

## It was 1957 and Mr. VA came to town

**T**he year is 1957. A high-tech fad is sweeping the nation. More and more American families want to live better electrically—in new, modern “all-electric” homes filled with all the newest gadgets and appliances: automatic clothes washers and dryers, dish washing machines, refrigerator-freezers, garbage disposers, air conditioners, humidifiers and dehumidifiers, fans and blowers, baseboard heating with automatic thermostats, and those precursors of high-tech’s coming second wave—television and hi-fi.

The year is 1957. Americans are just ga-ga over all those electric ap-

pliances and the name GE is synonymous with that early high-tech mania. American families—mesmerized before their flickering blue TV screens—watch with excitement as a younger Ronald Reagan tells them every week about GE’s most important product: Progress.

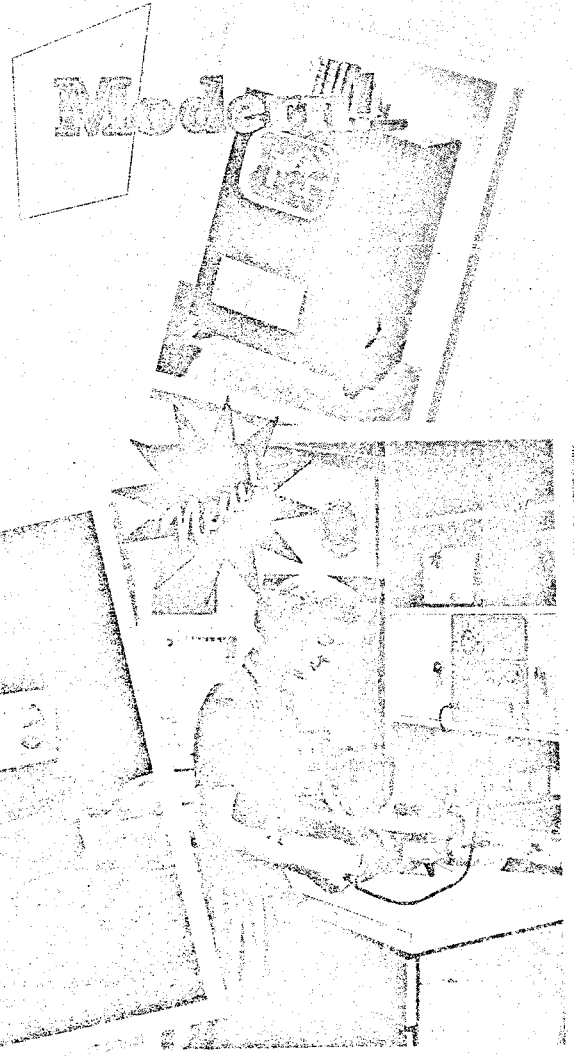
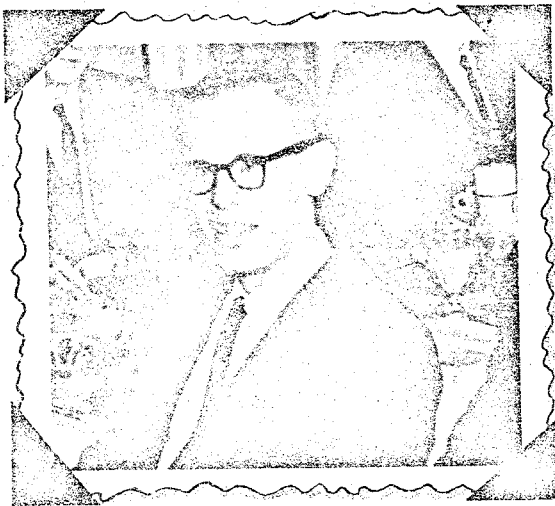
**S**o it was 1957. And Ross Sunday, a former accounting student at Indiana University in Ft. Wayne, had decided he didn’t want to noodle numbers for the rest of his life, and had gone and taken a job at the NASA of that early high-tech boom—GE.

GE was the hot place to be—if you worked there, you were really some-

body in the Ft. Wayne of 1957. They were making the most advanced products, and they were using the latest in production and management techniques to do it. Sunday took a job as a buyer in the motor division and started to learn all about VA—GE’s claim to fame in the field of production technology.

He was already pretty familiar with the basic ideas behind VA. As an amateur pilot, he knew first-hand the advantages of flying light; VA, as he saw it, was pretty much the same idea. So when he heard that Larry Miles, VA’s designer/test pilot was coming to Ft. Wayne to run one of his

*It's new.  
It's modern.  
It's the  
latest thing.  
So thought GE  
buyer Ross  
Sunday, right,  
when he learned  
about VA  
in 1957.*



renowned 'Value Analysis Instruction Series,' Sondag signed up early. So did the whole department—nobody was going to miss out on a one-week session with Mr. Value Analysis himself. This was going to be even better than the time Ronald Reagan toured the plant and gave one of his famous pep talks.

Sondag still remembers that session—remembers everything he learned at it and then some. Today, he's manager of commodity contracting at the Ft. Wayne plant—operated by GE since 1913—and for 19 other plants in the component products group at GE. "We still have VA training sessions from time to time," Sondag says today, "but nothing as extensive as in those days, because we know a lot more about the process now than we did then. It's sort of become ingrained in our day-to-day purchasing operation here. It's in our blood, you might say."

But in 1957 GE's corporate headquarters couldn't give a blood test to everybody in purchasing to be certain they were all VA experts. So they picked up the whole Ft. Wayne purchasing department and moved it to a separate location—away from the plant—installed desks and telephones, set up VA brainstorming teams, and

turned Larry Miles loose on them. They all had a week to come up with a stack of new ways to cut costs and improve quality on their assigned products.

"It really worked," says Sondag. "By the end of the week, all the teams had come up with a whole range of proposals—from really simple ones like switching from CR to HR steel on motor mounts to some blue-sky kinds of ideas that couldn't really be implemented for a few years." All in conjunction with Miles's education sessions.

It was those sessions, in fact, that formed the basis of the different teams' projects. Miles had laid down ten guiding principals for VA, then expanded on them. The classic principals:

1. Does its use contribute to value?
2. Is its cost proportionate to its usefulness?
3. Does it need all its features?
4. Is there anything better for

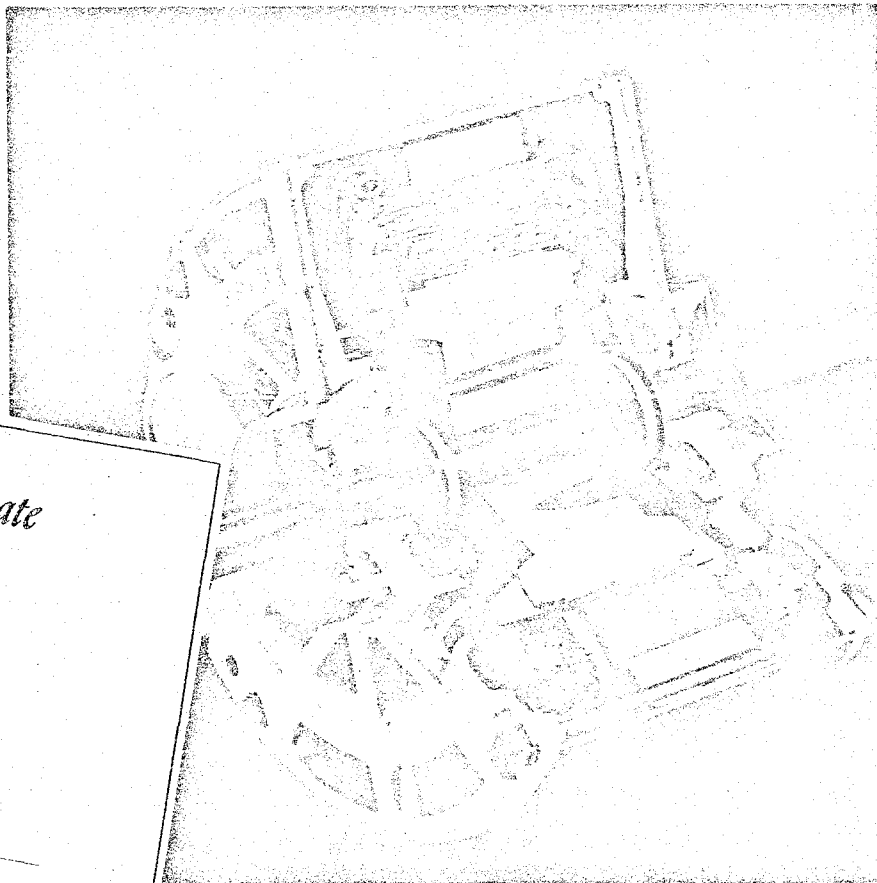
the intended use? 5. Can a usable part be made by a lower-cost method? 6. Can a standard product be found which will be usable? 7. Is it made on proper tooling—considering quantities used? 8. Do material, reasonable labor, overhead and profit total its cost? 9. Will another dependable supplier provide it for less? 10. Is anyone buying it for less?

The final ingredient, Sondag notes, was to bring together purchasing, manufacturing, and engineering in as many phases of the design and production process as possible.

Over the years, the Motor Division has put its VA lessons to good use. Here's a brief history of some of the VA techniques they've used to improve a basic motor design

*Can you VA a product to death? Virtually every part on this GE motor has been changed by VA. But there's more to come.*

*How to prove VA is in your blood? A certificate from a Larry Miles course helps. But results are the real test.*



## Value Analysis Certificate

This Certifies that

**Ross E. Sondag**

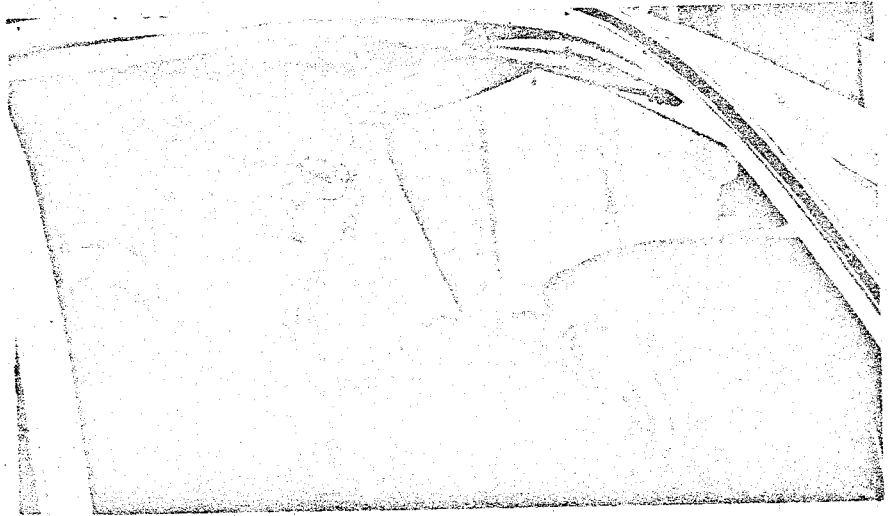
has satisfactorily completed basic training in "Value Analysis Methods and Techniques."

His abilities for obtaining "The Same Performance at Lower Cost" are accordingly increased.

*Larry Miles*  
GENERAL ELECTRIC SUPPLY

CHENECTADY  
**GENERAL ELECTRIC**

It's true Ronald Reagan toured GE's Ft. Wayne plant a few times in the '50s. But Mr. VA taught Sondag how to fly light. Today Sondag is manager of commodity contracting.



that's been around since the turn of the century:

#### 1960s

- Replaced copper magnet wire with aluminum where possible. This was mostly limited to light-duty motors.
- Redesigned motors to use industry-standard bearings, especially high-volume models used in automotive production.
- Zig-zag slitting of steel in scroll-slitting operations to reduce waste. This nested slitting procedure saved 10% of steel material.
- Redesigned terminal board for thermal protection overload device to use less material by changing cutouts.

- Replaced silver-soldering of wires with a mechanical splice. Required retooling with custom-designed splicing machinery.

#### 1970s

- Switched from conventional painting process to electrostatic.
- Shipped parts motors (partially assembled motors) in returnable plastic trays, not corrugated containers.
- Redesigned bearing requirements to take advantage of further standardization in auto industry.
- Redesigned all terminal boards to reduce thickness of material used.
- Friction welding of motor shafts to reduce stainless steel used.
- Use of leaded steel to improve machinability.
- Replaced taped wire joints with pressure-sensitive sleeving.
- Increased use of hot-rolled steel in non-critical parts.
- Reduced silver requirements through lab analysis of silver plate conductivity.
- Taper-packed magnet wire to increase winding speeds. Required retooling equipment at GE's wire mill.
- Shifted to water-soluble paints.
- Used robots to move parts in die-casting operations.

plastic slinger washer over motor shaft.

- Shifted from 1% zinc secondary aluminum to 3% zinc secondary aluminum. In some cases, required redesign of casting to increase strength.

- Moved to 383-grade industry standard aluminum.
- Increased secondary aluminum conversion of scrap to cut shipping and brokers charges.
- Changed casting process to shell-molding procedure. Finer quality castings require less finish work.
- Increased solids in paints.
- Replaced most corrugated shipping containers with stretch wrap.

Today, Sondag and the rest of Bill Ehner's operation are gearing up for the next high-tech wave at the motor division: electronic motors. That means a whole new round of VA-type solutions to the development of a new product and the location of new and better sources of materials and commodities.

Just getting their hands on enough semi-conductor materials to produce these motors and hit the markets is enough of a problem to keep the whole department hopping right now. But once the early production bugs are under control, the whole VA process will start anew.

#### 1980s

- Changed from neoprene to

