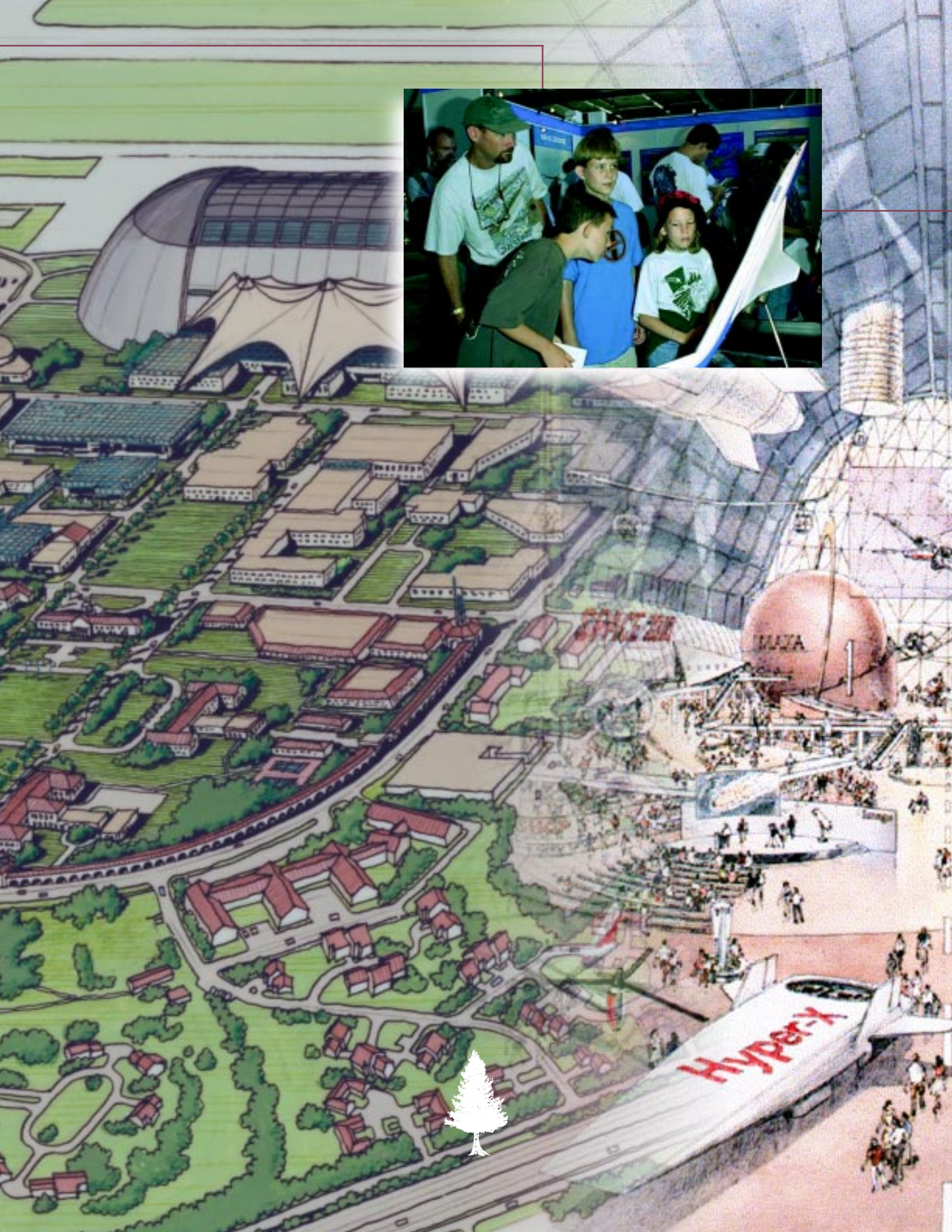
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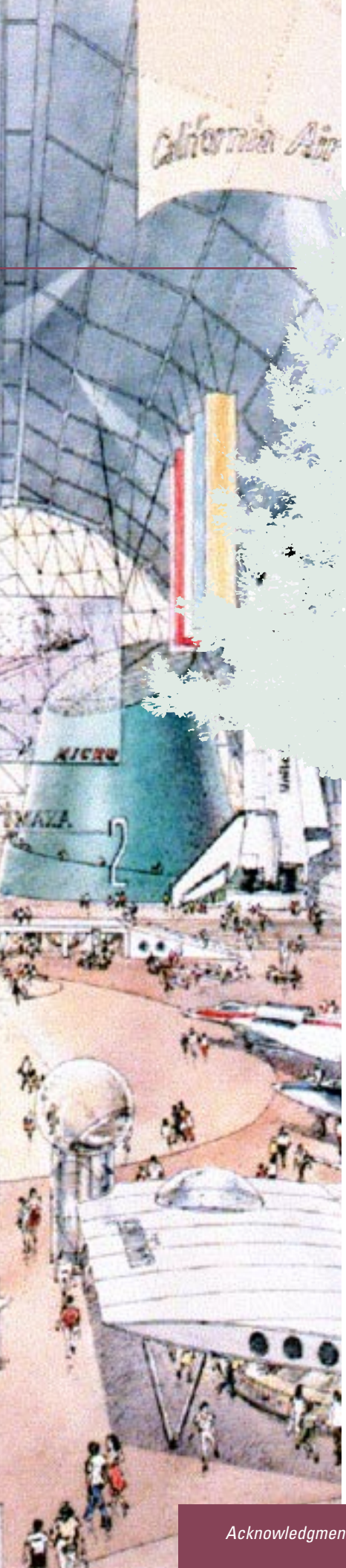

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Jack Boyd has played a unique role in the history of Ames, much like the role he played in producing this history of Ames. Jack joined Ames in 1947 as a specialist in supersonic aerodynamics. In 1966 he became technical assistant to Ames' director and since then—as he moved up to deputy director, associate director, NASA associate administrator for management, and well into his so-called retirement years—Jack has served as Ames' institutional memory and the embodiment of its ethos of personal respect. When recruiting leaders from outside of Ames, like Hans Mark and Harry McDonald, NASA headquarters asked Jack to lead the recruits on their first tours of the place. When Ames people struggling to build their programs needed insight into the cultures and personalities around NASA, they could rely on Jack's diplomacy and his friendships throughout the agency. He found funding for this history, introduced me to people of every generation around Ames, and helped me interpret both the bright and dark years of Ames history. Jack has always devoted time to education and outreach. Most important, Jack lives the belief that a strong sense of the past is great grounding in the rush to forge the future.

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This is a work for hire, though the only restrictions Ames placed on this manuscript was that it be done in time to celebrate their sixtieth anniversary. Some will argue that I failed to give adequate attention to significant projects, failed to give sufficient credit to everyone who dedicated their lives to the institution, or failed to capture all the struggles they had to overcome. A great many people have reviewed this manuscript for errors of fact, interpretation and balance, but any that remain are mine alone.

Ames' director Harry McDonald was a superb audience because he conveyed his intense curiosity—as he does so well with almost everybody's work—of learning more about Ames' past. My thanks to everyone who said they looked forward to reading what I wrote. Most made sure that I understood, however, that the best scientists, engineers and managers will keep coming to Ames—not because of its history of success that I was tasked to portray—but to work with the best minds and the best tools in their professions.

Bibliographical Essay

Two histories of Ames precede mine, and both were valuable sources in writing this history. The chapter on Ames as a NACA laboratory is based largely on Edwin P. Hartman, *Adventures in Research: A History of Ames Research Center, 1940-1965* (NASA SP-4302, 1970). Hartman directed the NACA field office in Los Angeles from 1940 to 1960, meaning he led Ames outreach when the audience that most concerned Ames was engineers in the aircraft industry. I also relied upon a series of memoranda summarizing Ames contributions, written by Ames branch chiefs, compiled by Manley J. Hood in February 1960, at the request of John F. Victory, and filed with the history collection in the vault of the Ames main library. On deicing work see Glenn E. Bugos, "Lew Rodert, Epistemological Liaison and Thermal De-Icing at Ames," in Pamela Mack, ed. *From Engineering Science to Big Science: The NACA and NASA Collier Trophy Research Project Winners* (NASA SP-4219, 1998) 29-58; on the blunt body concept see H. Julian Allen and A. J. Eggers, Jr., "A Study of the Motion and Aerodynamic Heating of Ballistic Missiles Entering the Earth's Atmosphere at High Supersonic Speed" (NACA TR 1381, 1958); on wind tunnels around the NACA see Donald D. Baals and William R. Corliss, *The Wind Tunnels of NASA* (NASA SP-440, 1981). On formation of the second laboratory within the NACA, see Alex Roland, *Model Research: The National Advisory Committee for Aeronautics, 1915-1958* (NASA SP-4103, 1985).

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The chapters on Ames since the 1970s are based largely upon materials found in the history collection at the Ames main library. *The Ames Astrogram* is the Ames employee newsletter and the best source on everything happening at Ames. The collected press releases

issued by the Ames external affairs office do a superb job of explaining media-intense activities like space probe encounters.

Since Ames researchers appreciate that they are making history, they have written a good many histories of their work. Most of these are for technical audiences and address specific projects. Ames' aircraft and rotorcraft projects are nicely summarized in Paul F. Borchers, James A. Franklin, and Jay W. Fletcher, *Flight Research at Ames: Fifty-Seven Years of Development and Validation of Aeronautical Technology* (NASA SP-1998-3300). On airborne astronomy see Wendy Whiting Dolci, "Milestones in Airborne Astronomy: From the 1920s to the Present," *AIAA Reprint 97-5609* (American Institute of Aeronautics and Astronautics, 1997); on computational fluid dynamics see Ames Research Center, *Numerical Aerodynamics Simulation* (NASA EP-262, 1989). The best history of Ames' contributions to VTOL aircraft is Martin D. Maisel, Demo J. Giulianetti, and Daniel C. Dugan, *The History of the Tilt Rotor Research Aircraft, from Concept to Flight* (NASA Monographs in Aerospace History, No. 17, 1999). See also David D. Few, *A Perspective on 15 Years of Proof-of-Concept Aircraft Development and Flight Research at Ames-Moffett by the Rotorcraft and Powered-Lift Flight Projects Division, 1970-1985* (NASA Reference Publication 1187, 1987); G. Warren Hall, *Flight Research at NASA Ames Research Center: A Test Pilot's Perspective* (NASA TM-100025, 1987), and Hans Mark, "Straight Up Into the Blue," *Scientific American* 277 (October 1997) 78-83.

In addition, many boxes of primary materials are stored at the Pacific Sierra regional facilities of the National Archives and Records Administration in San Bruno, California. The records of Ames during the NACA years are well organized and indexed. The records from 1958 to 1976 have been transferred to the National Archives, though they are not well indexed. Virtually all records since 1976 remain with the Federal Records Center or on-site at the Center. The available indexes can be found at the website for the California Digital Library.

A more complete guide to all materials available for researching topics in Ames history can be found at the website for the NASA Ames history project at http://history.arc.nasa.gov. This includes a research bibliography, list of Ames award winners, guides to primary materials at the National Archives and in the Ames main library, guides to materials at NASA headquarters, and list of interviewees.

Endnotes

These endnotes provide citations only for direct quotations. For sources for further reading, see the bibliographic essay, or the Ames history web site at http://history.arc.nasa.gov.

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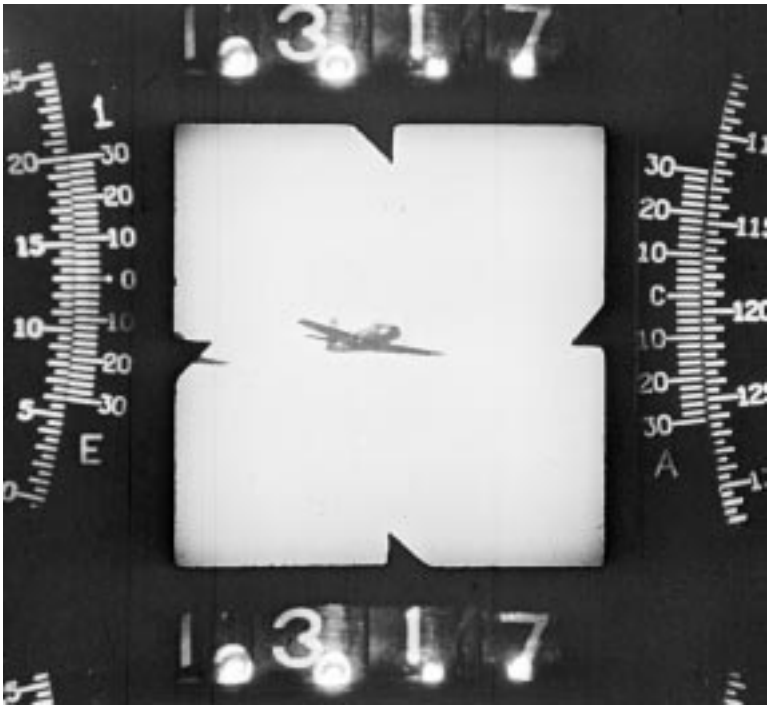

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215: AC93-0121-1, AC91-0121-1, AC91-0121-15
216: 81-HC-16, AC92-0408-8
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218: AC94-0183-15
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229: AC96-0392-8, ACD99-0180-2
230: ACD97-0063-2, ACD98-0200-2
231: AC96-0400-3, AC97-0249-7, NREN Patch (Art by Thomas Esposito)
232: ACD97-0367.1, AC93-0610
233: AC95-0054-112, AC97-0289-1
234: ACD98-0078-4

235: AC94-0195

236: AC96-0058-1, AC91-0005-18

237: AC96-0347-2, AC99-0095-1.1

238: AC97-0295-12

239: AC97-0295-1, AC97-0295-13

240: Astrobiology Art (Art by Cheryse Triano), AC96-0345-9, AC86-0614-28, ACD97-0336, AC96-0345-3

241: ACD96-0290-2

242: AC96-0110-1, AC94-0398-1

243: ACD99-0103-3, AC92-0401-3

244: AC99-0142-1, AC97-0195-22

245: AC99-0177-8, AC96-0252-16

247: AC96-0196-13

248: AC97-0388-1.2, ACD97-0047-2.1

249: ACD98-0027-3, ACD97-0047-6

250: ACD97-0047-4

251: AC96-0151, EC97-44294-2

252: AC94-0199-18

253: ACD98-0042-1

254: AC93-0284-7

255: AC99-0174

256: CASC

257: ACD98-0165-1

258: AC97-0316-247, AC97-0316-215

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260: AC99-0222-8

266: AAL-6013

267: EL-1996-00158

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