, and holds fourteen United States Patents on magnetics-related concepts. Through his thirty years at Jet Propulsion Laboratory (JPL) in power conversion and as the magnetic specialist, he has written over seventy JPL Technical Memorandums, New Technology Reports, and Tech-Briefs on the subject of magnetics and circuit designs for power conversion. He has worked on projects for NASA including the Pathfinder Mission to Mars, Voyager I and II, Topex/Poseidon, Cassini, Galileo, Magellan, Viking, International Solar Polar, Hubbell Space Telescope, Seasat, SIR-C, Mars Global Surveyor, NSCAT, and the Deep Space Network. Here is a list of a few of Colonel's patents:

5,103,163	Current transducer
4,975,672	High power/high frequency inductor
4,823,074	Low power consumption current transducer
4,656,412	Ferroresonant flux coupled battery charger
4,276,588	Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress
4,245,288	Elimination of current spikes in buck power converters
4,039,925	Phase substitution of spare converter for a failed one of parallel phase staggered converters

He designed the Galileo signal rotary transformers used by the Command Data System (CDS), when the slip rings produced excessive noise on the 1-Mbit data bus. The performance of the signal rotary transformer exceeded all expectations. The rotary transformer on the Galileo Spacecraft lasted the life of the spacecraft, from 1989 to 2003 without a glitch.

He has designed the Quiet Converter with its low noise environment into programs such as WF/PC-II, Articulated Fold, Mirror Actuators, (Hubbell Space Telescope), MISR (Earth Orbiting System), Raman, and Mars 05 ONC, CCD Camera.

He is the author of four popular textbooks, Magnetic Core Selection for Transformers and Inductors, Transformer and Inductor Design Handbook, Designing Magnetic Components for High-Frequency DC-DC Converters, and the latest released book entitled, High Reliability Magnetic Devices: Design and Fabrication.

He has been on the lecture circuit for over twenty-five years speaking in the United States, Canada, Mexico, and Europe on the design and fabrication of magnetic components. He is known as a recognized authority in magnetic design. He has done many in-house seminars throughout the world. On the following pages is the outline of his two-day PowerPoint magnetic design course.

He is currently a consultant/contractor for SRS Technologies (JPL) in Montrose, CA, Babcock, Sanders Aeronautics, Inc. in Ione, CA., and Sandia National Laboratories in Albuquerque, New Mexico. He has recently finished an SBIR contract from NASA for the development of a high frequency power sine-wave rotary transformer converter for space and terrestrial exploration.

(Two Day Presentation)

Practical Power Magnetics Design Technique

With Basic Fundamentals

Presentation Outline

Design Exercises

The design exercises will be a complete design. The attendee is given a specification for each of the following exercises. The attendee will then do the design exercises. These exercises will include picking the correct core, calculating the number of turns, calculating the temperature rise and wire size to meet the specifications.

Class Design Exercise .....

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