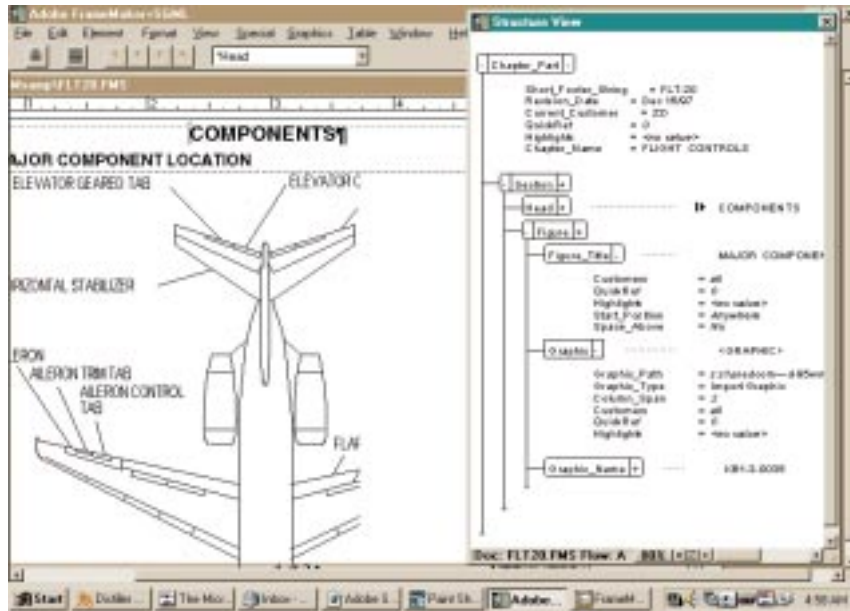


## ADOBE CUSTOMER SPOTLIGHT

# McDonnell Douglas

*Aircraft Manufacturer Slashes 30 Days  
From 55-Day Document Revision Cycle*

Adobe®  
FrameMaker®+SGML



McDonnell Douglas relies on Adobe FrameMaker+SGML software for a structured yet easy-to-use authoring environment to produce its Flight Crew Operating Manuals.

### Key Benefits

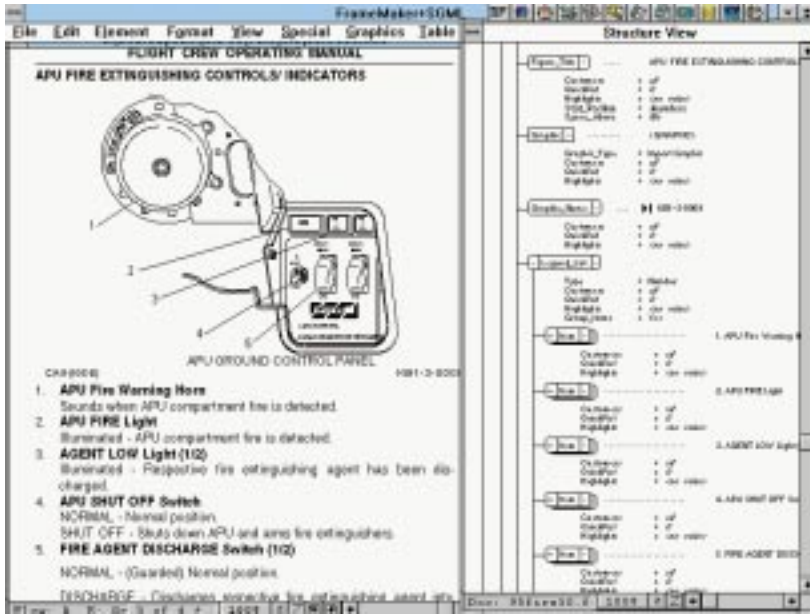
- With the WYSIWYG display of FrameMaker+SGML software, writers can spot errors on-line, reducing the number of printed drafts.
- FrameMaker+SGML is the only SGML tool that enables the company to format SGML elements without a complicated formatting program.
- Shaved 30 days off the production cycle, reducing lead times from 75 days to 45 days.
- Enabled 7 of 15 staff members to concentrate on reducing backlogged work.
- By reducing the production cycle time, a full return on investment is expected after production of the first book.
- Documents can be produced for paper and on-line distribution.

When a red light flashes in the cockpit of the new MD-95 commercial aircraft, the pilot depends on the emergency checklist and all documentation appearing in a familiar order and format. The aircraft is manufactured in Long Beach, Calif., by the McDonnell Douglas Corporation (now merged with the Boeing Company). The Flight Crew Operating Manual (FCOM) group produces all flight crew documentation for McDonnell Douglas commercial aircraft. There are approximately 50,000 pages per model, including all customer variations. Users include pilots and airline training departments of McDonnell Douglas customers. "For the safety of the crew and passengers, it's not only important that we complete the documentation on time, but that it be 100 percent accurate and updated regularly," says Vince Calderon, manager of the FCOM group.

To speed production of the documentation, increase productivity, and ensure consistent formatting, McDonnell Douglas is using Adobe FrameMaker+SGML software to create the new MD-95 FCOM. They plan to migrate "legacy data" for the MD-11, MD-90, and MD-80 aircraft to FrameMaker+SGML.

**FrameMaker+SGML Combines Formatting and Controlled Structure**  
McDonnell Douglas developed its legacy documentation using a proprietary page layout program. Writers cannot see the page layout until they print on a special printer with proprietary hardware and special fonts. There are crude display monitors that approximate the page layout view for the typesetters, but they require a trained eye for typeset code. The system technology is two decades old and quickly losing technical support. The process requires multiple drafts to detect and correct





Custom features, such as a "Legend List", created using the Frame Developer's Kit automate many of the formatting steps for Flight Crew Operating Manual writers.

necessary SGML elements and create page templates. The consultants used tools that are a standard part of FrameMaker+SGML software to create an Element Definition Document (EDD) that associates formatting rules with each SGML element, making it unnecessary for writers to apply formatting manually. The template developer also

---

*"No matter how carefully you write your style guide, people always find a way to deviate when they are trying to meet deadlines. With the automated formatting we've achieved with FrameMaker+SGML, there's no room for error, so the quality is much better."*

—Vince Calderon, manager of Flight Crew Operating Manual Group, McDonnell Douglas

---

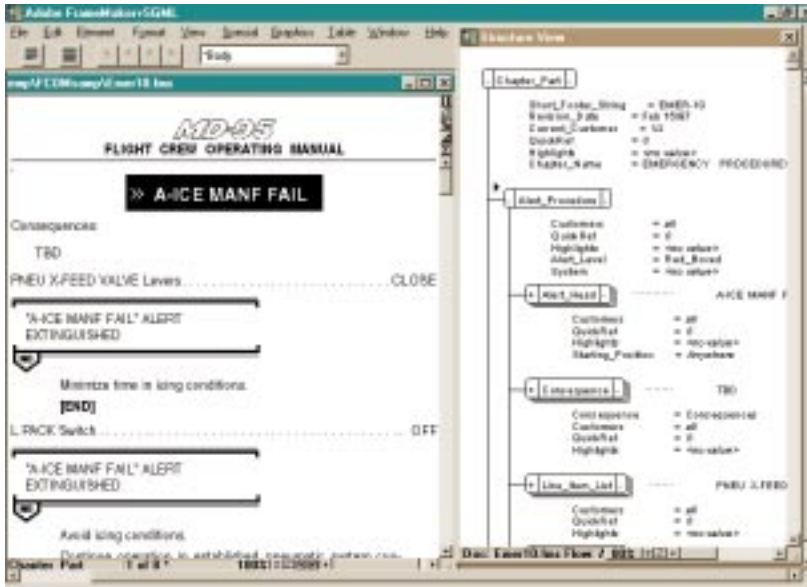
layout errors. Revising a 2,500- page manual requires 75 days. "When cockpit instrumentation was mechanical and changes took a long time, this lead time for documentation was acceptable," says Calderon. "Now that the pilot interface is primarily digital, changes to the interface can be made overnight. As a result, we are continually producing temporary revisions, which is a costly, interim solution."

The company began evaluating new publishing solutions, with the goal of significantly reducing document production time. A primary requirement was support for Standard Generalized Markup Language (SGML) because the Air Transport Association (ATA) has adopted this standard for data interchange. Other requirements included output of standard file formats, the ability to produce customized versions for different customers, and flexible formatting options to accommodate the documents' unique graphical, decision-tree procedure format. The company uses symbols such as arrows, diamonds, and vertical bars to enhance readability of its "if-then" procedures. Based on these criteria, McDonnell Douglas selected Adobe FrameMaker+SGML software.

"FrameMaker+SGML is the only SGML tool that enables us to format documents without complicated formatting programs," says Calderon. "Other SGML products required the development of a FOSI (formatting output specification instance), a complex set of instructions for laying out pages. The FOSI for our unique graphical format would have been a nightmare to create. With FrameMaker+SGML, we simply place symbols on reference pages and associate them with elements in the structure. Also, many SGML tools focus exclusively on on-line documentation and don't support the unique requirements of paper manuals. We develop a pilot's checklist with index tabs referencing a specific procedure. Navigating through our paper document is extremely critical and perhaps more important than electronic hyperlinking. FrameMaker+SGML combines formatting and structure, and supports our paper output requirements as well as our electronic delivery requirements."

**Frame® Developer's Kit Automates Formatting**  
 McDonnell Douglas hired Systems Engineering and Solutions, Incorporated (SESI), a systems developer, and Caxton Incorporated, a template designer, to identify the

created some customized features using the Frame Developer's Kit (FDK). One application will facilitate configuration control of various customer options using a variation of the "conditional text" feature already present in FrameMaker+SGML. In another example, if a writer assigns the "Legend List" tag to an SGML element, FrameMaker+SGML automatically formats it as a bold item with a numeric list item beneath. "Now we have consistent documents, and the writers don't need to concern themselves with formatting issues," says Calderon. "They just identify each SGML element with the proper tag. Eliminating the guesswork from formatting is especially important to us because numerous people touch a given document during its 20- to 30-year life span. No matter how carefully you write your style guide, people always find a way to deviate when they are trying to meet deadlines. With the automated formatting we've achieved with FrameMaker+SGML, there's less chance of error, so the quality is much better."



McDonnell Douglas writers can choose between working in Document View when writing long paragraphs, or Structure View when editing and manipulating elements.

### Choice of Views Suits Different Writing Assignments

The McDonnell Douglas writers, many of whom are pilots, learned to use FrameMaker+SGML software by attending a five-day class provided by the template developer. "The beauty of FrameMaker+SGML is that you can write in either Document View or Structure View," says Calderon. "It's up to the writer. For example, it's generally easier to write a long paragraph in Document View, and create lists or insert graphics references in Structure View." The interactive Structure View provides a graphical representation of the document's structure, and allows editing and manipulation of elements.

**Ability to Output Directly to PostScript® or Portable Document Format (PDF) Files**  
Another benefit of FrameMaker+SGML is its ability to output directly to Adobe PostScript format. "We create books using the Book feature, print to PostScript files,

and send the files to a Xerox® printer," says Calderon. "The files from our legacy system could only be printed on a proprietary printer. We're secure in the knowledge that we can take the files to nearly any printer in the world." The Book feature provides a way to organize any number of files so that they can be processed together, facilitating operations, such as page numbering; paragraph and figure numbering; cross-reference resolution; table of contents, index, and list generation; and batch printing.

"We plan eventually to create Adobe PDF files from our FrameMaker+SGML documents, using Adobe Acrobat® 3.0 software, and give our customers a choice. The key benefit of PDF is that users cannot change the format or page layout, which we very carefully designed for usability."

### Return on Investment After Producing One Book

"With FrameMaker+SGML, seven of the 15 people it normally requires to process a revision have been freed to do other tasks that were backlogged because of time constraints," says Calderon. "Writers can type their own pages without specialized typesetting code, and we don't need as extensive a quality cycle to check typesetting accuracy. The combination of SGML and the Book feature ensures that text is structured correctly and output in the proper order. "The other primary benefit is enhanced quality. Because the document is structured and the rules are in the template, the style is locked, and there's less room for error."

So far, McDonnell Douglas has used FrameMaker+SGML software to produce revisions to several chapters of the MD-95 Flight Crew Operating Manual. "With FrameMaker+SGML software, we've shaved 30 days off the production cycle, reducing lead times from 75 days to 45 days," says Calderon. In 1997, the group will produce its first full book, for the new MD-95 aircraft, using the new system. "Even with the six months it required to develop the EDD and template, we anticipate achieving return on investment with the first full book," says Calderon.

#### McDonnell Douglas Systems At-a-Glance

##### Hardware

PCs running Windows NT® 4.0  
Xerox printer

##### Software

Adobe FrameMaker+SGML,  
Adobe Frame Developer's Kit

Adobe Systems Incorporated  
345 Park Avenue  
San Jose, CA 95110-2704 USA

Adobe Systems Europe Limited  
Adobe House, Mid New Culltins  
Edinburgh EH11 4DU  
Scotland, United Kingdom

Adobe Systems Co., Ltd.  
Yebisu Garden Place Tower  
4-20-3 Ebisu, Shibuya-ku  
Tokyo 150 Japan

WorldWideWeb  
www.adobe.com

Adobe, the Adobe logo, Acrobat, Frame, FrameMaker, and PostScript are trademarks of Adobe Systems Incorporated. Microsoft, Windows, and Windows NT are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. All other trademarks are the property of their respective owners.

© 1997 Adobe Systems Incorporated. All rights reserved. Printed in the USA. CS1445 10/97