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6M-HA
September 30, 1992

MEETING NOTICE

DATE: October 8, 1992

TIME: 8:00 —— 9:00

LOCATION: 7-206 Building
61B2 6th floor West

SUBJECT/PURPOSE: Develop 737 Rudder PCU Retrofit Strategy

REQUESTED BY:	Jim Hutton	74-02	965-0982
COORDINATED BY:	Bob Gertmla	6M-HA	234-55752

ATTENDEES:

✓ Bernie Turner	6M-HA	Flight Controls
~~Jim Hutton~~	~~74-02~~	~~Rtn. Tecimology~~
✓ FAXED Dave Doring	6M-KJ	Reliability
✓ George Dial	6M-WL	Product Safety
✓ Kryn DeJonge	2H-80	Service Engr.
✓ Tom Harrington	6M-HW	Stability & Cont.
✓ Tom Heineman	6M-HA	Flt. Controls DER
✓ Ken Usui	69-10	Airworthiness
✓ Rick Krantz	6M-HA	Flight Controls
✓ Mike Hewett	14-HA	Pilot DER
✓ Amy Forner	14-HM	Air Safety Invest
✓ Al Umphenour	2H-30	Post Prod Eng
~~Al John~~	~~76-52~~	~~Legal~~
✓ Mary McCoy	39-HR	Materiel Buyer

cc:

~~Jim Metzer~~	~~6M-KA~~	~~Flight Controls~~
✓ Barry Latter	74-20	Rtn. Engineering
Harry Arnold	74-39	~~Chief Engineer~~

EXHIBIT 119 10-25-91

EXHIBIT

BOD 010550

12-3-01

737 MAIN RUDDER PCU - DUAL SERVO VALVE RETROFIT
STRATEGY MEETING - OCTOBER 8, 1992

GOALS OF MEETING

- DEVELOP CONSENSUS ON RETROFIT PLAN TO PRESENT TO VP's
- PROVIDE SUPPORTING FACTS & DATA

Jim - This is the pitch I used in the 10-8 mtg. Notes on pages were made during meeting discussion. NO NUMBERS SHOWN HEREON ARE FINAL!

J-EL 10-12

BOD 01051

FACTS AND SUPPORTING DATA

- 3 FUNDAMENTAL FACTS TO GET ACROSS TO VP's
  - WE HAVE A PROBLEM
  - WE DON'T NEED TO GROUND THE FLEET
  - WE DO NEED A RETROFIT PROGRAM TO FIX IT

CONFIDENTIAL
Subject to Protective Order in Cause Consolidated Under
MDL Docket No. 1625, In re Air Crash Near Colorado Springs, Colorado on March 3, 1991;
C.A. No. 94-N-1518 (D. Colo.)
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- SUPPORTING DATA
  - VALVE DOESN'T MEET FAIL-SAFE DESIGN INTENT
    - SINGLE VALVE JAM GIVES POTENTIAL FOR REVERSAL
    - FAILURE ANALYSIS SAYS SINGLE VALVE JAMS ONLY REDUCE MAX RATE
  - HAZARD ASSESSMENT
    - LOSS OF CONTROL JUDGED TO BE ON THE ORDER OF 10^{-8} -> 10^{-10}
    - NO KNOWN REVERSALS IN FLEET HISTORY OF 5×10^{7} HOURS
    - THIS MEANS WE DON'T NEED TO PANIC
    - DOES NOT MEAN WE DON'T NEED TO FIX IT

NEED TO PROVIDE AT LEAST QUALITATIVE INFO ON WHAT EVENTS MAKE THIS UP.

CONFIDENTIAL
Subject to Protective Order in Cases Consolidated Under
MDL Docket No. 1022, In re Air Crash Near Colorado Springs, Colorado on March 3, 1991
C.A. No. 91-K-910 (D. Colo.)
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RETROFIT OPTIONS

FLEET EXPOSURE ≈ 2500 APL ~~X~~

~~EXPOSURE HOURS~~

OPTION	PROS		CONS
(1) DO NOTHING - REPLACE VALVE ONLY AT CUSTOMER REQUEST	MINIMUM COST	$X = \frac{60000}{2}$	HIGH SAFETY CONCERN. CERTIFICATION ISSUE.
(2) RETROFIT @ NEXT PCU ~~OFF~~ REMOVAL - LIMIT TO 15k HRS OR 7 YRS, WHICHEVER OCCURS FIRST	REDUCES SAFETY CONCERN NO AOGs MORE EVENLY DISTRIBUTES PCU RETROFIT IN TIME INTERVAL.	$X = \frac{15000}{2}$	HIGHER COST TO PARKER AND/OR BOEING.
(3) CURRENTLY PROPOSED 4 YR PROGRAM	REDUCES CONCERN FURTHER NO AOGs	$X = \frac{12000}{2}$	HIGHER COST TO ALL. HIGH PARKER WORKLOAD
(4) 2-3 YR A.D. PROGRAM	MIN SAFETY CONCERN	$X = \frac{6000}{2}$	UNDUE CUST. PENALTY. AOGs - LACK OF PARTS. HIGHEST COST TO ALL.

- ADDITIONAL ISSUES FOR DISCUSSION
  - INTERIM AIRPLANE TEST @ "C" CHECK? → Chart on Airplane Test
  - REQUEST ~~A.D.~~ ~~FROM~~ KEY REGULATORY AGENCIES?
    MEETING WITH

THESE ITEMS AS BACKUP FOR PREV PAGE

Avg Removals = 11400 hr 737-100/-200

Chart on 5 in-svc Valve Jams & UAL special course.

BOD 010553