JAMES R. STONE

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OBJECTIVE

I returned to live in Joplin in 2016, so my wife could care for her elderly parents. Employment had been a secondary consideration. I have engaged in work with charitable organizations, in photography, and in writing. My engineering skills and experience continue to have value, and I desire to be creative and productive, with some flexibility in lifestyle. I prefer to work primarily remotely, and with a reduced schedule.

My value extends beyond specific engineering work. I have demonstrated a broad range of capability for engineering and for synergistic contributions:

Mixed-signal, small-signal, power, etc. electronics design;
Minor mechanical design (associated with electronics design);
PCB layout; Thermal design; Embedded software design;
Cross-training and talent development; Technical interviewing;
Development of production documentation, user manuals, presentations
– all including photography;

I seek to contribute more significantly than by the development of products. I want to build upon my employer's knowledge base and enhance the capabilities of its technical personnel.

SKILLS

- Electronic hardware design to product requirements including industry standards
- Embedded processor design.
- Precision analog design, including use of circuit simulation such as LTspice.
- Software design in embedded applications.
- Managing compromises between cost-effectiveness, reliability, and performance.
- Engineering compatibility through product lines.
- Creating environmentally robust products.
- Experience with OrCAD & PADS schematic capture, PADS printed circuit design, some complex logic tools, and general-purpose tools such as spreadsheet and database.
- Standard instrumentation: oscilloscope, logic analyzer, etc.
- Managing all phases of development – from conception, through design and tooling, to production documentation and startup.
- Preparing informative & explanatory presentations; Mentoring Engineers

Professional Experience

RBC Medical Innovations
Senior Electrical Engineer 2015 - 2016

Responsible for design of electronic medical devices. This position offered new challenges for my cross-disciplinary skills. Assignments, for contract engineering clients, included sensor contact impedance research, refinement of a preliminary RF heating transducer array, testing of the performance characteristics of medical hydrogels, resolving issues with new designs of high-power RF generators, etc.

Responsible for coordination and presentation of mentoring topics.
RBC's Electrical Engineering Group Manager was committed to mentoring of Engineers, especially those having less experience. A responsibility which he offered me, in addition to my principle function in designing & supporting medical devices, was to actively lead ***Engineering Group Learning.*** Mentoring was both informal and by use of prepared presentations.

Qualified new components and new sources of components.
Initiated engineering change orders.
Assisted production in repair of intractable defectives.
Maintained detailed engineering documentation.
Provided customer support for application issues.

Mid-Continent Instruments and Avionics
Electrical Design Engineer 2010 - 2014

Responsible for design of advanced avionics batteries. MCIA was the first company to have a lithium-ion aircraft battery certified by TSO. It required a major 2nd-phase design and re-certification to DO-160F, for which I was employed. The design, due to the nature of avionics certifications, was necessarily fully discrete, without an embedded processor or complex logic. It included all aspects of development other than software and printed circuit artwork: component engineering, internal mechanical design, circuit design and prototyping, and printed circuit initial layout. Certification studies included both performance measurements and destructive testing.

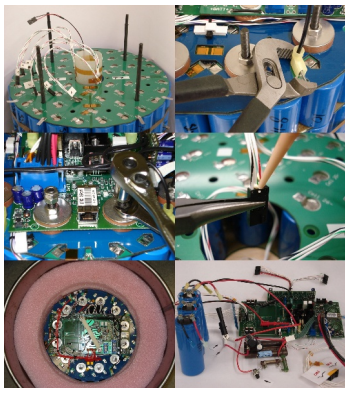
Responsible for design, implementation, and analysis of lithium-ion cell study. 2 types of lithium-ion iron phosphate cells from 3 manufacturers were subjected to a battery of tests. Some were functional in nature, providing application-oriented data. Several tests were destructive, intentionally configured to induce energetic failure modes. Most test fixtures were constructed specifically for this study. A final report became the immediate basis for customer presentations by the corporate Engineering Director.

Qualified new components and new sources of components.
Initiated engineering change orders.
Assisted production in repair of intractable defectives.
Maintained detailed engineering text & photographic documentation.
Provided customer support for application issues.

EAGLEPICHER TECHNOLOGIES
Electrical Engineer 2003 – 2007

Responsible for engineering support of joint venture proposal. This project was conducted by a Six Sigma Stage/Gate process, under the direct supervision of a PhD Corporate Engineering Director. An extensive test program was implanted to assess the design of a battery charger from a European company. The project was concluded at the implementation of a full pilot production line and the manufacture of a small number of chargers. The joint venture proposal was then declined. This decision was driven by Engineering analyses which I provided and by our evaluations of manufacturability.

Responsible for design of custom battery management systems. Custom battery packs were developed for government, research, and law enforcement organizations. The most sophisticated product was a lithium-ion battery for an autonomous submersible research vehicle, used by the Monterey Bay Aquarium Research Institute. This battery powered the vehicle. It used a form factor unique to submersibles, with custom mechanical packaging. I performed all design work: electronics circuitry, firmware coding in C, printed circuits, mechanical, documentation, and testing.

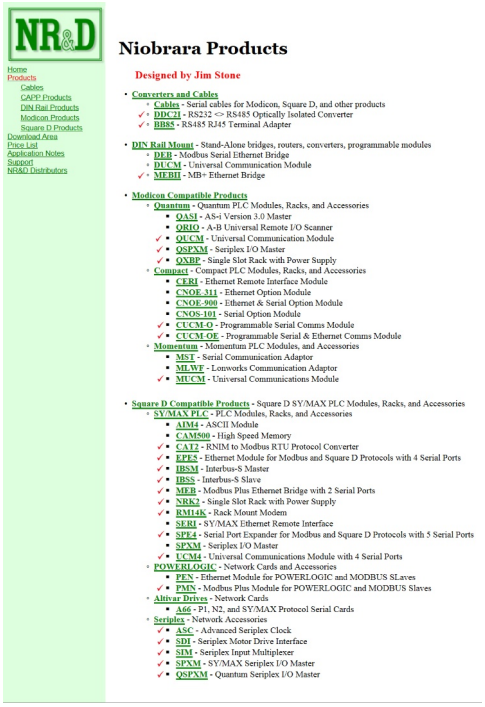


Niobrara Research & Development
Senior Design Engineer 1995 - 2002

Responsible for almost all hardware product development. This included all aspects of development other than software: component engineering, basic mechanical design, circuit design and prototyping, and printed circuit artwork.

Approximately 25 products were developed to production status, with an average development cycle of 12 weeks. They included Ethernet, RS422, RS232, and automation bus (Modbus Plus, Seriplex) interfaces. Their processors ranged from 8-bit microcontrollers to 32-bit microcomputers with integrated peripherals.

Maintained company stock numbering system.
Qualified new components and new sources of components.
Initiated engineering change orders.
Assisted production in repair of intractable defectives.
Maintained detailed engineering documentation.
Presented new products to industrial partner for certification.


NR&D

Home
Products
Cables
CAPP Products
DIN Rail Products
Modicon Products
Square D Products
Download Area
Price List
Application Notes
Support
NR&D Distributors

Niobrara Products

Designed by Jim Stone

- **Converters and Cables**
  - **Cables** - Serial cables for Modicon, Square D, and other products
  - ✓ **DDC2I** - RS232 <> RS485 Optically Isolated Converter
  - ✓ **HBS5** - RS485 RJ45 Terminal Adapter
- **DIN Rail Mount** - Stand-Alone bridges, routers, converters, programmable modules
  - **DEB** - Modbus Serial Ethernet Bridge
  - **DUCM** - Universal Communication Module
  - ✓ **MEBH** - MB+ Ethernet Bridge
- **Modicon Compatible Products**
  - **Quantum** - Quantum PLC Modules, Racks, and Accessories
    - **QASI** - AS-i Version 3.0 Master
    - **QRIO** - A-B Universal Remote I/O Scanner
    - ✓ **QUCM** - Universal Communication Module
    - ✓ **QSPXM** - Seriplex I/O Master
    - ✓ **QXBP** - Single Slot Rack with Power Supply
  - **Compact** - Compact PLC Modules, Racks, and Accessories
    - **CERI** - Ethernet Remote Interface Module
    - **CNOE 311** - Ethernet Option Module
    - **CNOE-900** - Ethernet & Serial Option Module
    - **CNOS-101** - Serial Option Module
    - ✓ **CUCM-O** - Programmable Serial Comms Module
    - ✓ **CUCM-OE** - Programmable Serial & Ethernet Comms Module
  - **Momentum** - Momentum PLC Modules, and Accessories
    - **MST** - Serial Communication Adaptor
    - **MLWF** - Lonworks Communication Adaptor
    - ✓ **MUCM** - Universal Communications Module
- **Square D Compatible Products** - Square D SY/MAX PLC Modules, Racks, and Accessories
  - **SY/MAX PLC** - PLC Modules, Racks, and Accessories
    - **AIM4** - ASCII Module
    - **CAM500** - High Speed Memory
    - ✓ **CAT2** - RNIM to Modbus RTU Protocol Converter
    - ✓ **EPE5** - Ethernet Module for Modbus and Square D Protocols with 4 Serial Ports
    - ✓ **IBSM** - Interbus-S Master
    - ✓ **IBSS** - Interbus-S Slave
    - ✓ **MEB** - Modbus Plus Ethernet Bridge with 2 Serial Ports
    - ✓ **NRK2** - Single Slot Rack with Power Supply
    - ✓ **RM14K** - Rack Mount Modem
    - **SERI** - SY/MAX Ethernet Remote Interface
    - ✓ **SPE4** - Serial Port Expander for Modbus and Square D Protocols with 5 Serial Ports
    - **SPXM** - Seriplex I/O Master
    - ✓ **UCM4** - Universal Communications Module with 4 Serial Ports
  - **POWERLOGIC** - Network Cards and Accessories
    - **PEN** - Ethernet Module for POWERLOGIC and MODBUS SLaves
    - ✓ **PMN** - Modbus Plus Module for POWERLOGIC and MODBUS Slaves
  - **Altivar Drives** - Network Cards
    - **A66** - P1, N2, and SY/MAX Protocol Serial Cards
  - **Seriplex** - Network Accessories
    - ✓ **ASC** - Advanced Seriplex Clock
    - ✓ **SDI** - Seriplex Motor Drive Interface
    - ✓ **SIM** - Seriplex Input Multiplexer
    - ✓ **SPXM** - SY/MAX Seriplex I/O Master
    - ✓ **QSPXM** - Quantum Seriplex I/O Master

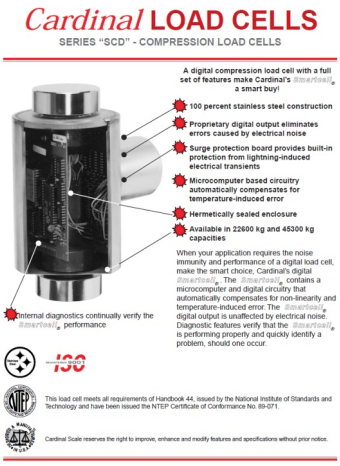
CARDINAL SCALE MANUFACTURING COMPANY
Senior R&D Engineer 1985-1995

Invention of a Voltage-to-Frequency Converter. **This VFC had zero first-order temperature-drift or gain-error factors**, achieved without trimming or precision components. It has been used at resolutions up to 20 bits.

Development of the single most successful digital weight indicator in company history, at that time. This indicator was an industry pioneer in software configuration and precision performance. It has served as the host for multitudes of custom applications.

Design of a digital weight transducer that featured ease of use, simplified troubleshooting, and extreme RFI and electrical transient resistance. The companion automated circuitry tester and digital calibration software were also developed.

Development of all high-end postal/shipping scale products. Mentor service to other Engineers and R&D Engineers.



CARDINAL SCALE MANUFACTURING COMPANY
Product Design Engineer 1979-1985

Software and hardware development of a digital display-keyboard unit which could stand alone or be mated with a weight indicator. It supported use of either LCD or VFD displays.

Production of developmental-debugging and production-test software.

G.T.E. SYLVANIA ELECTRONICS
Failure Analysis and Reliability Engineer 1976-1979

Design and construction of specialized test equipment for failure analysis and screening. Conducted semiconductor failure analysis.

ZENITH ELECTRONICS
Quality Control Supervisor 1974-1976
Test Equipment Technician 1973-1974

Supervision of half of the Incoming Quality Control Department (50 employees total). Development and maintenance of the inspection documentation system.

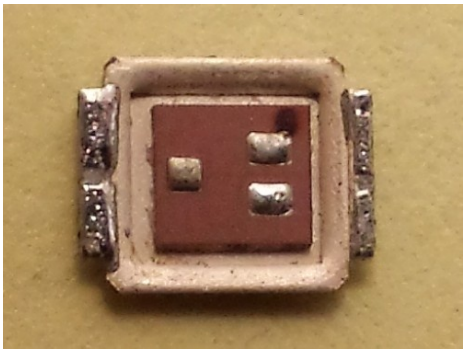
Education, Interests, and Activities

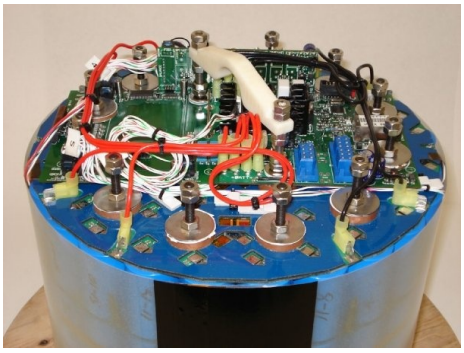
Southwest Missouri State University
B.S. in Physics 1973

California Institute of Technology
1968-1971

My involvement in electronics began from my brother's Ham radio hobby. I enjoy reading science and technology periodicals, which has resulted in a full collection of *Scientific American* from about 1967. I also advocate on behalf of science-based public policy. Often, that involves argument with science deniers. It necessitates my learning substantial amounts of science in various fields. In doing this, I occasionally have the gratification of PhD's in those fields complementing my explanations of topics.

Televised cooking and history shows fascinate me. My wife and I have occasionally enjoyed performing in local theater. I am an impromptu photographer of natural and exotic still-life scenes. I am sponsored by the *Minnie Hackney Community Service Center* and *Joplin NALA Reading* to provide free tutoring for students, especially those who are educationally disadvantaged.





Wildcat Glades Silver Creek II
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