

# Employed 60 Years!

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*James Bacon, innovation legend personified!*

## Page 2: Tribute Letter

Letter to James Bacon from Marilyn A. Hewson, Lockheed Martin's (LMCO) Chairman, President, and Chief Executive Officer.

## Page 3: Recognition Ceremony, July 2015

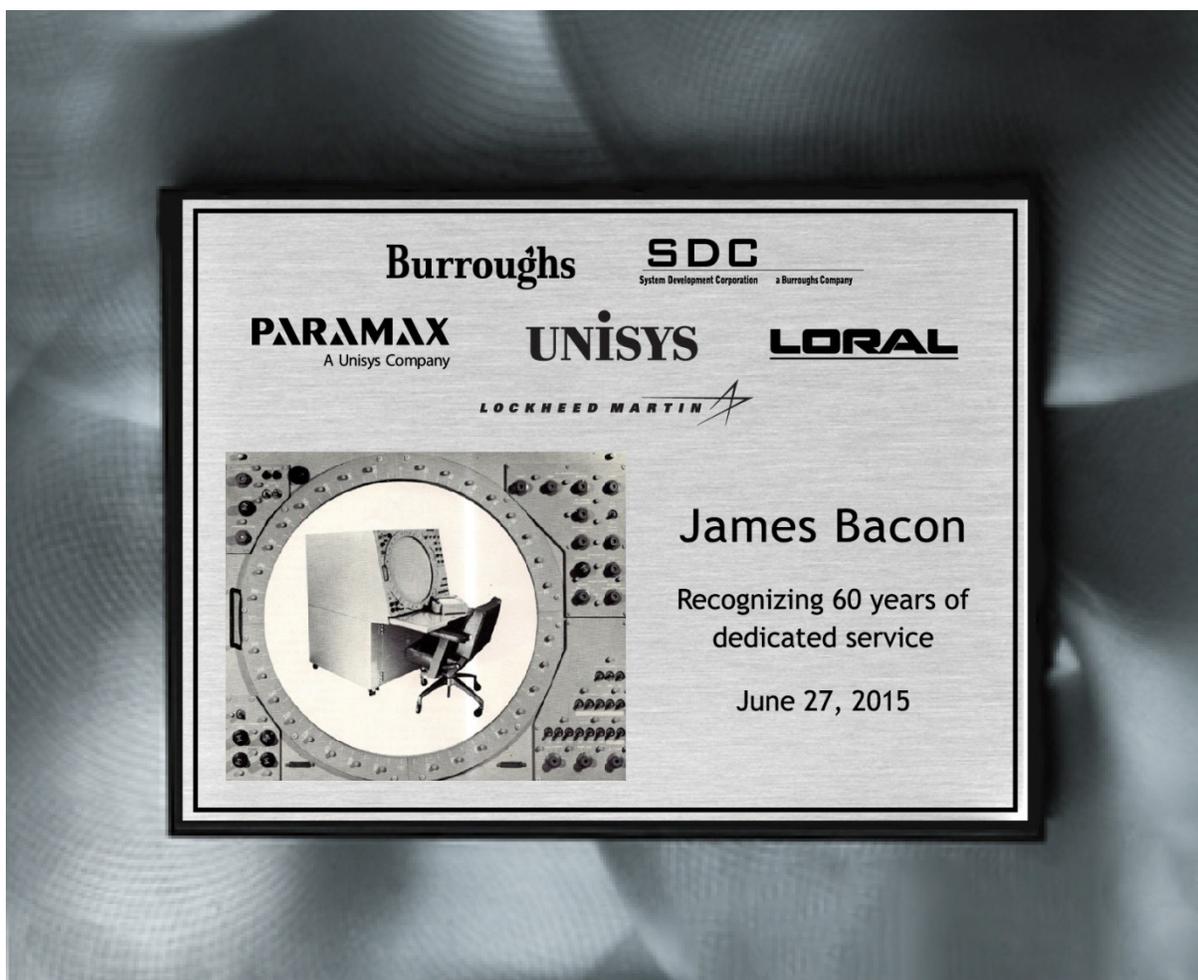
Steve Koltes<sup>1</sup> orchestrated a recognition ceremony at the FAA's Technical Center.

## Page 6: 1991 Twin Cities 'Link'

James Bacon is part of our Minnesota Air Traffic Control (ATC) computer/systems history.

## Introduction

His company names changed through mergers and divestitures however; James Bacon's loyalty and dedication to the world's Air Traffic Control systems are now a part of US computer history.



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<sup>1</sup> Steve's home office is at the Lockheed Martin facility in Eagan, Minnesota.

Established in 1980

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Marilyn A. Hewson  
Chairman, President and Chief Executive Officer

June 26, 2015

Mr. James R. Bacon  
Hardware Engineer, Senior Staff  
Information Systems & Global Solutions  
Lockheed Martin Corporation  
230 Mall Boulevard -- Mail Drop L9161  
King of Prussia, PA 19406-2002

Dear James:

Congratulations on your extraordinary 60 years of service to the company! Your anniversary is a remarkable milestone and a feat that is very seldom achieved. Certainly, you are among a select group of our most dedicated employees.

Since 1955, when you joined the Burroughs Corporation – a Lockheed Martin heritage company – you've built a reputation for being incredibly loyal and hard-working. For six decades, you've applied your vast engineering capabilities to develop unique and innovative systems for our US military and government customers.

I reviewed the impressive list of patents you hold and it is clear that your work has contributed to the success of many major Lockheed Martin programs. From the Back-Up Intercept Control system supporting the NORAD control centers to Radar displays and tracking devices, you've had a hand in shaping our legacy of performance and innovation. You've also provided your fine leadership to Research and Develop teams, and helped shape future generations of innovators by sharing your knowledge and passion.

Perhaps most impressive is that the Federal Aviation Administration has been using your designs as part of their Air Traffic Control systems for the past 60 years. It's remarkable that your team's Digital Bright Radar Indicator Tower Equipment, which is a part of nearly every traffic control tower's setup these days, has steadily been in use since its launch in the 1980s. The system has proven essential to air traffic controllers in the towers who rely on its data in bright light and sunny conditions.

On behalf of the entire leadership team and your colleagues across the Corporation, thank you for your many years of service. We depend on you to perform with excellence – and you don't disappoint.

Congratulations again, James, on achieving this momentous 60-year milestone in your career at Lockheed Martin. I wish you continued success.

Sincerely,

Marilyn A. Hewson

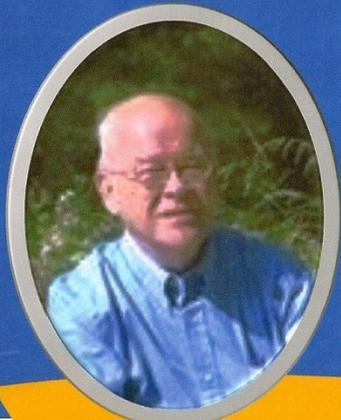
Systems Integration Manager Stephen Koltes presented a plaque from the Common Arts (CARTS) team recognizing Jim's exceptional engineering support to the FAA customer during an appreciation ceremony at the FAA Tech Center.

Paul Engola, T&FS vice president, presented Jim with the achievement letter from Lockheed Martin Chairman, President and CEO, Marillyn Hewson. Participating in the ceremony were LM employees Gregg Stellitano, Steve Koltes, Paul Engola, James Bacon, Wes Herrick, and Scott Schmidt.



The FAA William J. Hughes Technical Center is an aviation research and development, and test and evaluation facility. The Technical Center serves as the national scientific test base for the Federal Aviation Administration. The FAA Tech Center is co-located with the Atlantic City Airport and is near the Atlantic City Expressway exit #9. Lockheed Martin's engineering staff supports the Common ARTS, Micro EARTS, ERAM, and ATOP programs at the FAA's Tech Center. FAA has had continual support contracts with LMCO and their St. Paul heritage companies since the late 1950s.

Steve Koltes used a couple of viewgraphs during the July luncheon and award ceremony to recognize Jim's history with Lockheed Martin's heritage companies – Burroughs to Lockheed Martin.



**Congratulation  
James Bacon on  
60 years of  
dedicated service.**

**Start Date: June 27, 1955**



**Burroughs**

**SDC**  
System Development Corporation a Burroughs Company

**UNISYS**

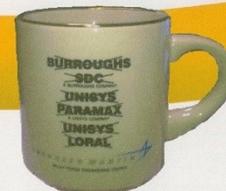
**PARAMAX**  
A Unisys Company

**UNISYS**

**LORAL**

**LOCKHEED MARTIN**

## In 1955....



- ~NASA did not exist (1958), there was not a 'civilian' space program.
- ~FAA did not exist until 1958; preceded by the CAA - Civil Aeronautics Authority
- ~The first home microwave ovens are manufactured by Tappan. They cost \$1300 which really slows sales!
- ~Crest, the first toothpaste with fluoride clinically proven to fight cavities, was introduced.
- ~A young Jim Henson builds the first version of Kermit the Frog.
- ~Ray Kroc opens his first McDonald's in Des Plaines, Illinois.
- ~Disneyland opens to the public in Anaheim, California.
- ~First edition of the Guinness Book of Records is published, in London.
- ~The long-running program Gunsmoke debuts on the CBS-TV network.
- ~The Mickey Mouse Club debuts on the ABC-TV network in the United States.
- ~General Motors becomes the first American corporation to make a profit of over one billion dollars in one year.



- ~House: \$22,000
- ~Average income: \$4,137
- ~Ford car: \$1606-\$2944
- ~Milk: \$.92
- ~Gas: \$.23
- ~Bread \$.18
- ~Postage stamp: \$.03
- ~Sirloin chops: \$.69 lb.
- ~Pot Roast: \$.43 lb.
- ~Eggs, doz.: \$.61
- ~Coffee: \$.93 lb.

The Federal Aviation Administration's Technical Center staff were also at the recognition/award ceremony: Craig Gerace, Bill Black, Nick Del Nero, Paul Engola (LM VP), James Bacon, Tom Poussart (FAA retired), Joe Cahalan, Kerry Mack, and Kieth Wetheril.



LMCO staff re-capped James Bacon's history; "he started as a member of the advanced technology group, later moving to support numerous programs including the Back-up Intercept Control (BUIC) program. BUIC was a backup for the global North American Air Defense (NORAD) system. It was on the BUIC program that he displayed his prowess for display systems. He became an expert in designing and implementing circuits to provide imaging onto cathode ray tube (CRT) displays. These vacuum tubes contained electronic guns and a phosphorescent screen used to view images with a means to accelerate and deflect the electronic beam onto the screen to create the image.

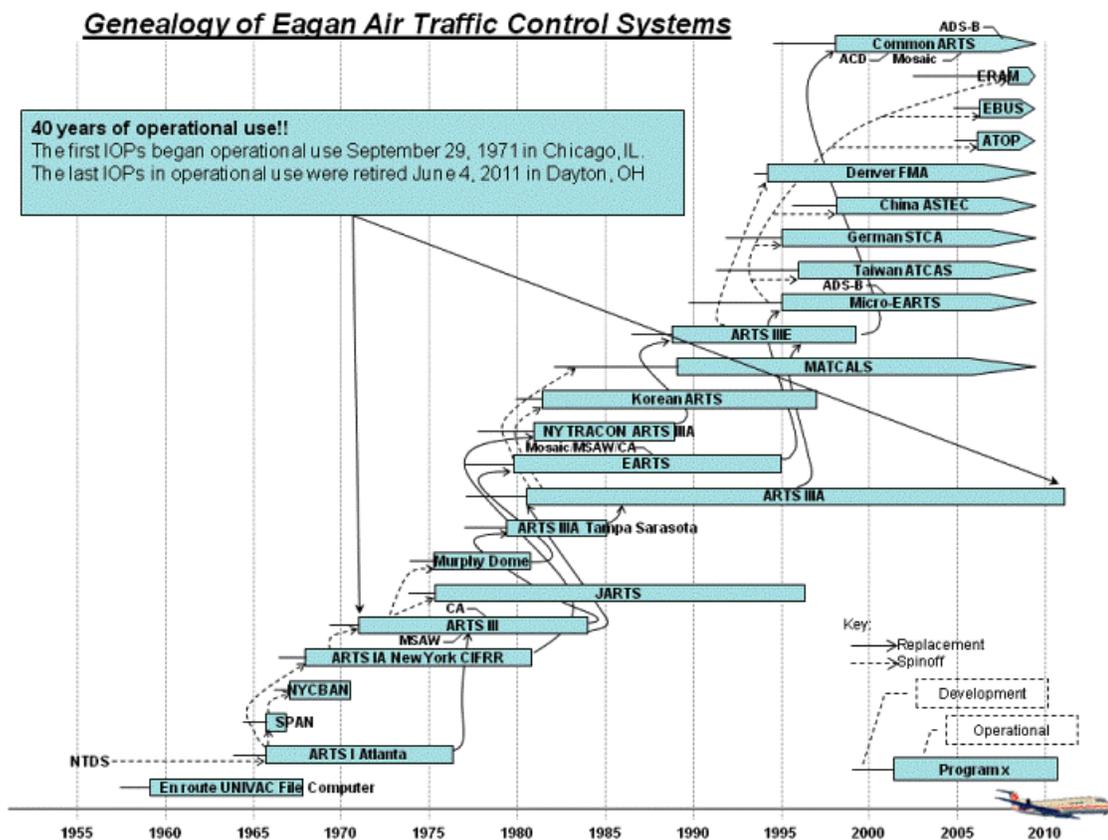
Jim leveraged his increasing knowledge as the lead designer of the Radar Alphanumeric Display Subsystem (RADS) display used in air traffic management. Since 1974, there have been more than 1,000 RADS displays produced and deployed as the air-traffic-controller console in the Automated Radar Terminal System (ARTS IIA and ARTS IIE). Most small and medium size airport Terminal Radar Approach Control facilities in the United States implemented this system. Jim and his team later expanded RADS to add additional display capacity using a video time compression system, allowing the RADS to display a larger number of targets; from an initial 70 to 256. The ARTS radar and tracking system has gone through some technology refreshing over the years, but the RADS display designed by Jim more than 40 years ago continues today at airports across the country.

Mr. Bacon went on to lead the independent research and development team that developed the Digital Bright Radar Indicator Tower Equipment (DBRITE) display system; deployed at virtually every air traffic control tower throughout the country since the mid 80s. DBRITE provides data to controllers in bright sunlight conditions. It was among the earliest electronic devices to perform self-diagnostics; displaying trouble codes—in real time—in the unused corner spaces of a square CRT that also displayed normal air traffic control information. The Federal Aviation Administration has successfully used Jim’s designs in their Air Traffic Control Systems for the last 40 years.

In 1996, through a series of acquisitions and mergers, Jim became a Lockheed Martin employee. It was no surprise that Lockheed Martin found value in Jim’s expertise. He had already sustained a career of 41 years including a master’s degree in engineering from the University of Pennsylvania and 12 patents, his commitment to customers and company dedication are now legendary!

According to Jim, “When you find an area you really like and are interested in, you get with a good company that will support you and you can have a very accomplished and satisfying career.” Jim knows from experience, having recently passed his 60-year service anniversary with no immediate plans of slowing down.”

**Twin Cities Heritage Companies'** 50+ year history in the FAA's Air Traffic Control systems is illustrated by this 2011 ATC program progression chart from Tom Montgomery.



Established in 1980

Beginning in the 1950s, UNIVAC (St. Paul) provided File Computers and software for the FAA en-route facilities. In the 60's we adapted NTDS hardware and provided systems software for the Automated Radar Terminal Systems (ARTS), subsequently installed at the Tech Center and 64 major airports throughout the US. The FAA systems evolved in the 70s with IBM systems at en-route centers and Systems Development Corporation systems at ~120 small airport control sites. Sperry kept the 64 ARTS systems engineering as part of the defense operations. Burroughs bought SDC in the mid-80s, and then they bought Sperry in 1986 to form UNISYS. UNISYS management then merged the SDC operations with the former Sperry Defense Systems Division operations under previous SDC President, Fred Jenny. UNISYS named these combined operations PARAMAX, intending to do a spin-off of that umbrella of operations. When the Wall Street 'feedback' was somewhat negative, i.e. the IPO would yield significantly less than wanted, Unisys ended the name PARAMAX, reverting the operations to a UNISYS division. In the mid-nineties, UNISYS sold this division to LORAL. LORAL in turn sold the group to Lockheed-Martin in the late 90s.

The next page of this paper shows the 8/28/1991 UNISYS ATC/Air Defense departments organization under division Vice President William 'Bill' Marberg. The left half of this 235-person organization reported into the ATC/VFL Engineering group under Director Richard P. 'Dick' Sunderman. At the left of Dick's responsibilities is the ARTS/DBRITE H/W group under manager R. Bardas. **James Bacon** is at the top of the engineers in this group; he is still an active employee – others are retired or deceased.

About a dozen of the people in this 1991 organization chart are current VIP Club members, including me then reporting to Karen Maddock on the charts right side – sorry that I have not met Jim. The VIP Club's web site ATC page, <http://vipclubmn.org/aircontrol.html> has much more history!

Thanks to Steve Koltes for the pictures and award ceremony information. *Lowell A. Benson*. Editor

### Common ARTS Sites

