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AACE Int. 1967  
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**PUBLISHED/PRESENTED TECHNICAL PAPERS BY JOSEPH A. BROWN, CCE  
(with brief summary/comments on 22 papers)**

1. ***Launch Pad to the Moon - Construction Bidding Cost of Launch Complex 39, VAB, 12th Annual AACE Meeting, Houston, Texas, June 17-19, 1968***  
  
Construction bidding costs, methods, bid strategy, and breakdown for eight bid packages for \$111,730,473, *World's Largest Building and First Aerospace Construction Management Project*, first in series of Aerospace Government Estimating Series (GES)
2. ***Construction Cost Escalation & Labor Productivity, What Can We Do About It?, 1st international Cost Engineering Symposium, Montreal, Canada, 1971***
3. ***How Does the Successful Low Bidder Get Low and Make Money? 17th Annual AACE Meeting, St. Louis, Missouri, June 17-20, 1973***  
  
Four aerospace case studies of construction projects and low bidder strategy for successful world famous LC 17, Delta Launch Pad, LC 34, Mobile Service Structure, and LC 39, VAB. #2 AGES
4. ***How to Sharpen Your Bidding, 18th Annual AACE Meeting, Los Angeles, CA, July 1-3, 1974, #3 AGES ("How to" aerospace case studies for propellant office lab. 72 item unit price labor and material - 13 session college credit course***
5. ***KSC Cost Index for Construction Management, 19th Annual AACE Meeting, Lake Buena Vista, Florida, June 29 - July 3, 1975***  
  
Describes creation and purpose of monthly aerospace cost index using 27 special materials and 19 labor/crew rates for KSC Launch Facility, Edwards Air Force Base, and Palmdale, California, escalation-measurement for improvements and construction management of shuttle facilities. #4 AGES
6. ***The Why, How, and When of Certified Cost Engineering, dated March 10, 1977, (outline presented to meetings of Florida Section AACE on December 11, 1976, and March 11, 1977)***
7. ***KSC Estimating Format for Construction Cost Engineering for Space Shuttle Facilities Construction Management, 21st Annual AACE Meeting, Milwaukee, Wisconsin, June 26-29, 1977, (describes KSC Specification G-0002)***  
  
Overview of *KSC Estimating Specification G-0002*. How to make detailed aerospace government cost estimates, budgets, PER, design and final for cost and value engineering. #5 AGES
8. ***Construction Cost Control After Bidding, Florida Section AACE 5th Symposium, Miami Beach, Florida, January 20-24, 1978 (14 pages - dated 11/7/77) #6 AGES***  
  
Case studies of 2 aerospace projects - O&C Astronauts Facility and unit prices for Orbiter Landing Facility
9. ***Construction Bidding Cost of KSC's Space Shuttle Facilities, 23rd Annual AACE Meeting, Cincinnati, Ohio, July 15- 18, 1979 (31 pages)***  
  
Bid analysis of OPF, SRB, Shuttle Landing Facility (SLF), LC-39 - PADS A and B, Mobile Launcher Pad (MLP), and miscellaneous modifications VAB, LCC, and GSE, pneumatic control panels, SRM hold down posts, bid abstracts, and system summary - 30 pages. #7 AGES

10. ***Conceptual Cost Estimating Using KSC Cost Index for Construction Management, 24th Annual AACE Meeting, Washington, DC, July 5-9, 1980 (13 pages)***  
Provides over 230 aerospace rules of thumb, unit costs - part of the most important communication tool for timely, more accurate cost data for CM with 11 detailed breakdown (ET-H2 ARM, RSS, PCR LC 39, Pad B) 7-year graphic escalation chart. #8 AGES
11. ***Labor Productivity - Measurement & Improvement, Florida Section, 10th Annual AACE Symposium, Winter Park, Florida, January 28 - February 1, 1981***
12. ***Conceptual Estimating Using Kennedy Space Center's Price Book for Construction Management of Aerospace Facilities, Florida Section, 11th Annual AACE Symposium, Miami, Florida, Florida, February 12-13, 1982 (17 pages - dated 12/21/81)***
13. ***Aerospace Construction Price Book for Construction Management of Aerospace Facilities, 7th International Cost Engineering Congress, London, England, October 3-6, 1982 (reduced 7/11 pages)***  
Bid prices and government estimate of \$230 million summaries, detailed breakdown of 18 aerospace projects/MLP #2, Pad piping and cable/how to make conceptual estimate for construction management (CM). #9 AGES
14. ***Construction Management Problem of Murphy's International Airport, Florida Section, 12th Annual AACE Winter Symposium, Orlando, FL, January 13-14, 1983***
15. ***Cost Containment and Aerospace Construction, (P 12-15) 22nd Space Congress, Cocoa Beach, FL, April 23-26, 1985***
16. ***Cost Containment and KSC Shuttle Facilities, AACE 29th Annual Meeting, Denver, Colorado, July 1-3, 1985 (11 pages)***  
Control at four levels of project management of aerospace facilities with five examples at conceptual, criteria, and site; eight ways at Level II design, nine ways at Level III construction, and seven ways at Level IV operations and maintenance (O&M). #10 AGES
17. ***Estimating Labor Productivity, 30th Annual Meeting, AACE Transaction, Chicago, IL, 1986***  
Productivity survey of over 190 bid projects, location factors, with over 20 aerospace projects - Guam to West Africa, how to estimate labor efficiency. #11 AGES
18. ***Construction Economies of Rialto Hotel Office Complex, Florida Section AACE at mini--seminar, Melbourne, FL, January 11, 1986***
19. ***Government Conceptual Estimating for Contracting and Management, (P 11-9 to 18), 23rd Space Congress, Cocoa Beach, Florida April 22-25, 1986 (8 pages)***
20. ***Government Conceptual Estimating for Aerospace, AACE 30th Annual Meeting, Chicago, IL, June 29 - July 2, 1986 (10 pages)***  
Describes three volume aerospace construction price books with over 200 unit prices/elements and 100 system summaries 1974-1985, and sample conceptual estimate "how to do it." #12 AGES
21. ***Manual and Computer Estimating Trends, Florida Section 19th Annual Cost Engineering Symposium, Orlando, Florida, 1988, #13 AGES***  
Discusses surveys of aerospace, commercial computer estimating programs with a list of 14 computer estimating programs and trends towards computer estimating.

22. ***Construction Government Bid Estimates Compared to General Contractor Bid Estimates, 33rd Annual AACE Meeting, San Diego, California, June 25-28, 1989 (12 pages sent 1/28/93), #14 AGES***
- Shows twenty-one steps for making aerospace government bid estimates and compares to general contractors with mark-ups, feed back, and types of future estimates
23. ***Challenges in Computer Aided Design/Automatic Cost Estimating for Government and Aerospace Construction, PROCIEM '89 - Second annual conference on productivity through computer integrated engineering and manufacturing sponsored by the Florida High Technology and Industry Council, Orlando, FL, November 13-15, 1989***
24. ***The Challenges in Development of Automatic CAD for Government and Aerospace Construction Cost Estimating Systems, 11th International Cost Engineering Congress and the 6th Annual Meeting of the Association Francaise Des Ingenieurs ET Techniciens D'Estimation et de Planification (AFITEP), Paris, France, April 22-25, 1990. (72 pages)***
- CAD history, development of automatic computer cost estimating with thirty-nine steps to make CAD/AACE case study of propellant lab with CAD quantities and price using minicomputers by NASA/KSC/EG&G/Intergraph Team. #15 AGES
25. ***250 Cost Indexes and Escalation for Faster and More Accurate Cost Estimating, 33rd Space Congress, Cocoa Beach, Florida, April 23-26, 1996. #23 AGES***
26. ***The Challenges in Developing CAD/ACE - 34th Annual AACE International Transaction, June 24-27, 1990, presented and published, Boston, Massachusetts***
27. ***The Challenges in Developing CAD/ACE With Six Accomplishments - 22nd Annual Cost Engineering Symposium on CADD Estimating Systems, March 2, 1991, Florida Section AACE, Lake Buena Vista, Florida***
28. ***Challenges Developing PC Workstation CAD Estimating, Knoxville, TN, February 19, 1991 (27-53 pages, 1/1/91, copy of view graph presentation) Wattex***
29. ***KSC Estimating Specifications - G0002, overview KSC Cost Index, Lecture/presentation, University of Florida GCN-5625, March 31, 1994, Masters Program, Mark Meyer***
30. ***Aerospace Construction Cost Estimating, First World Cost Engineering and Project Management Congress, 12th International Cost Engineering Congress, Marriott's World Center, Orlando, FL, July 1, 1992. (20 pages sent 1/28/93)***
- Overview of twenty-one unique aerospace government estimating tools for more accurate government estimating with utilities, operations, and maintenance costs, wage rate analysis, efficiency and location factors. #17 AGES
31. ***SSPF Government Estimate Cost Analysis, KSC Cost Index and Escalation and Why, AACE and Certification Lecture/Presentation, Florida Institute of Technology, Melbourne, FL, April 1995***
32. ***Estimating and Bidding Space Station Processing Facility, 37th Annual AACE International Meeting, Dearborn, MI, July 13, 1993 (29 pages - dated 4/9/93)***

Case study of SSPF showing the successful application of over twenty aerospace estimating tools with 13 reasons how government estimates are accurate within 1.2% of low bidder with special summaries and some new exciting tools. #18 AGES

33. ***Space Station Facility Government Estimate, Society of Cost Estimates and Analysis, Orlando, FL, October 38, 1993 (26 pages - updated 8/31/93) #18 AGES***

Over ten aerospace cost analysis used developing government estimates, such as, number of bidders, structural steel, mark-ups, special conditions summary, projected low, medium, and high bids, cost per fiber foot, permis

34. ***Government Contractor and Computer Estimating Seminar Workbook - North Florida AACE Section 19th Computer Symposium, 1988***

*How to Do It Workbook for Making Estimating Better and Faster* - over fifteen ways, including spreadsheet analysis, for faster takeoff of unique aerospace government estimates for propellant lab

35. ***21 Steps for Making Bid Estimates, 45th Space Wing Construction Conference, Patrick Air Force Base, FL, June 22, 1994 (11 pages)***

How to make government, aerospace, and contractor bid estimates with forty references, PT&I, mark-ups and Davis Bacon rates - advantages and disadvantages of government contractor estimating (4 & 6) #19 AGES

36. ***240 Aerospace Cost Indexes and Escalation, AACE International 39th Annual Meeting, St. Louis, Missouri, June 25 - 28, 1995, (10-16 pages)***

Ten purposes, four reasons why, ten special features, analysis for long term escalation, ten summary comments, some surprising and exciting tools (16 references). #20 AGES

37. ***12 New Exciting Tools, AACE International 40th Annual Meeting, Vancouver, British Columbia, 1996 (#21 AGES)***

38. ***33 Aerospace Spin-Offs in Construction For More Accurate Cost Estimating, 33rd Space Congress, Cocoa Beach, FL, April 23-26, 1996, #22 AGES (on CD ROM)***

Includes 10 volumes of Aerospace Price Book, IV and VI Volumes of Seminar Workbooks, 4 Aerospace Estimate Seminars - 250 Cost Indexes

39. ***Construction Estimating and Bidding Strategy (Part II of Low Bidder Series), 41st Annual AACE International Meeting, Dallas, Texas, July 13-16, 1997 (9 pages - #24 GES)***

40. ***"34th Aerospace Spin-Off in Construction Cost Estimating" - a video, 34th Space Congress, Cocoa Beach, FL, April 29 - May 2, 1997 (#24 GES - 12 pages)***

41. ***Estimating Analysis and Bidding Strategy of Space Station Facility Using KSC Aerospace Spin-Off Tools, 33rd Space Congress, Cocoa Beach, FL, April 23 - 26, 1996, #25 GES***

42. ***Tools and Spin-Offs in Estimating and Bidding - National Conference and Educational Workshop, Society of Cost Estimating and Analysis (SCEA), June 27, 1996, Sheraton World, Orlando, Florida***

43. ***50 Engineer, Contractor, and Government Estimating Tools for Faster and More Accurate Cost Estimates, August 1997, Seminar IV Workbook, Vol. IV, pages 177-192, #25 AGES***

44. ***"16 Keys to Successful Bidding and Construction," Part V of video series - 1997-1998, for AACE, International, Cincinnati, Ohio, for 35th Space Congress - submitted to AACE, #26 GES***

45. **25 Aerospace Cost Factors – 37<sup>th</sup> Space Congress, Radisson Resort, Cape Canaveral, Florida, May 3, 2000, #26 AGES**
46. **50 Aerospace Cost Factors or 20 Ways to Reduce Aerospace Cost Factors – 2<sup>nd</sup> World Cost Engineering Congress, and 44<sup>th</sup> Annual Meeting AACE International & 16<sup>th</sup> ICEC Congress, Calgary AB Canada, June 25-28, 2000, Poster Presentation, #27 AGES**
47. **“Estimating & Bidding Strategies” to Florida Section AACEI at Siemens/Westinghouse Research Park, University of Central Florida, 3/16/2000**
48. **“Estimating Tools, References, Videos, Studies, Seminars, Secrets, Computer Programs, CD ROMs and Books,” to NASA Cost Modeling for 2<sup>nd</sup> and 3<sup>rd</sup> Generation Shuttles, Video Conference to other NASA Centers, Nov. 6 – 7, 2001.**
49. **“Government Computerized Cost Index for Logistics,” Presented by Gene Hajdaj and Joe Brown of Florida LOG 2001, March 9, 10, 2001, Orlando, Florida at Delta Resorts.**
50. **“52 Cost Factors for Facilities, GSE, and O&M/Hardening for Terrorist and Hurricanes,” by Gene Hajdaj and Joe Brown for Florida LOG –2002, February 5-16, 2002, Orlando, Florida at Delta Resorts.**
51. **“Computerized Cost Index for Escalation, 1974 - 2000, for Unit Prices and Multi-Billion Dollar Projects,” by Gene Hajdaj and Joe Brown – 45<sup>th</sup> AACE International Meeting, Pittsburgh, PA, June 24-27, 2001.**

### **Abstracts and Future Papers**

52. **“5,543 Claims and Change Orders for 176 projects for \$227,365,000 or 26 Ways to Reduce Changes**
53. **“17 Educational Tools for the 21<sup>st</sup> Century – with 17 Keys for Successful Bidding and Construction”**
54. **“90 Contractor, Government, & Industry Construction Cost Estimating Tools – 1967 – 2001”**
55. **“3 CD ROMs for Computerized Cost Estimating”**
56. **“How to Measure Labor Productivity, & Efficiencies with Location Factors from 260 Projects from 17 Countries for International, Government, and Aerospace”**
57. **“Construction & Cost Engineering or Cost Controls – 18 Problems and 105 Solutions or Corrective Actions”**
58. **“Proven Ways to Reduce Change Order Costs,” by Gene Hajdaj and Joe Brown, Abstracts and Outline - 2002**

Copies of technical papers are available at Kennedy Space Center Library in vertical files under KSC papers, AACE International, 1-800-858-COST, Morgantown, West Virginia, NASA Scientific and Technical Information (STI), BWI Airport, MA 21240; NASA Technical Briefs, and Space Congress, Cocoa Beach, FL, transactions 1985, 1986, 1996, 1997, & 2000, CD ROM or Center for Aerospace Information, telephone 301-621-0156.

AGES = Aerospace Government Estimating Series 1-27  
 GES = Government Estimating Series