

2011 Richard H. Johnson Award

Presented to

ROBERT HENRY WIDMER

About the Award

- Precision Strike Association's Richard H. Johnson Technical Achievement Award (the Johnson Trophy), is named after the first recipient. The award is presented annually.
- It recognizes an individual for outstanding personal technical achievements and significant contribution to precision strike
- Selection criteria include accomplishments which Dick embodied
 - Transcend a single program
 - Are widely felt by warfighters who defend the United States
 - Influenced other technologists as measured by factors such as imitation and mentoring
 - Make precision strike systems more widely available to warfighters who defend the United States

About the Jury

- The 2011 Jury included members from the largest guided weapon prime contractors
 - Boeing, MBDA, Lockheed Martin, and Raytheon
- The jury included members from smaller firms
 - Kaman and Lone Star Aerospace
- The jury chairman was Dean Clubb

2011 Awardee of the Johnson Trophy



Robert H Widmer

Selected Contributions and Career Events

Consolidated Aircraft

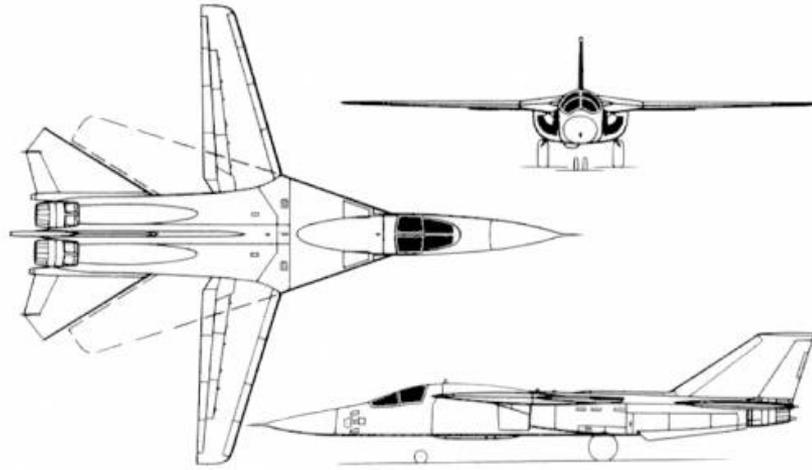
PBY, B-24, B-36, B-58, B-60

General Dynamics

Tomahawk, F-111, F-16

Lockheed Martin

Unmanned Systems



Some Career Highlights

- 1938, Senior at Rensselaer Polytechnic Institute
 - Built a racing biplane in his garage as his graduation thesis, the aircraft was flown in the Miami Air Races
 - Only East Coast job offer was as a mechanic on graduation
- Bob wrote letters to the CEO's of West Coast aviation firms, including Don Douglas and R. H. Fleet
 - Fleet, the founder of Consolidated offered him a job as a “detail draftsman”
 - In the months before WW II, he worked on the PBY, the PB2Y, the B-24 and B-32
 - He made a big enough impression before the war began to be the first person assigned to the B-36 and to be named the head of Aerodynamics, Thermodynamics and Propulsion

The B-36

- First Intercontinental Bomber; foundation aircraft of the Strategic Air Command
- Consolidated's first integrated weapon system
 - Engines, airframe, navigation, weapon delivery; all conceived as an integrated system
 - Paved the way for all subsequent strike aircraft; the Launch Acceptability Region (LAR) of today is the descendent of the B-36 approach
 - Became the basis for the B-60
- Many observers say the program survived because of Bob Widmer's vision and persistence
- Some claim the B-36 was critical to the survival of an infant USAF as an independent service



The B-58



Photo: Ft. Worth Star Telegram

- In the post WW II era defense spending was unstable and uncertain
- Bob Widmer, impressed by Chuck Yeager's 1947 successful effort to break the Mach barrier, proposed the creation of a supersonic strike aircraft
 - The company (Consolidated Vultee) declined to fund the work
- Bob proceeded to execute the first designs on his own – working for two years without corporate support

What We Heard about “Chief Engineer”

- When Bob became “Chief Engineer” at Conviar he asked “Chief Engineer” was supposed to do.
 - He was told to ask people who’d had the job before him – *“it changes”*
- Bob forged his own understanding; engineering leadership was about both teamwork and individual excellence
- Words describing his role as:
 - A Motivational Force
 - A Design Influence
 - Responsible to see “top talent” was on emerging programs
 - Responsible to see designs were technically superior
 - A great man. I was lucky to have spent some time with him

The F-111 and F-16



- As a Chief Engineer he fought to defend systems he believed in
- Bob flew to Washington every weekend to meet with Secretary of Defense Robert S. McNamara to defend the F-111 until the aircraft was ironed out
- He hid F-16 prototypes from General Dynamics corporate officials to keep the lightweight aircraft alive



What We Heard About Tomahawk

- Many people made significant contributions to the creation of Tomahawk – too many to call any one person the “Father of Tomahawk”
- Bob Widmer was in a unique position to defend and improve it (perhaps with the memory of corporate resistance to the B-36 and later his B-58)
- The following quotes are typical of what we heard about Tomahawk

Excerpt from GD-Conviar's SLCM Study Proposal (Courtesy of PMA-280)

This study will be accomplished by the San Diego Operation of Convair Aerospace Division of the General Dynamics Corporation. Convair is dedicated to the success of this design study, and has accordingly committed experienced personnel and the latest computer resources to this effort. Convair capabilities in aircraft and missile systems include the assets and experience of the Fort Worth Operation in addition to assets associated with the San Diego Operation

7.1 PROGRAM RELATIONSHIP TO GENERAL DYNAMICS ORGANIZATION

Within the Convair Aerospace division, ***the SLCM program comes under the purview of Mr. R.H. Widmer***, vice president of Research & Engineering...

Bob's Role on Tomahawk

“Bob Widmer spent many hours... reviewing all the design options, questioning all the design decisions, and the qualifications of ...engineers on the Tomahawk team. He felt the Convair concept, which encapsulated the Tomahawk for ship-board protection and light weight in flight, was the best Tomahawk design. As a result, Bob Widmer fought to keep the Convair Tomahawk Team adequately funded with General Dynamics funds during a dip in Government spending on the Tomahawk Program. ***Without Bob Widmer's persistence - both in design and funding - the United States Navy would not have gotten the best cruise missile ever fielded.***”

Strike System Technologies Championed by Bob Widmer

- Large Scale Magnesium Primary Structure
- Bonded Trailing Edge Structure
- Totally Integrated Airframe, Propulsion, Electronics
- Aluminum Bonded Honeycomb
- Submarine Launch Missile Capsule
- Supersonic Cruise
- Fly-by-wire
- Unmanned systems
- Others which cannot be cited



Robert Henry Widmer born in Hawthorne, New Jersey, on May 17, 1916 died in this year at the age of 95

His contributions are still in service in the armed forces of 27 nations who operate the F-16, and Tomahawk

PSA is proud to award him the 2011 Johnson Trophy