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X-33 DEVELOPMENT HISTORY (Contract NASW 97005)

PROGRESS REPORT #4

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ARCHIVE.

The problem of dealing with various types of proprietary documents, whether from the Lockheed Martin, the Skunk Works, McDonnell Douglas, Rockwell, and other corporations extant or extinct, remains unresolved. Nonetheless, as for Skunk Works records relating to the X-33, a meeting with Doug Stanley, Gene Austin, and Phil Sumrall on November 3, 1997, appears to have begun the slow process of obtaining documents. Current weekly RLV Highlights, and those back to April 1997 with a few exceptions, already have been received. The next step is to obtain the full weekly reports for which these are only the executive summary. A reading of the RLV Highlights shows that the complete versions of the weekly reports are likely to be the most useful in writing the X-33 history. In addition, copies of the quarterly reviews, and the various PDRs and CDRs, are needed. In short, while access issues appear resolved, the documents are not yet in hand.

The computerized archive finding aid has over 100 records at present. These records consist of X-33 photographs, press

releases, media clippings, and the small number of X-33 project records collected to date. Many more records have been collected to provide background for the eventual X-33 history, such as documents relating to the Access to Space study, the X-34, and the DC-X. During the month of December, these will be organized and integrated into the computer finding aid.

Some useful documents were collected during the October research trip to Southern California from Mike Hampson of Boeing (Rocketdyne), the Boeing (McDonnell Douglas) Reusable Space Vehicle program, and the Dryden Flight Research Center.

ORAL HISTORY INTERVIEWS.

To the ten interviews conducted prior to September 15, 1997, the date of the last Progress Report, were added interviews with (in alphabetical order) Gene Austin, Bob Baumgartner, Jim Berry, Pete Conrad, Dan Dumbacher, William Gaubatz, Mike Hampson, Ken Iliff, and Jerry Rising. To date, then, 19 interviews have been conducted; the contract calls for 15-20 interviews to be conducted each year. The nine new interviews represent 21 hours of interview time, bringing the total number of interview hours to 50. All tapes have been duplicated and are in the hands of the transcriber. Two interviews have been transcribed; a third is near completion. The transcriptions have undergone first

edit, and were mailed to the interviewees for review. One interview was returned with comments; it will be processed, and a copy will be placed in the archive.

During the October research trip to Southern California, several interviews were conducted; however, others were canceled by the Skunk Works, namely those with Wally Eshelman and David Urie, while others proved elusive for one reason or another. Ira Victor and Carl Ehrlich of Boeing's (Rockwell) Space Systems Division, Downey, California, declined to be interviewed until management decided on its level of participation in the X-33 history project. This issue has yet to be resolved; those within Boeing Rockwell who are helping are attempting to obtain not just access to employees for interviews, but to provide access to critical documents, as well. Steve Ishmael could not be reached.

Some future interviews include Ivan Bekey; Paul Klevat, who expressed a willingness to be interviewed during a subsequent trip to California; and "Scotty" Scottoline, formerly of Rockwell. Other pioneers to be interviewed include Max Hunter and Gary Hudson.

WEB SITE.

In addition to the annotated archniography of X-33 sites and pages, the web site now includes sections on the DC-X, the X-34,

and other RLV projects. The papers read at the October meeting of the Society for the History of Technology as part of a panel on the problems of documenting history of the recent past have been posted to the site, too. The most recent additions to the site are Fact Sheet #1, on the policy origins of the X-33 Program; the time line of key X-33 events in 1997; a draft outline of the monograph; and a brief description of the X-33 history project.

FACT SHEETS.

The first in series of historical fact sheets dealing with the origins of the X-33 Program has been prepared. It reviews events leading up to the NASA "Access to Space" study. The fact sheet has been distributed for comments, and is on its way to NASA Public Affairs for conversion into an "information sheet." The next fact sheet will discuss the "Access to Space" study itself.

MONOGRAPH.

The tentative title for the monograph is: "DC-X: Reusable Launch Vehicle Trailblazer." An abbreviated public version of the draft monograph outline is available on the web site. A legal issue must be addressed in order to obtain certain

documents relating to the DC-X.

In case this legal issue proves too great a hurdle to surmount in the immediate future, or if writing such a short piece (100 pages or less) on a topic worthy of an entire book, namely, the DC-X, the topic of the monograph will change to one less susceptible to legal and logistical problems. A likely candidate is the evolution of the aerospike engine.

INFORMATION FUNCTION.

During the past three months, a few queries regarding the X-33 were received, and answers were provided. For the most part, these queries came from the public, such as a request for a poster. One individual asked about receiving regular notices about updates in the web site. This seemed to be a reasonable request, so an e-mail list will be created of all individuals who have requested information about the X-33 history project to date. To it will be added all who ask about the project in the future, as well as NASA Headquarters individuals associated with the X-33 project or the X-33 history project plus those NASA public affairs people responsible for the X-33, and for whom I have e-mail addresses.

CHRONOLOGY OF KEY X-33 EVENTS IN 1997.

A draft chronology of key X-33 events for 1997 was prepared and distributed for comments via the web site. Because the chronology was required to be delivered before the end of 1997, the time line terminates at the end of November, while a number of 1996 events are included.

The chief criticism of the 1997 time line was that it did not contain important events that took place before 1997. At present, the chronology includes some 1996 events, including the announcement on July 2, 1996, that Lockheed Martin had won the Phase II contract. Eventually, past events back to the NASA Access to Space study will be added to the chronology, including the Phase I and Phase II Cooperative Agreement Notices. By creating the chronology as an html file, it can be updated from time to time, and links to relevant documents can be provided.

OTHER DELIVERABLES.

The paper on the X-33 history project read at the annual meeting of the Society for the History of Technology, held in Pasadena, California, 15-19 October 1997, as well as the panel organized around the theme of the difficulties of doing the history of the recent past, was enthusiastically received by the more than 40 individuals attending the session. Hardly any of those attending had full-time academic positions; the majority

were historians, archivists, and professional consultants with public agencies, such as NASA and RAND; a few were from foreign countries. The excitement generated by the session was contagious. Discussion consumed the session's 45 minutes, as well as the following half-hour coffee break, and, once the next session began to set up, discussion continued in smaller groups in the hallway.

A session containing a paper on the history of the X-33 has been proposed to the Public History Conference, April 1998, Austin, TX; approval has been received. Additional papers and panels dealing with the X-33 history have been proposed for the Business History Conference, March 1998, College Park, MD; and the National Aerospace Conference, "The World Takes Flight," to be held in Dayton, OH, on October 1-3, 1998. Although no response has been received to date from the organizers of the Business History Conference, the National Aerospace Conference proposal was accepted. These papers and panel session materials will be posted to the X-33 history web site.