SUPPLEMENT TO
NASA Contractor Report 178407

COCKPIT DATA MANAGEMENT

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SUPPLEMENT
TABLE OF CONTENTS

		Page
APPENDIX A:	SCENARIO COMMUNICATION EVENTS AND DATA LINK IDU PAGES	A1
	A.1 Normal ILS Approach	A5
	A.2 ILS Approach With Weather Deviation	A27
	A.3 ILS Missed Approach With Reroute	A41
APPENDIX B:	DETAILED MISSION SCENARIOS	B1
	B.1 Normal ILS Approach, Conventional Flight Deck, Flying Pilot	B5
	B.2 Normal ILS Approach, Conventional Flight Deck, Nonflying Pilot	B33
	B.3 Normal ILS Approach, Advanced Flight Deck, Flying Pilot	B69
	B.4 Normal ILS Approach, Advanced Flight Deck, Nonflying Pilot	B99
	B.5 ILS Approach With Weather Deviation, Conventional Flight Deck, Flying Pilot	B133
	B.6 ILS Approach With Weather Deviation, Conventional Flight Deck, Nonflying Pilot	B141
	B.7 ILS Approach With Weather Deviation, Advanced Flight Deck, Flying Pilot	B151
	B.8 ILS Approach With Weather Deviation, Advanced Flight Deck, Nonflying Pilot	B161
	B.9 ILS Missed Approach With Reroute, Conventional Flight Deck, Flying Pilot	B171
	B.10 ILS Missed Approach With Reroute, Conventional Flight Deck, Nonflying Pilot	B179
	B.11 ILS Missed Approach With Reroute, Advanced Flight Deck, Flying Pilot	B187
	B.12 ILS Missed Approach With Reroute, Advanced Flight Deck, Nonflying Pilot	B197
	B.13 TCAS Encounter, Conventional Flight Deck, Flying Pilot	B207
	B.14 TCAS Encounter, Conventional Flight Deck, Nonflying Pilot	B213
	B.15 TCAS Encounter, Advanced Flight Deck, Flying Pilot	B217
	B.16 TCAS Encounter, Advanced Flight Deck, Nonflying Pilot	B223
APPENDIX C:	TLA DETAILED RESULTS	C1
	C.1 Normal ILS Approach	C3
	C.2 ILS Approach With Weather Deviation	C8
	C.3 ILS Missed Approach With Reroute	C12
	C.4 ILS Approach With TCAS Encounter	C16

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APPENDIX A

SCENARIO COMMUNICATION EVENTS AND DATA LINK IDU PAGES

APPENDIX A

This appendix defines the chronological sequence of communication related events in each TLA scenario, along with the data link IDU page formats utilized. The scenario time in seconds designating the specific events in each scenario can be utilized to locate the corresponding crew procedures and tasks in Appendix B, which is also referenced to scenario time.

This appendix is presented in three separate sections representing the normal ILS approach, the ILS approach with weather deviation, and the ILS missed approach with a reroute.

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A.1 NORMAL ILS APPROACH

Table A-1 defines the chronological sequence of normal ILS approach scenario events. The events apply to both VHF voice and data link scenarios. Figures A-1 through A-18 illustrate the data link IDU page formats which correspond to the Table A-1 events. The pages are in chronological sequence, with a pointer indicating pilot-selected options on each page.

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Table A-1. Normal ILS Approach

SCENARIO TIME (SECONDS)	COMMUNICATION EVENT
200.4	VECTOR TO DOWNWIND
375.4	DESCENT CLEARANCE
450.0	ETIS REQUEST
464.0	ETIS REPORT FOR ATL
525.4	VECTOR TO BASE
575.4	ILS APPROACH CLEARANCE
675.4	LANDING CLEARANCE
987.4	HANDOFF TO GROUND CONTROL
1014.4	TAXI INSTRUCTIONS

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```
MODE-S DATA LINK MENU

▷ <ATC UPLINKS          FLT PLAN>
  PENDING               CHANGE
 <REQUEST FOR            UPLINKS>
  CLEARANCE             RECEIVED
 <WEATHER
  REQUESTS
 <ETIS
  REQUESTS
 <PIREPS                CONFIGURE>
                            SYSTEM
                            RETURN>
```

Figure A-1

ATC UPLINK NO. 1

TURN RIGHT HEADING
270, DESCEND AND
MAINTAIN 6000 MSL.
MONITOR ATL APPROACH
ON 127.25 MHZ.
-END OF MESSAGE-

<UNABLE WILCO>

Figure A-2

```
MODE-S DATA LINK MENU

▷ < ATC UPLINKS          FLT PLAN >
    PENDING              CHANGE
  < REQUEST FOR            UPLINKS >
    CLEARANCE            RECEIVED
  < WEATHER
    REQUESTS
  < ETIS
    REQUESTS
  < PIREPS             CONFIGURE >
                           SYSTEM
                           RETURN >
```

Figure A-3

A T C U P L I N K N O . 1

D E S C E N D A N D M A I N T A I N

5 0 0 0 M S L .

- E N D O F M E S S A G E -

< U N A B L E W I L C O >

Figure A-4

```
MODE-S DATA LINK MENU

<ATC UPLINKS          FLT PLAN>
 PENDING              CHANGE
<REQUEST FOR           UPLINKS>
 CLEARANCE            RECEIVED
<WEATHER
 REQUESTS
▷<ETIS
 REQUESTS
<PIREPS              CONFIGURE>
                         SYSTEM
                         RETURN>
```

Figure A-5

E T I S R E Q U E S T F O R K A T L

▷ < F U L L R E P O R T U P D A T E >

A B C D E F G

H I J K L M N

O P Q R S T U

V W X Y Z

B K S P C L R E N T

Figure A-6

```
MODE-S DATA LINK MENU

▷ < ATC UPLINKS          FLT PLAN >
    PENDING              CHANGE
  < REQUEST FOR            UPLINKS >
    CLEARANCE            RECEIVED
  < WEATHER
    REQUESTS
  < ETIS
    REQUESTS
  < PIREPS             CONFIGURE >
                           SYSTEM
                           RETURN >
```

Figure A-7

```
   E T I S   R E P O R T   F O R   A T L
                 X X X X   Z
S K Y : 2 5 S C T / 4 0 B K N
V I S : 1 6
W I N D : 1 1 0 / 1 0 / G 1 7
T E M P / D P : 5 9 / - -
A L T : 2 9 . 8 4
A P P R : P A R A L L E L   I L S   A P R C H S
        R W 0 8 L / R W 0 9 R
R E M A R K S : - - - - - - - - - - - - - - - - -
```

▷ < P R I N T E R R E T U R N >

Figure A-8

```
MODE-S DATA LINK MENU

▷ <ATC UPLINKS          FLT PLAN>
  PENDING               CHANGE
 <REQUEST FOR           UPLINKS>
  CLEARANCE             RECEIVED
 <WEATHER
  REQUESTS
 <ETIS
  REQUESTS
 <PIREPS                CONFIGURE>
                        SYSTEM
                        RETURN>
```

Figure A-9

A T C U P L I N K N O . 1

T U R N L E F T H E A D I N G

1 8 0 .

- E N D O F M E S S A G E -

< U N A B L E W I L C O >

Figure A-10

```
MODE-S DATA LINK MENU

▷ <ATC UPLINKS          FLT PLAN>
  PENDING               CHANGE
 <REQUEST FOR             UPLINKS>
  CLEARANCE             RECEIVED
 <WEATHER
  REQUESTS
 <ETIS
  REQUESTS
 <PIREPS              CONFIGURE>
                          SYSTEM
                          RETURN>
```

Figure A-11

ATC UPLINK NO. 1

12 NM FROM OM, TURN
LEFT HEADING 110,
MAINTAIN 5000 MSL
UNTIL CROSSING BAHRR,
CLEARED FOR ILS RW8L
APPROACH, MONITOR
TOWER ON 119.5 AT
BAHRR.
-END OF MESSAGE-

<UNABLE WILCO>

Figure A-12

```
MODE-S DATA LINK MENU

▷ < ATC UPLINKS          FLT PLAN >
    PENDING              CHANGE
  < REQUEST FOR            UPLINKS >
    CLEARANCE            RECEIVED
  < WEATHER
    REQUESTS
  < ETIS
    REQUESTS
  < PIREPS             CONFIGURE >
                           SYSTEM
                           RETURN >
```

Figure A-13

ATC UPLINK NO. 1

NUMBER 3 FOR RW8L,
DC-9 3 NM AHEAD. WIND
110 AT 9, CLEARED TO
LAND RW8L.
-END OF MESSAGE-

<UNABLE WILCO>

Figure A-14

```
MODE-S DATA LINK MENU

▷ < ATC UPLINKS          FLT PLAN >
    PENDING              CHANGE
  < REQUEST FOR            UPLINKS >
    CLEARANCE            RECEIVED
  < WEATHER
    REQUESTS
  < ETIS
    REQUESTS
  < PIREPS             CONFIGURE >
                           SYSTEM
                           RETURN >
```

Figure A-15

ATC UPLINK NO. 1

EXIT RUNWAY NEXT
INTERSECTION. MONITOR
GROUND 121.9 WHEN
CLEAR OF RUNWAY.
-END OF MESSAGE-

<UNABLE WILCO>

Figure A-16

```
MODE-S DATA LINK MENU

▷ < ATC UPLINKS          FLT PLAN >
    PENDING              CHANGE
  < REQUEST FOR            UPLINKS >
    CLEARANCE            RECEIVED
  < WEATHER
    REQUESTS
  < ETIS
    REQUESTS
  < PIREPS             CONFIGURE >
                           SYSTEM
                           RETURN >
```

Figure A-17

A T C U P L I N K N O . 1

T A X I T O R A M P V I A
N E / S W T A X I W A Y .
- E N D O F M E S S A G E -

< U N A B L E W I L C O >

Figure A-18

A.2 ILS APPROACH WITH WEATHER DEVIATION

Table A-2 and Figures A-19 through A-29 illustrate the sequence of events and page formats for those portions of the weather deviation scenarios that differ from the normal ILS scenarios.

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Table A-2. Weather Deviation

SCENARIO TIME (SECONDS)	COMMUNICATION EVENT
200.4	VECTOR TO DOWNWIND
214.0	REQUEST FOR DIFFERENT HEADING
231.0	VECTOR FOR NEW HEADING
371.0	ADVISING CLEAR OF WEATHER
384.0	VECTOR TO RESUME ON COURSE

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```
MODE-S DATA LINK MENU

▷ <ATC UPLINKS          FLT PLAN>
  PENDING               CHANGE
 <REQUEST FOR           UPLINKS>
  CLEARANCE             RECEIVED
 <WEATHER
  REQUESTS
 <ETIS
  REQUESTS
 <PIREPS              CONFIGURE>
                          SYSTEM
                          RETURN>
```

Figure A-19

ATC UPLINK NO. 1

TURN RIGHT HEADING
270, DESCEND AND
MAINTAIN 6000 MSL.
MONITOR ATL APPROACH
ON 127.25 MHZ.
-END OF MESSAGE-

▷ <UNABLE WILCO>

Figure A-20

```
        UNABLE TO COMPLY
              DUE TO:
▷ <UNSAFE WX CONDX-STRONG
  RADAR ECHOES NEARBY
 <UNSAFE WX CONDX-SEVERE
  ICING THAT LOCATION
 <REQUIRED PERFORMANCE
  NOT AVAILABLE
 <CLEARANCE NOT
  CONSISTENT-VERIFY
```

Figure A-21

```
  REQUEST  FOR  CLEARANCE

< PUSHBACK    KEEP  CURRENT >
                CLEARANCE
< REQUEST    MODIFY  FLIGHT >
  FOR  TAXI    PLAN  ROUTE
< INITIAL    MAKING  MISSED >
  ROUTING            APPROACH
< ALTITUDE         FREE  TEXT >
  REQUEST
▷ < HEADING      RESUME  ORIG- >
  REQUEST        INAL  ROUTE
< SPEED REQUEST        RETURN >
```

Figure A-22

```
                 R E Q U E S T   F O R
                 N E W   H E A D I N G
     < R E Q U E S T   T O   F L Y
       H E A D I N G   X X X          1     2     3
▷    < R E Q U E S T   T E M P
       H E A D I N G   3 0 0          4     5     6
       - W I L L   A D V I S E -
                                      7     8     9

                                            0

                                          BKSP

                                  C L R       E N T
```

Figure A-23

```
MODE-S DATA LINK MENU

▷ < ATC UPLINKS          FLT PLAN >
    PENDING              CHANGE
  < REQUEST FOR            UPLINKS >
    CLEARANCE            RECEIVED
  < WEATHER
    REQUESTS
  < ETIS
    REQUESTS
  < PIREPS             CONFIGURE >
                           SYSTEM
                           RETURN >
```

Figure A-24

ATC UPLINK NO. 1

TURN RIGHT HEADING
300, DESCEND AND
MAINTAIN 6000 MSL.
MONITOR ATL APPROACH
ON 127.25 MHZ.
-END OF MESSAGE-

<UNABLE WILCO>

Figure A-25

```
MODE-S DATA LINK MENU

< ATC UPLINKS          FLT PLAN >
  PENDING              CHANGE
▷ < REQUEST FOR          UPLINKS >
  CLEARANCE            RECEIVED
< WEATHER
  REQUESTS
< ETIS
  REQUESTS
< PIREPS               CONFIGURE >
                           SYSTEM
                           RETURN >
```

Figure A-26

```
 REQUEST  FOR  CLEARANCE

<PUSHBACK    KEEP  CURRENT>
             CLEARANCE
<REQUEST    MODIFY  FLIGHT>
 FOR  TAXI   PLAN  ROUTE
<INITIAL    MAKING  MISSED>
 ROUTING           APPROACH
<ALTITUDE        FREE  TEXT>
 REQUEST
<HEADING     RESUME  ORIG->
 REQUEST     INAL  ROUTE
<SPEED REQUEST      RETURN>
```

Figure A-27

```
MODE-S DATA LINK MENU

▷ < ATC UPLINKS          FLT PLAN >
    PENDING              CHANGE
  < REQUEST FOR            UPLINKS >
    CLEARANCE            RECEIVED
  < WEATHER
    REQUESTS
  < ETIS
    REQUESTS
  < PIREPS             CONFIGURE >
                           SYSTEM
                           RETURN >
```

Figure A-28

A T C U P L I N K N O . 1

T U R N L E F T H E A D I N G 2 4 0
D E S C E N D A N D M A I N T A I N
5 0 0 0 M S L .
- E N D O F M E S S A G E -

< U N A B L E W I L C O >

Figure A-29

A.3 ILS MISSED APPROACH WITH REROUTE

Table A-3 and Figures A-30 through A-36 illustrate the sequence of events and page formats for those portions of the missed approach scenarios that differ from the normal ILS scenarios.

Table A-3. ILS Missed Approach With Reroute

SCENARIO TIME (SECONDS)	COMMUNICATION EVENT
870.4	ATC ADVISES PILOT REPORTED WIND SHEAR
882.0	ADVISES MISSED APPROACH AND REQUESTS HOLDING
928.0	ROUTE CLEARANCE TO HOLDING FIX

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```
MODE-S DATA LINK MENU

▷ <ATC UPLINKS          FLT PLAN>
  PENDING               CHANGE
 <REQUEST FOR             UPLINKS>
  CLEARANCE             RECEIVED
 <WEATHER
  REQUESTS
 <ETIS
  REQUESTS
 <PIREPS              CONFIGURE>
                          SYSTEM
                          RETURN>
```

Figure A-30

A T C U P L I N K N O . 1

X X X X Z , D C - 9 R E P O R T S
A B R U P T W I N D S H E A R A T
1 5 0 0 M S L , O N F I N A L
R W 8 L , M A X T H R U S T
R E Q U I R E D .
- E N D O F M E S S A G E -

▷ < A C K N O W L E D G E

Figure A-31

```
MODE-S DATA LINK MENU

<ATC UPLINKS          FLT PLAN>
 PENDING              CHANGE
<REQUEST FOR            UPLINKS>
 CLEARANCE            RECEIVED
<WEATHER
 REQUESTS
<ETIS
 REQUESTS
<PIREPS              CONFIGURE>
                         SYSTEM
                         RETURN>
```

Figure A-32

```
 REQUEST  FOR  CLEARANCE

<PUSHBACK    KEEP  CURRENT>
             CLEARANCE
<REQUEST    MODIFY  FLIGHT>
 FOR  TAXI   PLAN  ROUTE
<INITIAL    MAKING  MISSED>
 ROUTING           APPROACH
<ALTITUDE        FREE  TEXT>
 REQUEST
<HEADING     RESUME  ORIG->
 REQUEST     INAL  ROUTE
<SPEED REQUEST      RETURN>
```

Figure A-33

```
          M I S S E D   A P P R O A C H
                I N T E N T I O N S
    < R E T U R N   F O R
      A N O T H E R   A P P R        1     2     3
▷   < E N T E R   H O L D I N G
      F O R   1 5   M I N U T E S    4     5     6

                                     7     8     9

                                           0

                                         BKSP

                                  CLR            ENT
```

Figure A-34

```
MODE-S DATA LINK MENU

<ATC UPLINKS          FLT PLAN>
 PENDING              CHANGE
<REQUEST FOR            UPLINKS>
 CLEARANCE            RECEIVED
<WEATHER
 REQUESTS
<ETIS
 REQUESTS
<PIREPS              CONFIGURE>
                         SYSTEM
                         RETURN>
```

Figure A-35

ATC UPLINK NO. 1

CLEARED TO MACEY
INTERSECTION VIA AHN
R-322/10DME FIX DIR-
ECT MACEY. CLIMB AND
MAINTAIN FL180. HOLD
N.E. OF MACEY AS PUB-
LISHED. EXPECT FURTHER
CLEARANCE XXXX ZULU.
-END OF MESSAGE-

<UNABLE WILCO>

Figure A-36

APPENDIX B

DETAILED MISSION SCENARIOS

APPENDIX B

This appendix presents the detailed crew procedures and tasks representing the scenarios which were analyzed in this study. Time in seconds is referenced to the beginning of the scenario, as in Appendix A. Both pilot and copilot tasking is presented, first for the conventional flight deck and then for the advanced flight deck. The VHF voice tasking is presented first, followed by the data link tasking for each crew member.

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B.1 NORMAL ILS APPROACH—CONVENTIONAL FLIGHT DECK

Flying Pilot

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*****************************************
*                                       *
*        MISSION SCENARIO REPORT        *
*                                       *
*  MISSION - CURRENT NAS                *
*            ILS AP-BASE LN.            *
*                                       *
*  CONFIGURATION - 737 CONVNT FLT DCK   *
*                                       *
*  CREWMEMBER - PILOT                   *
*                                       *
*****************************************
```

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TIME INTERVAL (SECS) SINCE MISSION BEGINNING	START END	TOTAL ACTIVITY TIME	FLIGHT PHASE EVENT/PROCEDURE TASK		
0.00			16BL BASELINE FFD ILS APP		
0.00			16BL01		CROSS LOGEN INTERSECTION AT 250 KCAS AND 14000 FEET.ATL CENTR HAS PREVIOUSLY INSTRUCTED NASA 516 TO CONTACT ATL APPR AT LOGEN.VHF-2R HAS ALREADY BEEN TUNED TO CORRECT FREQ-126.9.
0.00			160080		CONTACT ATL APPROACH ON 126.9
9.40	13.40	4.00	1P16YY90		NASA 516,ATL APPR, ROGER.
0.00			140003		ALTITUDE CHANGE PROC
0.00	10.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
0.00	10.00	10.00	3L	02	MON VERTICAL SPEED INDIC
0.00	0.77	0.77	3H	02	MON CORR BARO ALT INDIC
0.00	10.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
0.00	2.82	2.82	4B	03	ACTUATE BOTH THROTTLES
0.00	2.37	2.37	3F	01	MON MACH NO INDIC
10.00			090039		FLIGHT INSTRUMENT SCAN - F
10.00	130.00	120.00	3R	67	MON PITCH ATTITUDE INDIC ON FDI
10.00	130.00	120.00	3L	03	MON VERTICAL SPEED INDIC
10.00	130.00	120.00	3A	11	MONITOR AIRSPEED INDIC
10.00	130.00	120.00	3S	15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
15.00			160013		SET NAV-1 TO RUNWAY 8L ILS -109.3
31.50	34.00	2.50	1P	12	MONITOR CALL-OUT
34.00	36.25	2.25	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
15.00			00EV30		PILOT EXT VIS SCAN
15.00	65.00	50.00	6A	12	PILOT EXTERNAL VISION SCAN
38.00			160039		SET ADF-1 TO CATTA -375KC
45.73	47.23	1.50	1P	02	MONITOR CALL-OUT
48.00			160040		SET ADF-2 TO FLANC -344
54.00	55.50	1.50	1P	02	MONITOR CALL-OUT
56.00			160038		SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007		ENGINE INSTRUMENT SCAN

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
65.00			16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
65.00	67.73	2.73	4B	07	MAKE MINOR THRUST ADJUSTMENT
65.00	70.00	5.00	4A	04	MANUALLY CONTROL A/C
70.00			160005		DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P160043		CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
85.00	86.00	1.00	1P	10	MONITOR CALL-OUT
87.00	87.80	0.80	1P	07	MONITOR REPORT
90.00	91.80	1.80	1P	13	MONITOR CALL-OUT
98.00	98.40	0.40	1P	16	MONITOR REPORT
70.00			00EV33		PILOT EXT VIS SCAN
70.00	170.00	100.00	8A	13	PILOT EXTERNAL VISION SCAN
100.00			160006		DESCENT AND APPROACH CHECKLIST - 2
102.00	102.90	0.90	1P	11	MONITOR CALL-OUT
103.00	106.54	3.54	7M	03	SET ENG NO.1 START SW TO FLT
106.54	108.28	1.74	7M	06	SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P160049		CALL OUT [FLIGHT]
111.00	112.10	1.10	1P	12	MONITOR CALL-OUT
114.20	114.50	0.30	1P	16	MONITOR REPORT
116.50	117.90	1.40	1P	12	MONITOR CALL-OUT
123.40	124.70	1.30	1P	09	MONITOR REPORT
128.00			160007		DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P	02	MONITOR CALL-OUT
146.00	147.90	1.90	1P	14	MONITOR CALL-OUT
148.00	150.57	2.57	3A	07	MON V-REF BUG SETTING
148.00	150.57	2.57	3A	05	SET V-REF BUG
151.00	154.00	3.00	3A	13	CAPT CHECK F.O.'S V-REF BUG SETTING
154.00	155.80	1.80	1P	08	MONITOR REPORT
157.80	159.90	1.30	1P	02	MONITOR CALL-OUT
130.00			090019		FLIGHT INSTRUMENT SCAN - D
130.00	190.00	60.00	3R	58	MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L	02	MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A	10	MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3S	15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
165.00			030007		ENGINE INSTRUMENT SCAN
150.00			00EV05		C/P EXT VIS SCAN
195.00			180048		MON ADF/RMI-2
195.00			180091		HANDOFF TO ATL FINAL APPROACH CONTROLLER
195.00	207.00	12.00	1P16XX01		N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
200.00			140007		HEADING CHANGE PROC.

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
200.00	210.00	10.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
200.00	210.00	10.00	4A 28	ACT FLT CONTROL TO CHANGE HDG
200.00	210.00	10.00	3L 02	MON VERTICAL SPEED INDIC
200.00	204.92	4.92	3S 11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
205.00	215.00	10.00	3R 56	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
200.00			16BL02	BEGIN TURN TO DOWN-WIND LEG
210.00			16BL03	DESCEND THRU 11000.
215.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
215.00	217.73	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
215.00	220.00	5.00	4A 64	MANUALLY CONTROL A/C
219.00			160092	TUNE ATL APPROACH ON 127.25
226.00			160093	CONTACT ATL APPROACH ON 127.25
231.90	235.90	4.00	1P16YY90	NASA 516,ATL APPR, ROGER.
220.00			090017	FLIGHT INSTRUMENT SCAN - C
220.00	250.00	30.00	3R 56	MON PITCH ATTITUDE INDIC ON FDI
220.00	250.00	30.00	3L 02	MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A 10	MONITOR AIRSPEED INDIC
220.00	250.00	30.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00			00EV09	C/P EXT VIS SCAN
250.00			090039	FLIGHT INSTRUMENT SCAN - F
250.00	370.00	120.00	3R 57	MON PITCH ATTITUDE INDIC ON FDI
250.00	370.00	120.00	3L 03	MON VERTICAL SPEED INDIC
250.00	370.00	120.00	3A 11	MONITOR AIRSPEED INDIC
250.00	370.00	120.00	3S 15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
268.00			030007	ENGINE INSTRUMENT SCAN
295.00			00EV09	C/P EXT VIS SCAN
330.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
330.00	332.73	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
330.00	335.00	5.00	4A 64	MANUALLY CONTROL A/C

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
340.00			00EV04	C/P EXT VIS SCAN
363.00			030007	ENGINE INSTRUMENT SCAN
370.00			16BL04	DESCEND THRU 8600.
370.00			160094	ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX94	NASA 515,DESCEND AND MAINTAIN 5000 FT.
370.00			090039	FLIGHT INSTRUMENT SCAN - F
370.00	490.00	120.00	3R 57	MON PITCH ATTITUDE INDIC ON FDI
370.00	490.00	120.00	3L 03	MON VERTICAL SPEED INDIC
370.00	490.00	120.00	3A 11	MONITOR AIRSPEED INDIC
370.00	490.00	120.00	3S 15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
385.00			00EV08	C/P EXT VIS SCAN
430.00			030007	ENGINE INSTRUMENT SCAN
440.00			00EV03	C/P EXT VIS SCAN
450.00			160002	TUNE ATIS -119.65
458.00	462.00	24.00	1A 15	MON VHF-1 COMM AUDIO
458.00	461.42	3.42	1P160001	MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42	465.98	4.56	1P160002	FIVE HUNDRED SCATTERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.98	470.54	4.56	1P160003	TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P160004	. ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARALLEL APPROACHES IN
475.10	479.66	4.56	1P160005	OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CONTROLLER ON INITIAL
479.66	481.94	2.28	1P160006	CONTACT YOU HAVE INFORMATION LIMA.]
460.00			160048	MON ADF/RMI-2
460.00			16BL05	CROSS FT NDB
465.00			00EV09	C/P EXT VIS SCAN
470.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
470.00	472.73	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
470.00	475.00	5.00	4A 64	MANUALLY CONTROL A/C
480.00			160003	SET ALTIMETER BARO SETTING TO 29.84
480.00	483.50	3.50	1P 13	MONITOR CALL-OUT
484.00			140032	ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04	MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03	SET ALTIMETER BARO SETTING CONTROL

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
490.00			090017	FLIGHT INSTRUMENT SCAN - C	
490.00	520.00	30.00	3R	58	MON PITCH ATTITUDE INDIC ON FDI
490.00	520.00	30.00	3L	02	MON VERTICAL SPEED INDIC
490.00	520.00	30.00	3A	10	MONITOR AIRSPEED INDIC
490.00	520.00	30.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
513.00			030007	ENGINE INSTRUMENT SCAN	
519.00			180041	MON VOR/RMI-1	
519.00	521.00	2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00	5G	05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			180095	VECTOR FOR BASE LEG FROM ATL APPROACH	
520.00	525.00	5.00	1P16XX95		NASA 515,TURN LEFT HEADING 180.
523.00			140007	HEADING CHANGE PROC.	
523.00	533.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
523.00	533.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
523.00	533.00	10.00	3L	02	MON VERTICAL SPEED INDIC
523.00	527.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
528.00	538.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
523.00			16BL06	BEGIN TURN TO BASE	
533.00			140007	HEADING CHANGE PROC.	
533.00	543.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
533.00	543.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
533.00	543.00	10.00	3L	02	MON VERTICAL SPEED INDIC
533.00	537.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
538.00	548.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
540.00			140023	REPORT 1000 FT TO LEVEL OFF	
542.00	543.70	1.70	1P	11	MONITOR CALL-OUT
543.00			140007	HEADING CHANGE PROC.	
543.00	553.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
543.00	553.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
543.00	553.00	10.00	3L	02	MON VERTICAL SPEED INDIC
543.00	547.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
548.00	558.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
550.00			00EV03	C/P EXT VIS SCAN	
555.00			090003	FLIGHT INSTRUMENT SCAN - A	
555.00	565.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
555.00	565.00	10.00	3L	02	MON VERTICAL SPEED INDIC
555.00	565.00	10.00	3A	10	MONITOR AIRSPEED INDIC
555.00	565.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
565.00			160041	MON VOR/RMI-1	
565.00	567.00	2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
565.00	567.00	2.00	5G	05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00			160042	MON ADF/RMI-1	
569.00	571.00	2.00	5D	28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00	2.00	5D	29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			160096	VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL	
570.00	580.00	10.00	1P16XX96		MASA 515.12 MILES FROM OM.TURN LT HDG 110.MAINTAIN 5000 FT UNTIL CROSSING BAHRR
580.00	587.00	7.00	1P16ZZ96		CLEARED FOR ILS RUNWAY 8 LEFT APPROACH. CONTACT TOWER ON 119.5 AT BAHRR.
575.00			140007	HEADING CHANGE PROC.	
575.00	585.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
575.00	585.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
575.00	585.00	10.00	3L	02	MON VERTICAL SPEED INDIC
575.00	579.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
580.00	590.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
575.00			16BL07	TURN TO INTERCEPT FINAL APPR. COURSE	
585.00			140007	HEADING CHANGE PROC.	
585.00	595.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
585.00	595.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
585.00	595.00	10.00	3L	02	MON VERTICAL SPEED INDIC
585.00	589.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
590.00	600.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
587.00			160034	TUNE ATLANTA TOWER -119.5	

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
600.00			160079		MON INSTRUMENTS ON FINAL APP - F
600.00	610.00	10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
600.00	610.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
600.00	605.00	5.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
600.00	610.00	10.00	3A	10	MONITOR AIRSPEED INDIC
600.00	610.00	10.00	3H	06	MON ALTIMETER
600.00	610.00	10.00	3L	02	MON VERTICAL SPEED INDIC
607.00			160047		MON INSTRUMENTS ON FINAL APP
610.00			16AA02		SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BAHRR,LEVEL AT 5000 FT
610.00	612.01	2.01	3R	45	SET FD MODE SEL TO AUTO APP
613.00	614.21	1.21	3V	05	MON VOR LOC ANNUN LT AMBER
620.00	622.92	2.92	3R	41	SET FD PITCH MODE SEL TO ALT HOLD
621.00	622.21	1.21	3V	03	MON ALT HOLD ANNUN LT ON
658.00	659.21	1.21	3V	04	MON ALT HOLD ANNUN LT OFF
610.00			140003		ALTITUDE CHANGE PROC
610.00	620.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE ALT
610.00	620.00	10.00	3L	02	MON VERTICAL SPEED INDIC
610.00	610.77	0.77	3H	02	MON CORR BARO ALT INDIC
610.00	620.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
610.00	612.82	2.82	4B	03	ACTUATE BOTH THROTTLES
610.00	612.37	2.37	3F	01	MON MACH NO INDIC
610.00			16BL08		LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			160047		MON INSTRUMENTS ON FINAL APP
620.00			16AA03		ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BAHRR
620.00	622.50	2.50	4B	05	SET THRUST LEVERS TO IDLE
623.00			160037		CAPTURE ILS LOC BEGIN TURN TO HDG 090
625.60	626.90	1.30	1P	02	MONITOR CALL-OUT
623.00	633.00	10.00	3R	16	MONTIOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
623.00	633.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
623.00	633.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
629.53	632.40	2.87	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
629.53	631.03	1.50	1P160058		CALL OUT-[I HAVE NAV 2 DATA]

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
627.00	628.21	1.21	3V	06	MON LOC ANNUN LT GREEN AND GLD SLP AMBER
633.00	643.00	10.00	3R	16	MONTIOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
633.00	643.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
633.00	643.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
627.00			160047		MON INSTRUMENTS ON FINAL APP
637.00			160047		MON INSTRUMENTS ON FINAL APP
643.00			160045		ANNUNCIATOR RECALL
645.00			160073		CONTROL A/C ON FINAL APPROACH - C (5)
645.00	650.00	5.00	4A	30	ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
645.00			160079		MON INSTRUMENTS ON FINAL APP - P
645.00	655.00	10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
645.00	655.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
645.00	650.00	5.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
645.00	655.00	10.00	3A	10	MONITOR AIRSPEED INDIC
645.00	655.00	10.00	3H	06	MON ALTIMETER
645.00	655.00	10.00	3L	02	MON VERTICAL SPEED INDIC
647.00			160047		MON INSTRUMENTS ON FINAL APP
650.00			160073		CONTROL A/C ON FINAL APPROACH - C (5)
650.00	655.00	5.00	4A	30	ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
655.00			160041		MON VOR/RMI-1
655.00	657.00	2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00	2.00	5G	05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00			160042		MON ADF/RMI-1
657.00	659.00	2.00	5D	28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
657.00	659.00	2.00	5D	29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00			160048		MON ADF/RMI-2
660.00			168L09		REACH 210 KCAS
660.00			160054		ACQUIRE GLIDESLOPE
662.00	664.58	2.58	3R	60	MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
662.60	663.60	1.00	1P	10	MONITOR CALL-OUT
664.58	665.79	1.21	3V	09	MON GLIDE SLOPE ANNUN LT GREEN
664.00			160061		CONTACT TOWER FOR FINAL LANDING CLEAR-ANCE
674.40	681.40	7.00	1B	19	MON VHF-2 COMM AUDIO
674.40	678.40	4.00	1P160040		MON RADIO COMM - [NASA 515, NO. 3 FOR 9L.DC-9 3 MI AHEAD.WIND 110
678.40	681.40	3.00	1P160041		AT NINE.CLEARED TO LAND RW 9L.

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
664.00				16BL10	CROSS BAHRR	
670.00				160072	CONTROL AIRCRAFT ON FINAL APP - B(240)	
670.00	910.00		240.00	4A	30	ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
684.00				160011	SET FLAPS TO FLAPS 1	
684.00	684.70		0.70	1P160058		CALL OUT -[FLAPS 1]
689.00	689.70		0.70	1P	10	MONITOR CALL-OUT
691.00	691.44		0.44	7F	30	MON ENG NO 2 EPR IND
691.00	691.44		0.44	7F	25	MON ENG NO 1 EPR IND
670.00				160080	MON INSTRUMENTS ON FINAL APP - P	
670.00	700.00		30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
670.00	700.00		30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
670.00	700.00		30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
670.00	700.00		30.00	3A	10	MONITOR AIRSPEED INDIC
670.00	700.00		30.00	3H	06	MON ALTIMETER
670.00	700.00		30.00	3L	02	MON VERTICAL SPEED INDIC
685.00				16BL11	REACH 190 KCAS	
694.00				160017	SET FLAPS TO FLAPS 5	
694.00	694.70		0.70	1P160061		CALL OUT -[FLAPS 5]
694.00				160018	FLAP SET PROCEDURE	
700.03	700.73		0.70	1P	10	MONITOR CALL-OUT
701.00	701.44		0.44	7F	25	MON ENG NO 1 EPR IND
701.44	701.88		0.44	7F	30	MON ENG NO 2 EPR IND
699.00				030007	ENGINE INSTRUMENT SCAN	
700.00				160080	MON INSTRUMENTS ON FINAL APP - P	
700.00	730.00		30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
700.00	730.00		30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
700.00	730.00		30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
700.00	730.00		30.00	3A	10	MONITOR AIRSPEED INDIC
700.00	730.00		30.00	3H	06	MON ALTIMETER
700.00	730.00		30.00	3L	02	MON VERTICAL SPEED INDIC
708.00				16BL12	REACH 170 KCAS	
710.00				160047	MON INSTRUMENTS ON FINAL APP	
720.00				160047	MON INSTRUMENTS ON FINAL APP	
730.00				160047	MON INSTRUMENTS ON FINAL APP	
730.00				00EV21	PILOT EXT VIS SCAN	
730.00	735.00		5.00	8A	10	PILOT EXTERNAL VISION SCAN
740.00				160069	SET SPEED BRAKES	
740.00	743.26		3.26	4F	02	SET SPEED BRAKE LEVER TO ARM
740.00	740.73		0.73	4F	07	MONITOR SPEED BRAKE LEVER ARMED LT GREEN

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
744.00				160048	MON ADF/RMI-2	
745.00				160080	MON INSTRUMENTS ON FINAL APP - P	
745.00	775.00		30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
745.00	775.00		30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
745.00	775.00		30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
745.00	775.00		30.00	3A	10	MONITOR AIRSPEED INDIC
745.00	775.00		30.00	3H	06	MON ALTIMETER
745.00	775.00		30.00	3L	02	MON VERTICAL SPEED INDIC
745.00				16BL13	CROSS REIFF	
748.00				160070	SET AUTO BRAKES	
755.00				00EV01	C/P EXT VIS SCAN	
765.00				160047	MON INSTRUMENTS ON FINAL APP	
775.00				160047	MON INSTRUMENTS ON FINAL APP	
775.00				160080	MON INSTRUMENTS ON FINAL APP - P	
775.00	805.00		30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
775.00	805.00		30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
775.00	805.00		30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
775.00	805.00		30.00	3A	10	MONITOR AIRSPEED INDIC
775.00	805.00		30.00	3H	06	MON ALTIMETER
775.00	805.00		30.00	3L	02	MON VERTICAL SPEED INDIC
800.00				160058	REPORT RUNWAY IN SIGHT	
802.00	803.00		1.00	1P	10	MONITOR CALL-OUT
805.00				00EV21	PILOT EXT VIS SCAN	
805.00	810.00		5.00	6A	10	PILOT EXTERNAL VISION SCAN
808.00				160016	FLAP SET PROCEDURE	
814.03	814.73		0.70	1P	10	MONITOR CALL-OUT
815.00	815.44		0.44	7F	25	MON ENG NO 1 EPR IND
815.44	815.88		0.44	7F	30	MON ENG NO 2 EPR IND
808.00				160025	SET FLAPS TO FLAPS 15	
808.00	808.70		0.70	1P160062	CALL OUT -[FLAPS 15]	
812.00				160042	MON ADF/RMI-1	
812.00	814.00		2.00	5D	26	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00		2.00	5D	29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00				160059	CROSS RWY 08 OUTER MARKER	
815.00	815.72		0.72	3V	11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80		1.80	1P160075	CALL OUT -[GEAR DOWN AND LANDING CHECK-LIST]	
815.00	817.10		2.10	3N	03	START ELAPSED TIME INDIC

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SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
815.00			168L14	CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049	MON RADIO ALTIMETER
820.00			160060	EXTEND LANDING GEAR
820.00			160080	MON INSTRUMENTS ON FINAL APP - P
820.00	850.00	30.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
820.00	850.00	30.00	3S 17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
820.00	850.00	30.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
820.00	850.00	30.00	3A 10	MONITOR AIRSPEED INDIC
820.00	850.00	30.00	3H 06	MON ALTIMETER
820.00	850.00	30.00	3L 02	MON VERTICAL SPEED INDIC
845.00			160062	LANDING CHECKLIST
847.00	847.60	0.60	1P 10	MONITOR CALL-OUT
847.60	848.00	0.40	1P 14	MONITOR CALL-OUT
850.00	850.70	0.70	1P 10	MONITOR CALL-OUT
851.00	852.30	1.30	1P160079	CALL OUT -(ARMED - GREEN LIGHT)
854.50	855.20	0.70	1P 10	MONITOR CALL-OUT
855.20	856.20	1.00	1P 10	MONITOR CALL-OUT
858.20	858.60	0.40	1P 14	MONITOR CALL-OUT
858.60	859.70	1.10	1P 12	MONITOR CALL-OUT
850.00			00EV21	PILOT EXT VIS SCAN
850.00	855.00	5.00	8A 10	PILOT EXTERNAL VISION SCAN
855.00			160080	MON INSTRUMENTS ON FINAL APP - P
855.00	885.00	30.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
855.00	885.00	30.00	3S 17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
855.00	885.00	30.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
855.00	885.00	30.00	3A 10	MONITOR AIRSPEED INDIC
855.00	885.00	30.00	3H 06	MON ALTIMETER
855.00	885.00	30.00	3L 02	MON VERTICAL SPEED INDIC
865.00			00EV02	C/P EXT VIS SCAN
877.00			160047	MON INSTRUMENTS ON FINAL APP
885.00			00EV21	PILOT EXT VIS SCAN
885.00	890.00	5.00	8A 10	PILOT EXTERNAL VISION SCAN
889.00			030007	ENGINE INSTRUMENT SCAN
890.00			160080	MON INSTRUMENTS ON FINAL APP - P
890.00	920.00	30.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
890.00	920.00	30.00	3S 17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
890.00	920.00	30.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
890.00	920.00	30.00	3A 10	MONITOR AIRSPEED INDIC
890.00	920.00	30.00	3H 06	MON ALTIMETER

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
890.00	920.00	30.00	3L 02	MON VERTICAL SPEED INDIC
895.00			160049	MON RADIO ALTIMETER
900.00			00EV04	C/P EXT VIS SCAN
923.00			160065	DESCEND THRU -DECISION HEIGTH
925.38	926.38	0.80	1P 11	MONITOR CALL-OUT
924.00			160066	CONTROL AIRCRAFT THRU TOUCHDOWN
924.00	950.00	26.00	8A 08	CAPT VIEW THRU NO.1 WINDOW
924.00	950.00	26.00	4A 68	MANUALLY CONT A/C
925.00			160064	CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	3V 13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15	CROSS MIDDLE MARKER
930.00			00EV02	C/P EXT VIS SCAN
930.00			090003	FLIGHT INSTRUMENT SCAN - A
930.00	940.00	10.00	3R 10	MON PITCH ATTITUDE INDIC ON FDI
930.00	940.00	10.00	3L 02	MON VERTICAL SPEED INDIC
930.00	940.00	10.00	3A 10	MONITOR AIRSPEED INDIC
930.00	940.00	10.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
940.00			160047	MON INSTRUMENTS ON FINAL APP
941.00			16BL16	CROSS RW THRESHOLD
950.00			00EV02	C/P EXT VIS SCAN
950.00			160068	TOUCHDOWN
950.00	952.50	2.50	4B 08	SET THRUST LEVERS TO IDLE
950.00	1025.00	75.00	4A 31	MANUALLY CONTROL A/C
952.50	973.50	21.00	4C 01	SET THRUST REVERSER LEVERS TO ON
974.00	976.76	2.76	4C 02	SET THRUST REVERSER LEVERS TO OFF
978.00	981.26	3.26	4F 01	SET SPD BRAKE LEVER TO DOWN
950.00	1025.00	75.00	4M 04	ACTUATE NOSE GEAR STEERING USING RUDDER PEDALS
950.00	1025.00	75.00	8A 01	VIEW RUNWAY AHEAD
950.00			16BL17	TOUCHDOWN
950.00			090003	FLIGHT INSTRUMENT SCAN - A
950.00	960.00	10.00	3R 10	MON PITCH ATTITUDE INDIC ON FDI
950.00	960.00	10.00	3L 02	MON VERTICAL SPEED INDIC
950.00	960.00	10.00	3A 10	MONITOR AIRSPEED INDIC
950.00	960.00	10.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
960.00			160047	MON INSTRUMENTS ON FINAL APP
970.00			00EV02	C/P EXT VIS SCAN
970.00			090003	FLIGHT INSTRUMENT SCAN - A

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
970.00	980.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
970.00	980.00	10.00	3L	02	MON VERTICAL SPEED INDIC
970.00	980.00	10.00	3A	10	MONITOR AIRSPEED INDIC
970.00	980.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
984.00			160071		HANDOFF TO GROUND CONTROL -121.9
984.00	990.00	6.00	1S	18	MON VHF-2 COMM AUDIO
984.00	987.50	3.50	1P160087		MON RADIO COMM - [NASA 515,EXIT RUN- WAY NEXT INTERSEC- TION. CONTACT GROUND
987.50	990.00	2.50	1P160088		POINT NINER WHEN CLEAR OF RUNWAY, OVER]
1004.00	1007.50	3.50	1S	18	MON VHF-2 COMM AUDIO
1004.00	1007.50	3.50	1P160091		MON RADIO COMM - [NASA 515, ATLANTA GROUND, TAXI TO RAMP VIA NORTHEAST=SOUTH-
1007.50	1008.50	1.00	1P160092		WEST TAXIWAY, OVER]
990.00			080003		FLIGHT INSTRUMENT SCAN - A
990.00	1000.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
990.00	1000.00	10.00	3L	02	MON VERTICAL SPEED INDIC
990.00	1000.00	10.00	3A	10	MONITOR AIRSPEED INDIC
990.00	1000.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
1010.00			00EV03		C/P EXT VIS SCAN

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* UNSHIFTED    *
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*                                       *
*          MISSION SCENARIO REPORT      *
*                                       *
*  MISSION - MD-S DATA LINK             *
*            ILS AP-BASE LN.            *
*                                       *
*  CONFIGURATION - 737 CONVMT FLT DCK   *
*                                       *
*  CREWMEMBER - PILOT                   *
*                                       *
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TIME INTERVAL (SECS) SINCE MISSION BEGINNING	START	END	TOTAL ACTIVITY TIME	FLIGHT PHASE EVENT/PROCEDURE TASK		
0.00				16DL DATA LINK FFD ILS AP		
0.00				16DL01		CROSS LOGEN INTERSECTION AT 250 KCAS AND 14000 FEET.ATL CENTR HAS PREVIOUSLY INSTRUCTED NASA 515 TO MONITOR ATL APPROACH ON 126.9 AT LOGEN. VHF-2R HAS BEEN SET.
0.00				16DL90		MONITOR ATL APPROACH ON 126.9/VHF-2R
0.00				140003		ALTITUDE CHANGE PROC
0.00	10.00		10.00		4A	29 ACT FLT CONTROL TO CHANGE ALT
0.00	10.00		10.00		3L	02 MON VERTICAL SPEED INDIC
0.00	0.77		0.77		3H	02 MON CORR BARO ALT INDIC
0.00	10.00		10.00		3R	10 MON PITCH ATTITUDE INDIC ON FDI
0.00	2.82		2.82		4B	03 ACTUATE BOTH THROTTLES
0.00	2.37		2.37		3F	01 MON MACH NO INDIC
10.00				090039		FLIGHT INSTRUMENT SCAN - F
10.00	130.00		120.00		3R	57 MON PITCH ATTITUDE INDIC ON FDI
10.00	130.00		120.00		3L	03 MON VERTICAL SPEED INDIC
10.00	130.00		120.00		3A	11 MONITOR AIRSPEED INDIC
10.00	130.00		120.00		3S	15 MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
15.00				160013		SET NAV-1 TO RUNWAY 8L ILS -109.3
31.50	34.00		2.50		1P	12 MONITOR CALL-OUT
34.00	36.25		2.25		5G	04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
15.00				00EV30		PILOT EXT VIS SCAN
15.00	65.00		50.00		8A	12 PILOT EXTERNAL VISION SCAN
38.00				160039		SET ADF-1 TO CATTA -375KC
45.73	47.23		1.50		1P	02 MONITOR CALL-OUT
49.00				160040		SET ADF-2 TO FLANC -344
54.00	55.50		1.50		1P	02 MONITOR CALL-OUT
58.00				160036		SET DECISION HEIGTH ON RADIO ALTIMETER
64.00				030007		ENGINE INSTRUMENT SCAN
65.00				16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
65.00	67.73	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
65.00	70.00	5.00	4A 04	MANUALLY CONTROL A/C
70.00			160005	DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P160043	CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
85.00	86.00	1.00	1P 10	MONITOR CALL-OUT
87.00	87.80	0.80	1P 07	MONITOR REPORT
90.00	91.80	1.80	1P 13	MONITOR CALL-OUT
98.00	98.40	0.40	1P 16	MONITOR REPORT
70.00			00EV33	PILOT EXT VIS SCAN
70.00	170.00	100.00	8A 13	PILOT EXTERNAL VISION SCAN
100.00			160006	DESCENT AND APPROACH CHECKLIST - 2
102.00	102.90	0.90	1P 11	MONITOR CALL-OUT
103.00	106.54	3.54	7M 03	SET ENG NO.1 START SW TO FLT
106.54	108.28	1.74	7M 06	SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P160049	CALL OUT [FLIGHT]
111.00	112.10	1.10	1P 12	MONITOR CALL-OUT
114.20	114.50	0.30	1P 16	MONITOR REPORT
116.50	117.90	1.40	1P 12	MONITOR CALL-OUT
123.40	124.70	1.30	1P 09	MONITOR REPORT
126.00			160007	DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P 02	MONITOR CALL-OUT
146.00	147.90	1.90	1P 14	MONITOR CALL-OUT
148.00	150.57	2.57	3A 07	MON V-REF BUG SETTING
148.00	150.57	2.57	3A 05	SET V-REF BUG
151.00	154.00	3.00	3A 13	CAPT CHECK F.O.<S V-REF BUG SETTING
154.00	155.60	1.60	1P 06	MONITOR REPORT
157.80	158.80	1.30	1P 02	MONITOR CALL-OUT
130.00			090019	FLIGHT INSTRUMENT SCAN - D
130.00	190.00	60.00	3R 56	MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L 02	MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A 10	MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3S 15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
165.00			030007	ENGINE INSTRUMENT SCAN
172.00			00EV03	C/P EXT VIS SCAN
195.00			160048	MON ADF/RMI-2
195.00			16DL01	HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	196.60	1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
200.40	210.40	10.00	1D16AA01	MONITOR UPLINK CALL-OUT FROM COPILOT
200.00			140007	HEADING CHANGE PROC.

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
200.00	210.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
200.00	210.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
200.00	210.00	10.00	3L	02	MON VERTICAL SPEED INDIC
200.00	204.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
205.00	215.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
200.00			16BL02		BEGIN TURN TO DOWN-WIND LEG
210.00			16BL03		DESCEND THRU 11000.
215.00			16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
215.00	217.73	2.73	4B	07	MAKE MINOR THRUST ADJUSTMENT
215.00	220.00	5.00	4A	64	MANUALLY CONTROL A/C
219.00			160002		TUNE ATL APPROACH ON 127.25
226.00			16DL03		MONITOR ATL APPROACH ON 127.25/VHF-2L
220.00			000017		FLIGHT INSTRUMENT SCAN - C
220.00	250.00	30.00	3R	58	MON PITCH ATTITUDE INDIC ON FDI
220.00	250.00	30.00	3L	02	MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A	10	MONITOR AIRSPEED INDIC
220.00	250.00	30.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00			00EV09		C/P EXT VIS SCAN
250.00			000039		FLIGHT INSTRUMENT SCAN - F
250.00	370.00	120.00	3R	57	MON PITCH ATTITUDE INDIC ON FDI
250.00	370.00	120.00	3L	03	MON VERTICAL SPEED INDIC
250.00	370.00	120.00	3A	11	MONITOR AIRSPEED INDIC
250.00	370.00	120.00	3S	15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
288.00			030007		ENGINE INSTRUMENT SCAN
295.00			00EV09		C/P EXT VIS SCAN
330.00			16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
330.00	332.73	2.73	4B	07	MAKE MINOR THRUST ADJUSTMENT
330.00	335.00	5.00	4A	64	MANUALLY CONTROL A/C
340.00			00EV04		C/P EXT VIS SCAN

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
363.00				030007	ENGINE INSTRUMENT SCAN
370.00				16BL04	DESCEND THRU 8600.
370.00				16DL94	ALTITUDE STEP DOWN
370.00	371.60		1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
371.60	373.60		2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
375.40	379.40		4.00	1D16AA94	MONITOR UPLINK CALL-OUT FROM COPILOT
370.00				090039	FLIGHT INSTRUMENT SCAN - F
370.00	490.00		120.00	3R 57	MON PITCH ATTITUDE INDIC ON FDI
370.00	490.00		120.00	3L 03	MON VERTICAL SPEED INDIC
370.00	490.00		120.00	3A 11	MONITOR AIRSPEED INDIC
370.00	490.00		120.00	3S 15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
385.00				00EV06	C/P EXT VIS SCAN
430.00				030007	ENGINE INSTRUMENT SCAN
450.00				16DL02	RECEIVE ATL ETIS TERMINAL INFORMATION
458.60	460.20		1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
460.20	462.20		2.00	1D16XX06	MON VISUAL ALERT DSP [MODE-S UPLINK PNDG] INDENTED BLUE
460.00				16BL05	CROSS FT NDB
470.00				16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
470.00	472.73		2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
470.00	475.00		5.00	4A 64	MANUALLY CONTROL A/C
480.00				160003	SET ALTIMETER BARO SETTING TO 29.54
480.00	483.50		3.50	1P 13	MONITOR CALL-OUT
484.00				140032	ALTIMETER BARO SET PROC.
484.00	486.65		2.65	3H 04	MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65		2.65	3H 03	SET ALTIMETER BARO SETTING CONTROL
490.00				090017	FLIGHT INSTRUMENT SCAN - C
490.00	520.00		30.00	3R 56	MON PITCH ATTITUDE INDIC ON FDI
490.00	520.00		30.00	3L 02	MON VERTICAL SPEED INDIC
490.00	520.00		30.00	3A 10	MONITOR AIRSPEED INDIC
490.00	520.00		30.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
513.00				030007	ENGINE INSTRUMENT SCAN
519.00				160041	MON VOR/RMI-1
519.00	521.00		2.00	5G 04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00		2.00	5G 05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00				16DL95	VECTOR FOR BASE LEG

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
520.00	521.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
521.60	523.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
525.40	528.40	3.00	1D16AA95		MONITOR UPLINK CALL-OUT FROM COPILOT
523.00			140007	HEADING CHANGE PROC.	
523.00	533.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
523.00	533.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
523.00	533.00	10.00	3L	02	MON VERTICAL SPEED INDIC
523.00	527.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
528.00	538.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
523.00			16BL06	BEGIN TURN TO BASE	
533.00			140007	HEADING CHANGE PROC.	
533.00	543.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
533.00	543.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
533.00	543.00	10.00	3L	02	MON VERTICAL SPEED INDIC
533.00	537.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
538.00	548.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
540.00			140023	REPORT 1000 FT TO LEVEL OFF	
542.00	543.70	1.70	1P	11	MONITOR CALL-OUT
543.00			140007	HEADING CHANGE PROC.	
543.00	553.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
543.00	553.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
543.00	553.00	10.00	3L	02	MON VERTICAL SPEED INDIC
543.00	547.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
548.00	558.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
550.00			00EV03	C/P EXT VIS SCAN	
555.00			090003	FLIGHT INSTRUMENT SCAN - A	
555.00	565.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
555.00	565.00	10.00	3L	02	MON VERTICAL SPEED INDIC
555.00	565.00	10.00	3A	10	MONITOR AIRSPEED INDIC
555.00	565.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
565.00			160041	MON VOR/RMI-1	
565.00	567.00	2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
565.00	567.00	2.00	5G 05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00			160042	MON ADF/RMI-1
569.00	571.00	2.00	5D 26	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00	2.00	5D 29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			16DL96	VECTOR TO FINAL APPR
570.00	571.60	1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
571.60	573.60	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
575.40	584.40	9.00	1D16AA96	MONITOR UPLINK CALL-OUT FROM COPILOT
584.40	591.40	7.00	1D16AA97	MONITOR UPLINK CALL-OUT FROM COPILOT
575.00			140007	HEADING CHANGE PROC.
575.00	585.00	10.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
575.00	585.00	10.00	4A 26	ACT FLT CONTROL TO CHANGE HDG
575.00	585.00	10.00	3L 02	MON VERTICAL SPEED INDIC
575.00	578.92	4.92	3S 11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
580.00	590.00	10.00	3R 58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
575.00			16BL07	TURN TO INTERCEPT FINAL APPR. COURSE
585.00			140007	HEADING CHANGE PROC.
585.00	595.00	10.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
585.00	595.00	10.00	4A 26	ACT FLT CONTROL TO CHANGE HDG
585.00	595.00	10.00	3L 02	MON VERTICAL SPEED INDIC
585.00	589.92	4.92	3S 11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
590.00	600.00	10.00	3R 58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
597.00			160034	TUNE ATLANTA TOWER -119.5
600.00			160079	MON INSTRUMENTS ON FINAL APP - P
600.00	610.00	10.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
600.00	610.00	10.00	3S 04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
600.00	605.00	5.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
600.00	610.00	10.00	3A 10	MONITOR AIRSPEED INDIC
600.00	610.00	10.00	3H 06	MON ALTIMETER
600.00	610.00	10.00	3L 02	MON VERTICAL SPEED INDIC
607.00			160047	MON INSTRUMENTS ON FINAL APP

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
610.00				16AA02		SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BAHRR,LEVEL AT 5000 FT
610.00	612.01		2.01	3R	45	SET FD MODE SEL TO AUTO APP
613.00	614.21		1.21	3V	05	MON VOR LOC ANNUN LT AMBER
620.00	622.92		2.92	3R	41	SET FD PITCH MODE SEL TO ALT HOLD
621.00	622.21		1.21	3V	03	MON ALT HOLD ANNUN LT ON
658.00	659.21		1.21	3V	04	MON ALT HOLD ANNUN LT OFF
610.00				140003		ALTITUDE CHANGE PROC
610.00	620.00		10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
610.00	620.00		10.00	3L	02	MON VERTICAL SPEED INDIC
610.00	610.77		0.77	3H	02	MON CORR BARO ALT INDIC
610.00	620.00		10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
610.00	612.92		2.92	4B	03	ACTUATE BOTH THROTTLES
610.00	612.37		2.37	3F	01	MON MACH NO INDIC
610.00				16BL06		LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00				160047		MON INSTRUMENTS ON FINAL APP
620.00				16AA03		ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BAHRR
620.00	622.50		2.50	4B	08	SET THRUST LEVERS TO IDLE
623.00				160037		CAPTURE ILS LOC BEGIN TURN TO HDG 090
625.80	626.90		1.30	1P	02	MONITOR CALL-OUT
623.00	633.00		10.00	3R	16	MONTIOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
623.00	633.00		10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
623.00	633.00		10.00	4A	29	ACT FLT CONTROL TO CHANGE HDG
629.53	632.40		2.87	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
629.53	631.03		1.50	1P160068		CALL OUT-[I HAVE NAV 2 DATA]
627.00	628.21		1.21	3V	06	MON LOC ANNUN LT GREEN AND GLD SLP AMBER
633.00	643.00		10.00	3R	16	MONTIOR INDICATION OF DEVIATION FROM LOCALIZER ON FDI
633.00	643.00		10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
633.00	643.00		10.00	4A	29	ACT FLT CONTROL TO CHANGE HDG
627.00				160047		MON INSTRUMENTS ON FINAL APP
637.00				160047		MON INSTRUMENTS ON FINAL APP
643.00				160045		ANNUNCIATOR RECALL
645.00				160073		CONTROL A/C ON FINAL APPROACH - C (5)

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OF POOR QUALITY

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
645.00	650.00	5.00	4A 30 ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
645.00			160079 MON INSTRUMENTS ON FINAL APP - P
645.00	655.00	10.00	3R 62 MONITOR LOCALIZER INDICATOR ON FDI
645.00	655.00	10.00	3S 04 MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
645.00	650.00	5.00	3R 63 MON GLIDE SLOPE ATT INDIC ON FDI
645.00	655.00	10.00	3A 10 MONITOR AIRSPEED INDIC
645.00	655.00	10.00	3H 06 MON ALTIMETER
645.00	655.00	10.00	3L 02 MON VERTICAL SPEED INDIC
647.00			160047 MON INSTRUMENTS ON FINAL APP
650.00			160073 CONTROL A/C ON FINAL APPROACH - C (5)
650.00	655.00	5.00	4A 30 ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
655.00			160041 MON VOR/RMI-1
655.00	657.00	2.00	5Q 04 MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00	2.00	5Q 05 MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00			160042 MON ADF/RMI-1
657.00	659.00	2.00	5D 28 MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
657.00	659.00	2.00	5D 29 MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00			160048 MON ADF/RMI-2
660.00			16BL09 REACH 210 KCAS
660.00			160054 ACQUIRE GLIDESLOPE
662.00	664.58	2.58	3R 60 MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
662.60	663.60	1.00	1P 10 MONITOR CALL-OUT
664.58	665.79	1.21	3V 09 MON GLIDE SLOPE ANNUN LT GREEN
664.00			16DL60 MONITOR ATL TOWER ON 119.5/VHF-2R
664.00			16BL10 CROSS BAHRR
670.00			16DL61 LANDING CLEARANCE
670.00	671.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
671.60	673.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
675.40	685.40	10.00	1D19AA40 MONITOR UPLINK CALL-OUT FROM COPILOT
670.00			160072 CONTROL AIRCRAFT ON FINAL APP - B(240)
670.00	910.00	240.00	4A 30 ACT FLT CONT TO ALIGNA/C WITH ATT INDICATORS
684.00			160011 SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P160058 CALL OUT -[FLAPS 1]
689.00	689.70	0.70	1P 10 MONITOR CALL-OUT
691.00	691.44	0.44	7F 30 MON ENG NO 2 EPR IND
691.00	691.44	0.44	7F 25 MON ENG NO 1 EPR IND
670.00			160080 MON INSTRUMENTS ON FINAL APP - P

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
670.00	700.00	30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
670.00	700.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
670.00	700.00	30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
670.00	700.00	30.00	3A	10	MONITOR AIRSPEED INDIC
670.00	700.00	30.00	3H	06	MON ALTIMETER
670.00	700.00	30.00	3L	02	MON VERTICAL SPEED INDIC
685.00			16BL11		REACH 190 KCAS
694.00			160017		SET FLAPS TO FLAPS 5
694.00	694.70	0.70	1P160061		CALL OUT -[FLAPS 5]
694.00			160018		FLAP SET PROCEDURE
700.03	700.73	0.70	1P	10	MONITOR CALL-OUT
701.00	701.44	0.44	7F	25	MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F	30	MON ENG NO 2 EPR IND
699.00			030007		ENGINE INSTRUMENT SCAN
700.00			160080		MON INSTRUMENTS ON FINAL APP - P
700.00	730.00	30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
700.00	730.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
700.00	730.00	30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
700.00	730.00	30.00	3A	10	MONITOR AIRSPEED INDIC
700.00	730.00	30.00	3H	06	MON ALTIMETER
700.00	730.00	30.00	3L	02	MON VERTICAL SPEED INDIC
706.00			16BL12		REACH 170 KCAS
710.00			160047		MON INSTRUMENTS ON FINAL APP
720.00			160047		MON INSTRUMENTS ON FINAL APP
730.00			160047		MON INSTRUMENTS ON FINAL APP
730.00			00EV21		PILOT EXT VIS SCAN
730.00	735.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
740.00			160069		SET SPEED BRAKES
740.00	743.26	3.26	4F	02	SET SPEED BRAKE LEVER TO ARM
740.00	740.73	0.73	4F	07	MONITOR SPEED BRAKE LEVER ARMED LT GREEN
744.00			160048		MON ADF/RMI-2
745.00			160080		MON INSTRUMENTS ON FINAL APP - P
745.00	775.00	30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
745.00	775.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
745.00	775.00	30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
745.00	775.00	30.00	3A	10	MONITOR AIRSPEED INDIC
745.00	775.00	30.00	3H	06	MON ALTIMETER
745.00	775.00	30.00	3L	02	MON VERTICAL SPEED INDIC
745.00			16BL13		CROSS REIFF

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
748.00			160070	SET AUTO BRAKES
755.00			00EV01	C/P EXT VIS SCAN
765.00			160047	MON INSTRUMENTS ON FINAL APP
775.00			160047	MON INSTRUMENTS ON FINAL APP
775.00			160080	MON INSTRUMENTS ON FINAL APP - P
775.00	805.00	30.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
775.00	805.00	30.00	3S 17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
775.00	805.00	30.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
775.00	805.00	30.00	3A 10	MONITOR AIRSPEED INDIC
775.00	805.00	30.00	3H 06	MON ALTIMETER
775.00	805.00	30.00	3L 02	MON VERTICAL SPEED INDIC
800.00			160058	REPORT RUNWAY IN SIGHT
802.00	803.00	1.00	1P 10	MONITOR CALL-OUT
805.00			00EV21	PILOT EXT VIS SCAN
805.00	810.00	5.00	6A 10	PILOT EXTERNAL VISION SCAN
808.00			160016	FLAP SET PROCEDURE
814.03	814.73	0.70	1P 10	MONITOR CALL-OUT
815.00	815.44	0.44	7F 25	MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F 30	MON ENG NO 2 EPR IND
808.00			160025	SET FLAPS TO FLAPS 15
808.00	808.70	0.70	1P160062	CALL OUT -[FLAPS 15]
812.00			160042	MON ADF/RMI-1
812.00	814.00	2.00	5D 28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	5D 29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			160059	CROSS RWY 08 OUTER MARKER
815.00	816.72	0.72	3V 11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P160075	CALL OUT -[GEAR DOWN AND LANDING CHECK-LIST]
815.00	817.10	2.10	3H 03	START ELAPSED TIME INDIC
815.00			16BL14	CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049	MON RADIO ALTIMETER
820.00			160060	EXTEND LANDING GEAR
820.00			160080	MON INSTRUMENTS ON FINAL APP - P
820.00	850.00	30.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
820.00	850.00	30.00	3S 17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
820.00	850.00	30.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
820.00	850.00	30.00	3A 10	MONITOR AIRSPEED INDIC
820.00	850.00	30.00	3H 06	MON ALTIMETER

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
820.00	850.00	30.00	3L	02	MON VERTICAL SPEED INDIC
845.00			160062	LANDING CHECKLIST	
847.00	847.60	0.60	1P	10	MONITOR CALL-OUT
847.60	848.00	0.40	1P	14	MONITOR CALL-OUT
850.00	850.70	0.70	1P	10	MONITOR CALL-OUT
851.00	852.30	1.30	1P160079		CALL OUT -[ARMED - GREEN LIGHT]
854.50	855.20	0.70	1P	10	MONITOR CALL-OUT
855.20	856.20	1.00	1P	10	MONITOR CALL-OUT
856.20	856.60	0.40	1P	14	MONITOR CALL-OUT
858.60	859.70	1.10	1P	12	MONITOR CALL-OUT
850.00			00EV21	PILOT EXT VIS SCAN	
850.00	855.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
855.00			160080	MON INSTRUMENTS ON FINAL APP - P	
855.00	885.00	30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
855.00	885.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
855.00	885.00	30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
855.00	885.00	30.00	3A	10	MONITOR AIRSPEED INDIC
855.00	885.00	30.00	3H	06	MON ALTIMETER
855.00	885.00	30.00	3L	02	MON VERTICAL SPEED INDIC
865.00			00EV02	C/P EXT VIS SCAN	
877.00			160047	MON INSTRUMENTS ON FINAL APP	
885.00			00EV21	PILOT EXT VIS SCAN	
885.00	890.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
889.00			030007	ENGINE INSTRUMENT SCAN	
890.00			160080	MON INSTRUMENTS ON FINAL APP - P	
890.00	920.00	30.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
890.00	920.00	30.00	3S	17	MON A/C HEADING RELATIVE TO SELECTED COURSE ON CI
890.00	920.00	30.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
890.00	920.00	30.00	3A	10	MONITOR AIRSPEED INDIC
890.00	920.00	30.00	3H	06	MON ALTIMETER
890.00	920.00	30.00	3L	02	MON VERTICAL SPEED INDIC
895.00			160049	MON RADIO ALTIMETER	
900.00			00EV04	C/P EXT VIS SCAN	
923.00			160065	DESCEND THRU -DECISION HEIGTH	
925.58	926.38	0.80	1P	11	MONITOR CALL-OUT
924.00			160066	CONTROL AIRCRAFT THRU TOUCHDOWN	
924.00	950.00	26.00	8A	06	CAPT VIEW THRU NO.1 WINDOW
924.00	950.00	26.00	4A	06	MANUALLY CONT A/C
925.00			160064	CROSS RWY OS MIDDLE MARKER	

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
925.00	926.91	1.91	3V 13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15	CROSS MIDDLE MARKER
930.00			00EV02	C/P EXT VIS SCAN
930.00			090003	FLIGHT INSTRUMENT SCAN - A
930.00	940.00	10.00	3R 10	MON PITCH ATTITUDE INDIC ON FDI
930.00	940.00	10.00	3L 02	MON VERTICAL SPEED INDIC
930.00	940.00	10.00	3A 10	MONITOR AIRSPEED INDIC
930.00	940.00	10.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
940.00			160047	MON INSTRUMENTS ON FINAL APP
941.00			16BL16	CROSS RW THRESHOLD
950.00			00EV02	C/P EXT VIS SCAN
950.00			160066	TOUCHDOWN
950.00	952.50	2.50	4B 06	SET THRUST LEVERS TO IDLE
950.00	1025.00	75.00	4A 31	MANUALLY CONTROL A/C
952.50	973.50	21.00	4C 01	SET THRUST REVERSER LEVERS TO ON
974.00	976.76	2.76	4C 02	SET THRUST REVERSER LEVERS TO OFF
978.00	981.26	3.26	4F 01	SET SPD BRAKE LEVER TO DOWN
950.00	1025.00	75.00	4M 04	ACTUATE NOSE GEAR STEERING USING RUDDER PEDALS
950.00	1025.00	75.00	6A 01	VIEW RUNWAY AHEAD
950.00			16BL17	TOUCHDOWN
950.00			090003	FLIGHT INSTRUMENT SCAN - A
950.00	960.00	10.00	3R 10	MON PITCH ATTITUDE INDIC ON FDI
950.00	960.00	10.00	3L 02	MON VERTICAL SPEED INDIC
950.00	960.00	10.00	3A 10	MONITOR AIRSPEED INDIC
950.00	960.00	10.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
960.00			160047	MON INSTRUMENTS ON FINAL APP
970.00			00EV02	C/P EXT VIS SCAN
970.00			090003	FLIGHT INSTRUMENT SCAN - A
970.00	980.00	10.00	3R 10	MON PITCH ATTITUDE INDIC ON FDI
970.00	980.00	10.00	3L 02	MON VERTICAL SPEED INDIC
970.00	980.00	10.00	3A 10	MONITOR AIRSPEED INDIC
970.00	980.00	10.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
984.00			16DL71	HANDOFF TO GROUND
984.00	985.60	1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
985.60	987.60	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY (MODE-S UPLINK PNDG) AMBER

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
989.40	997.40	8.00	1D16AA87 MONITOR UPLINK CALL-OUT FROM COPILOT
990.00			090003 FLIGHT INSTRUMENT SCAN - A
990.00	1000.00	10.00	3R 10 MON PITCH ATTITUDE INDIC ON FDI
990.00	1000.00	10.00	3L 02 MON VERTICAL SPEED INDIC
990.00	1000.00	10.00	3A 10 MONITOR AIRSPEED INDIC
990.00	1000.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
1000.00			16DL72 TUNE AND MONITOR ATL GRND ON 121.9/VHF-2L
1009.00			16DL73 TAXI CLEARANCE FROM
1009.00	1010.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
1010.60	1012.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
1014.40	1019.40	5.00	1D16AA88 MONITOR UPLINK CALL-OUT FROM COPILOT
1020.00			00EV01 C/P EXT VIS SCAN

B.2 NORMAL ILS APPROACH—CONVENTIONAL FLIGHT DECK

Nonflying Pilot

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* UNSHIFTED    *
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*                                       *
*        MISSION SCENARIO REPORT        *
*                                       *
*  MISSION - CURRENT NAS                *
*            ILS AP-BASE LN.            *
*                                       *
*  CONFIGURATION - 737 CONVNT FLT DCK   *
*                                       *
*  CREWMEMBER - COPILOT                 *
*                                       *
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NOV10 1986

TIME INTERVAL (SECS) SINCE MISSION START BEGINNING	END	TOTAL ACTIVITY TIME	FLIGHT PHASE EVENT/PROCEDURE TASK
0.00			16BL BASELINE FFD ILS APP
0.00			16BL01 CROSS LOGEN INTERSEC TION AT 250 KCAS AND 14000 FEET.ATL CENTR HAS PREVIOUSLY INSTR UCTED NASA 515 TO CONTACT ATL APPR AT LOGEN.VHF-2R HAS AL-READY BEEN TUNED TO CORRECT FREQ-126.9.
0.00			160090 CONTACT ATL APPROACH ON 126.9
0.00	1.45	1.45	1B 08 SET VHF-2 COMM TFR SW TO RIGHT
2.40	9.40	7.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
2.40	9.40	7.00	1P16XX90 ATL APP,NASA 515 DES CENDING TO 11000 FT WITH INFO LIMA.
9.40	13.40	4.00	1P16YY90 NASA 515,ATL APPR, ROGER.
0.00			140003 ALTITUDE CHANGE PROC
10.00			080039 FLIGHT INSTRUMENT SCAN - F
15.00			160013 SET NAV-1 TO RUNWAY 8L ILS -109.3
15.00	21.00	6.00	6B 08 RETREIVE CHARTS
21.00	26.00	5.00	6B160003 REVIEW CHARTS TO DETERMINE RUNWAY 08 ILS FREQ AND REQ VOR FREQ
26.00	31.08	5.08	5U 01 MON NAV-1 FREQ INDIC
26.00	29.00	3.00	5U 02 SET NAV-1 FREQ - WHOLE NO.S
29.00	31.08	2.08	5U 03 SET NAV-1 FREQ - FRACTIONS
31.50	34.40	2.90	1P160059 CALL OUT -[RUNWAY 8L ILS IS ON NAV 1]
31.50	33.77	2.27	5H 02 MON VOR POINTER NO.1 ON VOR/RMI 2 INDIC
15.00			00EV30 PILOT EXT VIS SCAN
36.00			160039 SET ADF-1 TO CATTA -375KC
36.00	41.00	3.00	5D 17 SET ADF NO.1 BFO SW TO OFF
41.00	41.77	0.77	5D 22 MON ADF NO.1 TUNING METER INDIC
41.77	43.75	1.98	5D 01 MONITOR ADF NO 1 FREQ INDIC
43.75	45.73	1.98	5D 02 SELECT ADF NO 1 FREQ INDIC
45.73	47.23	1.50	1P160065 CALL OUT -[CATTA ON ADF-1]
49.00			160040 SET ADF-2 TO FLANC -344
49.00	51.69	2.69	5E 17 SEL ADF NO.2 FREQ BAND .19-.40
52.00	53.98	1.98	5E 01 MON ADF NO 2 FREQ. INDIC
52.00	53.98	1.98	5E 02 SELECT ADF NO 2 FREQ

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
52.00	54.28	2.28	5E 20	MON ADF NO.2 TUNING METER INDIC
54.00	55.50	1.50	1P160066	CALL OUT -[FLANC ON ADF-2]
58.00			160038	SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007	ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F 25	MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F 30	MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F 21	MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F 22	MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F 31	MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F 32	MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F 23	MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F 24	MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F 33	MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F 34	MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F 09	MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F 10	MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F 18	MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F 11	MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F 19	MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F 12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
67.52	67.96	0.44	7F 20	MON NO 2 ENG VIBR AMPLITUDE INDIC
68.00			18AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
70.00			160005	DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P 02	MONITOR CALL-OUT
72.00	77.80	5.80	8B 02	RETREIVE CHECKLIST
78.00	83.00	5.00	8B 05	FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	8B 03	READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P160044	CALL OUT-[ANTI-ICE]
87.00	87.80	0.80	1P160045	CALL OUT-[NOT REQD]
88.00	90.00	2.00	8B 03	READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P160046	CALL OUT -[AIR CON-DITIONING AND PRES-SURIZATION]
92.00	94.67	2.67	7D 69	MON PASS CAB TEMP CONT SETTING
94.67	96.69	2.02	7D 70	MON CONT CAB TEMP CONT SETTING
96.69	97.86	1.17	7E 08	MON LDG ALT CNTR
98.00	98.40	0.40	1P160047	CALL OUT [SET]
70.00			00EV33	PILOT EXT VIS SCAN

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
100.00			160006		DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
102.00	102.90	0.90	1P160046		CALL OUT-[START SWITCHES]
108.50	109.00	0.50	1P	06	MONITOR REPORT
109.00	111.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
111.00	112.10	1.10	1P160050		CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G	17	SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P160051		CALL OUT -[ON]
114.50	116.50	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P160052		CALL OUT -[ALTIMETER AND INSTRUMENTS]
118.00	120.37	2.37	3H	02	MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H	05	F.O. CHECK CAPT<S ALTIMETER BARO SET AND INDICATED ALTI-TUDE
123.40	124.70	1.30	1P160053		CALL OUT-[SET AND CROSSCHECKED]
126.00			160007		DESCENT AND APPROACH CHECKLIST - 3
126.00	128.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P160054		CALL OUT-[EPR AND IAS BUGS]
128.00	131.00	3.00	8B010004		RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	136.00	5.00	8B160001		DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	136.32	2.32	7F	26	SET ENG NO 1 EPR BUG
136.32	136.32	2.00	7F	27	MON ENG NO 1 EPR BUG
136.32	140.64	2.32	7F	28	SET ENG NO 2 EPR BUG
138.64	140.64	2.00	7F	29	MON ENG NO 2 EPR BUG
141.00	146.00	5.00	8B160002		DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A	07	MON V-REF BUG SETTING
146.00	148.57	2.57	3A	05	SET V-REF BUG
146.00	147.90	1.90	1P160055		CALL OUT -[V-REF IS XXX KNOTS]
151.00	154.00	3.00	3A	12	F.O. CHECK CAPT'S V-REF BUG SETTING
154.00	155.60	1.60	1P160056		CALL OUT -[BUGS SET AND CROSS-CHECKED]
155.60	157.60	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
155.60	158.90	1.30	1P160057		CALL OUT -[CHECKLIST COMPLETED]
157.60	160.60	3.00	8B	06	STOW CHECKLIST
160.60	162.60	2.00	8B010005		STOW FLIGHT PLANNING REF. DATA MANUAL
130.00			090019		FLIGHT INSTRUMENT SCAN - D
165.00			030007		ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F	25	MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F	30	MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F	21	MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F	22	MON NO 2 ENG N1 IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
165.88	166.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F	23	MON NO 1 ENG N2 IND
166.32	166.76	0.44	7F	24	MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
166.76	167.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
168.52	168.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05		C/P EXT VIS SCAN
150.00	175.00	25.00	6A	11	PILOT EXTERNAL VISION SCAN
195.00			160048		MON ADF/RMI-2
195.00	197.26	2.26	6E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			160091		HANDOFF TO ATL FINAL APPROACH CONTROLLER
195.00	207.00	12.00	1P16XX91		N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
207.00	214.00	7.00	1P16YY91		515,ROGER,HDG 270, MAINTAIN 6000,APPR ON 127.25.
200.00			140007		HEADING CHANGE PROC.
200.00			16BL02		BEGIN TURN TO DOWN-WIND LEG
210.00			16BL03		DESCEND THRU 11000.
215.00			16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
219.00			160092		TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B	01	MON VHF-2L FREQ IND
219.00	221.90	2.90	1B	02	SET VHF-2L FREQ-WHOLE NO.S
221.88	223.88	1.98	1B	03	SET VHF-2L FREQ - FRACTIONS
226.00			160093		CONTACT ATL APPROACH ON 127.25
226.00	227.49	1.49	1B	05	SET VHF-2 COMM TFR SW TO LEFT
226.40	231.90	3.50	1A	10	ACT PUSH-TO-TALK SW
226.40	231.90	3.50	1P16XX93		ATL APPR,NASA 515 DESCENDING TO 6000.
231.90	235.90	4.00	1P16YY90		NASA 515,ATL APPR, ROGER.

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
220.00				090017		FLIGHT INSTRUMENT SCAN - C
240.00				00EV09		C/P EXT VIS SCAN
240.00	285.00		45.00	8A	12	PILOT EXTERNAL VISION SCAN
250.00				090039		FLIGHT INSTRUMENT SCAN - F
288.00				030007		ENGINE INSTRUMENT SCAN
288.00	288.44		0.44	7F	25	MON ENG NO 1 EPR IND
288.00	288.44		0.44	7F	30	MON ENG NO 2 EPR IND
288.44	288.88		0.44	7F	21	MON NO 1 ENG N1 IND
288.44	288.88		0.44	7F	22	MON NO 2 ENG N1 IND
288.88	289.32		0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32		0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76		0.44	7F	23	MON NO 1 ENG N2 IND
289.32	289.76		0.44	7F	24	MON NO 2 ENG N2 IND
289.76	290.20		0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20		0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64		0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
290.64	291.08		0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
290.64	291.08		0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
291.08	291.52		0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
291.08	291.52		0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
291.52	291.96		0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96		0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00				00EV09		C/P EXT VIS SCAN
295.00	340.00		45.00	8A	12	PILOT EXTERNAL VISION SCAN
330.00				16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 6000 FT.
340.00				00EV04		C/P EXT VIS SCAN
340.00	360.00		20.00	8A	10	PILOT EXTERNAL VISION SCAN
363.00				030007		ENGINE INSTRUMENT SCAN
363.00	363.44		0.44	7F	25	MON ENG NO 1 EPR IND
363.00	363.44		0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88		0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88		0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32		0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32		0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76		0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76		0.44	7F	24	MON NO 2 ENG N2 IND
364.76	365.20		0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
364.76	365.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F	12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
366.52	366.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04		DESCEND THRU 6000.
370.00			160094		ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX94		NASA 515,DESCEND AND MAINTAIN 6000 FT.
375.00	378.50	3.50	1A	10	ACT PUSH-TO-TALK SW
375.00	378.50	3.50	1P16YY94		515,ROGER,MAINTAIN 6000.
370.00			090039		FLIGHT INSTRUMENT SCAN - F
385.00			00EV06		C/P EXT VIS SCAN
385.00	425.00	40.00	6A	11	PILOT EXTERNAL VISION SCAN
430.00			030007		ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F	25	MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F	30	MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F	21	MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F	22	MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
440.00			00EV03		C/P EXT VIS SCAN
440.00	455.00	15.00	6A	10	PILOT EXTERNAL VISION SCAN
450.00			160002		TUNE ATIS -119.65
450.00	454.96	4.96	1A	07	MON VHF-1R FREQ IND

ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
450.00	452.01	2.01	1A 08	SET VHF-1R FREQ. WHOLE NO.S FRACTIONS
455.00	457.39	2.39	1A 06	SET VHF-1 COMM TFR SW TO RIGHT
456.43	457.95	1.52	1A 17	SET COMM 2 VHF-1 COMM RECVR SW TO ON
456.00	482.00	24.00	1A 15	MON VHF-1 COMM AUDIO
458.00	461.42	3.42	1P160001	MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42	465.98	4.56	1P160002	FIVE HUNDRED SCATTERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.98	470.54	4.56	1P160003	TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P160004	. ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARALLEL APPROACHES IN
475.10	479.66	4.56	1P160005	OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CONTROLLER ON INITIAL
479.66	481.94	2.28	1P160006	CONTACT YOU HAVE INFORMATION LIMA.]
460.00			160048	MON ADF/RMI-2
460.00	462.26	2.26	5E 26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
460.00			16BL05	CROSS FT NDB
465.00			00EV09	C/P EXT VIS SCAN
465.00	510.00	45.00	8A 12	PILOT EXTERNAL VISION SCAN
470.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 260 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 6000 FT.
480.00			160003	SET ALTIMETER BARO SETTING TO 29.84
480.00	482.00	2.00	1P160043	CALL OUT-[DESCENT AND APPROACH CHECKLIST]
484.00			140032	ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04	MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03	SET ALTIMETER BARO SETTING CONTROL
490.00			090017	FLIGHT INSTRUMENT SCAN - C
513.00			030007	ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 25	MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 30	MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21	MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22	MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31	MON ENG NO 1 EXH GAS TEMP IND
513.88	514.32	0.44	7F 32	MON ENG NO 2 EXH GAS TEMP IND
514.32	514.76	0.44	7F 23	MON NO 1 ENG N2 IND

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
514.32	514.76	0.44	7F 24 MON NO 2 ENG N2 IND
514.76	515.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
514.76	515.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
515.20	515.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
515.64	516.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
515.64	516.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
516.08	516.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
516.08	516.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
516.52	516.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
516.52	516.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
519.00			160041 MON VOR/RMI-1
520.00			160095 VECTOR FOR BASE LEG FROM ATL APPROACH
520.00	525.00	5.00	1P16XX95 NASA 515,TURN LEFT HEADING 180.
525.00	528.50	3.50	1A 10 ACT PUSH-TO-TALK SW
525.00	528.50	3.50	1P16YY95 515,ROGER,HEADING 180.
523.00			140007 HEADING CHANGE PROC.
523.00			16SL06 BEGIN TURN TO BASE
533.00			140007 HEADING CHANGE PROC.
540.00			140023 REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	3H 02 MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140045 CALL OUT -[1000 FEET TO LEVEL OFF]
543.00			140007 HEADING CHANGE PROC.
550.00			00EV03 C/P EXT VIS SCAN
550.00	565.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
555.00			090003 FLIGHT INSTRUMENT SCAN - A
565.00			160041 MON VOR/RMI-1
569.00			160042 MON ADF/RMI-1
570.00			160096 VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL
570.00	580.00	10.00	1P16XX96 NASA 515,12 MILES FROM OM,TURN LT HDG 110.MAINTAIN 5000 FT UNTIL CROSSING BAHRR
587.00	594.00	7.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
587.00	594.00	7.00	1P16YY96 515 ROGER,CLEARED FOR ILS 8 LEFT APPR, TOWER AT BAHRR.
580.00	587.00	7.00	1P16ZZ96 CLEARED FOR ILS RUNWAY 8 LEFT APPROACH. CONTACT TOWER ON 119.5 AT BAHRR.
575.00			140007 HEADING CHANGE PROC.
575.00			16SL07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			140007 HEADING CHANGE PROC.
597.00			160034 TUNE ATLANTA TOWER -119.5

ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
597.00	601.88	4.88	1B	07	MON VHF-2R FREQ IND
597.00	599.88	2.88	1B	08	SET VHF-2R FREQ - WHOLE NO.S
599.88	601.88	1.88	1B	09	SET VHF-2R FREQ - FRACTIONS
600.00			160079		MON INSTRUMENTS ON FINAL APP - P
607.00			160047		MON INSTRUMENTS ON FINAL APP
607.00	617.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
607.00	617.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
607.00	617.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
607.00	617.00	10.00	3A	10	MONITOR AIRSPEED INDIC
607.00	617.00	10.00	3H	06	MON ALTIMETER
607.00	617.00	10.00	3L	02	MON VERTICAL SPEED INDIC
610.00			16AA02		SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BAHRR,LEVEL AT 5000 FT
610.00			140003		ALTITUDE CHANGE PROC
610.00			16BL08		LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			160047		MON INSTRUMENTS ON FINAL APP
617.00	627.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
617.00	627.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
617.00	627.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
617.00	627.00	10.00	3A	10	MONITOR AIRSPEED INDIC
617.00	627.00	10.00	3H	06	MON ALTIMETER
617.00	627.00	10.00	3L	02	MON VERTICAL SPEED INDIC
620.00			16AA03		ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BAHRR
623.00			160037		CAPTURE ILS LOC BEGIN TURN TO HDG 090
623.00	625.50	2.50	3R	59	MON INITIAL MOVEMENT OF ROLL COMMAND BAR ON FDI
625.80	626.90	1.30	1P160087		CALL OUT -[LOCALIZER ALIVE]
629.50	631.50	2.00	1P	02	MONITOR CALL-OUT
627.00			160047		MON INSTRUMENTS ON FINAL APP
627.00	637.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
627.00	637.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
627.00	637.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
627.00	637.00	10.00	3A	10	MONITOR AIRSPEED INDIC
627.00	637.00	10.00	3H	06	MON ALTIMETER
627.00	637.00	10.00	3L	02	MON VERTICAL SPEED INDIC

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
637.00				160047	MON INSTRUMENTS ON FINAL APP	
637.00	647.00		10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
637.00	647.00		10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
637.00	647.00		10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
637.00	647.00		10.00	3A	10	MONITOR AIRSPEED INDIC
637.00	647.00		10.00	3H	06	MON ALTIMETER
637.00	647.00		10.00	3L	02	MON VERTICAL SPEED INDIC
643.00				160045	ANNUNCIATOR RECALL	
643.00	645.28		2.28	7A	28	ACTUATE ANNUN PNL RECALL SW
645.28	645.81		0.53	7A	36	MON ALL ANNUN LTS
645.00				160073	CONTROL A/C ON FINAL APPROACH - C (6)	
645.00				160079	MON INSTRUMENTS ON FINAL APP - P	
647.00				160047	MON INSTRUMENTS ON FINAL APP	
647.00	657.00		10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
647.00	657.00		10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
647.00	657.00		10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
647.00	657.00		10.00	3A	10	MONITOR AIRSPEED INDIC
647.00	657.00		10.00	3H	06	MON ALTIMETER
647.00	657.00		10.00	3L	02	MON VERTICAL SPEED INDIC
650.00				160073	CONTROL A/C ON FINAL APPROACH - C (6)	
655.00				160041	MON VOR/RMI-1	
657.00				160042	MON ADF/RMI-1	
657.00				160048	MON ADF/RMI-2	
657.00	659.28		2.28	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
660.00				16BL09	REACH 210 KCAS	
660.00				160054	ACQUIRE GLIDESLOPE	
660.00	662.58		2.58	3R	60	MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
662.60	663.60		1.00	1P160071		CALL OUT -[GLIDE SLOPE ALIVE]
664.00				160061	CONTACT TOWER FOR FINAL LANDING CLEARANCE	
664.00	665.45		1.45	1B	06	SET VHF-2 COMM TFR SW TO RIGHT
666.40	671.40		5.00	1B	25	ACT PUSH-TO-TALK SW ON CONTROL HANDGRIP
666.40	671.40		5.00	1B	17	COMM VIA VHF-2
670.40	674.40		4.00	1P160038		RADIO COMM-[ATLANTA TOWER, NASA 515 IS BAHRR.
674.40	681.40		7.00	1B	19	MON VHF-2 COMM AUDIO
674.40	678.40		4.00	1P160040		MON RADIO COMM - [NASA 515, NO. 3 FOR 8L.DC-9 3 MI AHEAD.WIND 110
678.40	681.40		3.00	1P160041		AT NINE.CLEARED TO LAND RW 8L.

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
681.40	683.10	1.70	1B	29	ACTUATE COMM 2 PUSH-TO-TALK SW
681.40	683.10	1.70	1B	15	COMM VIA VHF-2
681.40	683.10	1.70	1P160037		RADIO COMM - [S15, ROGER]
664.00			16BL10		CROSS BANRR
670.00			160072		CONTROL AIRCRAFT ON FINAL APP - B(240)
664.00			160011		SET FLAPS TO FLAPS 1
664.00	664.70	0.70	1P	10	MONITOR CALL-OUT
665.00	667.69	2.69	4E	07	SET FLAP CONT LEVER TO FLAPS 1
667.69	669.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
669.92	691.09	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
691.09	692.26	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
692.26	692.96	0.70	1P160058		CALL OUT -[FLAPS 1]
670.00			160050		MON INSTRUMENTS ON FINAL APP - P
685.00			16BL11		REACH 190 KCAS
694.00			160017		SET FLAPS TO FLAPS 5
695.00	697.69	2.69	4E	09	SET FLAP CONT LEVER TO FLAPS 5
699.00	699.70	0.70	1P160061		CALL OUT -[FLAPS 5]
694.00			160018		FLAP SET PROCEDURE
694.00	694.70	0.70	1P	10	MONITOR CALL-OUT
696.69	698.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
698.71	701.21	2.50	4E	16	CHECK FLAP LEVER AND POSITION INDIC AGREE
697.69	698.86	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
698.86	700.03	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
699.00			030007		ENGINE INSTRUMENT SCAN
699.00	699.44	0.44	7F	25	MON ENG NO 1 EPR IND
699.00	699.44	0.44	7F	30	MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F	21	MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F	22	MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F	23	MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F	24	MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
702.52	702.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			160080		MON INSTRUMENTS ON FINAL APP - P
706.00			16BL12		REACH 170 KCAS
710.00			160047		MON INSTRUMENTS ON FINAL APP
710.00	720.00	10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
710.00	720.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
710.00	720.00	10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
710.00	720.00	10.00	3A	10	MONITOR AIRSPEED INDIC
710.00	720.00	10.00	3H	06	MON ALTIMETER
710.00	720.00	10.00	3L	02	MON VERTICAL SPEED INDIC
720.00			160047		MON INSTRUMENTS ON FINAL APP
720.00	730.00	10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
720.00	730.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
720.00	730.00	10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
720.00	730.00	10.00	3A	10	MONITOR AIRSPEED INDIC
720.00	730.00	10.00	3H	06	MON ALTIMETER
720.00	730.00	10.00	3L	02	MON VERTICAL SPEED INDIC
730.00			160047		MON INSTRUMENTS ON FINAL APP
730.00	740.00	10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
730.00	740.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
730.00	740.00	10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
730.00	740.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00	740.00	10.00	3H	06	MON ALTIMETER
730.00	740.00	10.00	3L	02	MON VERTICAL SPEED INDIC
730.00			00EV21		PILOT EXT VIS SCAN
740.00			160069		SET SPEED BRAKES
744.00			160046		MON ADF/RMI-2
744.00	746.26	2.26	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
745.00			160080		MON INSTRUMENTS ON FINAL APP - P
745.00			16BL13		CROSS REIFF
748.00			160070		SET AUTO BRAKES
748.00	750.62	2.62	4D	43	SET AUTO BRAKE SEL SW TO MED
750.62	750.88	0.26	4D	40	MON AUTO BRAKE INOP LT OFF
755.00			00EV01		C/P EXT VIS SCAN
755.00	760.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
765.00			160047		MON INSTRUMENTS ON FINAL APP
765.00	775.00	10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI

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SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
765.00	775.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
765.00	775.00	10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
765.00	775.00	10.00	3A	10	MONITOR AIRSPEED INDIC
765.00	775.00	10.00	3H	06	MON ALTIMETER
765.00	775.00	10.00	3L	02	MON VERTICAL SPEED INDIC
775.00			160047		MON INSTRUMENTS ON FINAL APP
775.00	785.00	10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
775.00	785.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
775.00	785.00	10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
775.00	785.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00	785.00	10.00	3H	06	MON ALTIMETER
775.00	785.00	10.00	3L	02	MON VERTICAL SPEED INDIC
775.00			160050		MON INSTRUMENTS ON FINAL APP - P
800.00			160058		REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A	01	VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074		CALL OUT -[RUNWAY IN SITE]
805.00			00EV21		PILOT EXT VIS SCAN
808.00			160016		FLAP SET PROCEDURE
808.00	808.70	0.70	1P	10	MONITOR CALL-OUT
810.69	812.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E	16	CHECK FLAP LEVER AND POSITION INDIC AGREE
811.69	812.86	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
812.86	814.03	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
808.00			160025		SET FLAPS TO FLAPS 15
808.00	811.46	2.46	4E	11	SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160062		CALL OUT -[FLAPS 15]
812.00			160042		MON ADF/RMI-1
815.00			160059		CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V	11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P	13	MONITOR CALL-OUT
815.00			16BL14		CROSS CATTA LOW-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049		MON RADIO ALTIMETER
815.00	817.00	2.00	3J	01	MON RADIO ALT ALTITUDE INDIC
820.00			160060		EXTEND LANDING GEAR
820.00	823.27	3.27	4D	03	SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D	05	MONITOR NOSE GEAR DOWN AND LOCKED LT ON

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
765.00	775.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
765.00	775.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
765.00	775.00	10.00	3A	10	MONITOR AIRSPEED INDIC
765.00	775.00	10.00	3H	06	MON ALTIMETER
765.00	775.00	10.00	3L	02	MON VERTICAL SPEED INDIC
775.00			160047		MON INSTRUMENTS ON FINAL APP
775.00	785.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
775.00	785.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
775.00	785.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
775.00	785.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00	785.00	10.00	3H	06	MON ALTIMETER
775.00	785.00	10.00	3L	02	MON VERTICAL SPEED INDIC
775.00			160050		MON INSTRUMENTS ON FINAL APP - P
800.00			160058		REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A	01	VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074		CALL OUT -[RUNWAY IN SITE]
805.00			00EV21		PILOT EXT VIS SCAN
808.00			160016		FLAP SET PROCEDURE
808.00	808.70	0.70	1P	10	MONITOR CALL-OUT
810.69	812.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E	16	CHECK FLAP LEVER AND POSITION INDIC AGREE
811.69	812.86	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
812.86	814.03	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
808.00			160025		SET FLAPS TO FLAPS 15
809.00	811.48	2.48	4E	11	SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160062		CALL OUT -[FLAPS 15]
812.00			160042		MON ADF/RMI-1
815.00			160059		CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V	11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P	13	MONITOR CALL-OUT
815.00			16BL14		CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049		MON RADIO ALTIMETER
815.00	817.00	2.00	3J	01	MON RADIO ALT ALTITUDE INDIC
820.00			160060		EXTEND LANDING GEAR
820.00	823.27	3.27	4D	03	SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D	05	MONITOR NOSE GEAR DOWN AND LOCKED LT ON

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
823.50	824.04	0.54	4D	09	MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			160080		MON INSTRUMENTS ON FINAL APP - P
845.00			160062		LANDING CHECKLIST
845.00	846.00	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076		CALL OUT -[RECALL]
847.60	848.00	0.40	1P160077		CALL OUT -[CHECKED]
848.00	849.00	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160078		CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P	02	MONITOR CALL-OUT
852.50	853.50	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080		CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081		CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082		CALL OUT -[FLAPS]
858.60	859.70	1.10	1P160083		CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084		CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P	12	MONITOR CALL-OUT
850.00			00EV21		PILOT EXT VIS SCAN
855.00			160080		MON INSTRUMENTS ON FINAL APP - P
865.00			00EV02		C/P EXT VIS SCAN
865.00	875.00	10.00	8A	10	PILOT EXTERNAL VISION SCAN
877.00			160047		MON INSTRUMENTS ON FINAL APP
877.00	887.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
877.00	887.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
877.00	887.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
877.00	887.00	10.00	3A	10	MONITOR AIRSPEED INDIC
877.00	887.00	10.00	3H	06	MON ALTIMETER
877.00	887.00	10.00	3L	02	MON VERTICAL SPEED INDIC
885.00			00EV21		PILOT EXT VIS SCAN
888.00			030007		ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F	25	MON ENG NO 1 EPR IND
889.00	889.44	0.44	7F	30	MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F	21	MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F	22	MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F	23	MON NO 1 ENG N2 IND
890.32	890.76	0.44	7F	24	MON NO 2 ENG N2 IND

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
890.76	891.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
890.76	891.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
891.64	892.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
891.64	892.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
892.08	892.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
892.52	892.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
892.52	892.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
890.00			160080		MON INSTRUMENTS ON FINAL APP - P
895.00			160049		MON RADIO ALTIMETER
895.00	897.00	2.00	3J	01	MON RADIO ALT ALTITUDE INDIC
900.00			00EV04		C/P EXT VIS SCAN
900.00	920.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
923.00			160065		DESCEND THRU -DECISION HEIGTH
923.00	925.58	2.58	3R	12	MON DECISION HGT LT ON FDI
925.58	926.38	0.80	1P160086		CALL OUT -[DECISION HEIGHT]
924.00			160066		CONTROL AIRCRAFT THRU TOUCHDOWN
925.00			160064		CROSS RWY 08 MIDDLE MARKER
925.00	926.91	1.91	3V	13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15		CROSS MIDDLE MARKER
930.00			00EV02		C/P EXT VIS SCAN
930.00	940.00	10.00	8A	10	PILOT EXTERNAL VISION SCAN
930.00			090003		FLIGHT INSTRUMENT SCAN - A
940.00			160047		MON INSTRUMENTS ON FINAL APP
940.00	950.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
940.00	950.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
940.00	950.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
940.00	950.00	10.00	3A	10	MONITOR AIRSPEED INDIC
940.00	950.00	10.00	3H	06	MON ALTIMETER
940.00	950.00	10.00	3L	02	MON VERTICAL SPEED INDIC
941.00			16BL16		CROSS RW THRESHOLD
950.00			00EV02		C/P EXT VIS SCAN
950.00	960.00	10.00	8A	10	PILOT EXTERNAL VISION SCAN
950.00			160068		TOUCHDOWN
950.00			16BL17		TOUCHDOWN
950.00			090003		FLIGHT INSTRUMENT SCAN - A

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OF POOR QUALITY

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK			
950.00				160047	MON INSTRUMENTS ON FINAL APP		
950.00	970.00		10.00		3R	02	MONITOR LOCALIZER INDICATOR ON FDI
950.00	970.00		10.00		3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
950.00	970.00		10.00		3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
950.00	970.00		10.00		3A	10	MONITOR AIRSPEED INDIC
950.00	970.00		10.00		3H	06	MON ALTIMETER
950.00	970.00		10.00		3L	02	MON VERTICAL SPEED INDIC
970.00				00EV02	C/P EXT VIS SCAN		
970.00	980.00		10.00		8A	10	PILOT EXTERNAL VISION SCAN
970.00				090003	FLIGHT INSTRUMENT SCAN - A		
984.00				160071	HANDOFF TO GROUND CONTROL -121.9		
984.00	990.00		6.00		1B	18	MON VHF-2 COMM AUDIO
984.00	987.50		3.50		1P160067		MON RADIO COMM -[NASA 515,EXIT RUNWAY NEXT INTERSECTION. CONTACT GROUND
987.50	990.00		2.50		1P160068		POINT MINER WHEN CLEAR OF RUNWAY, OVER]
990.00	992.50		2.50		1B	14	ACT PUSH-TO-TALK SW ON HANDGRIP
990.00	992.50		2.50		1B	15	COMM VIA VHF-2
990.00	992.50		2.50		1P160069		RADIO COMM -[515, ROGER. POINT MINER WHEN CLEAR]
993.00	998.08		5.08		1B	01	MON VHF-2L FREQ IND
993.00	995.90		2.90		1B	02	SET VHF-2L FREQ-WHOLE NO.S
995.88	997.86		1.98		1B	03	SET VHF-2L FREQ - FRACTIONS
998.00	999.45		1.45		1B	05	SET VHF-2 COMM TFR SW TO LEFT
999.50	1003.00		3.50		1B	29	ACTUATE COMM 2 PUSH-TO-TALK SW
999.50	1003.00		3.50		1B	16	COMM VIA VHF-2
999.50	1003.00		3.50		1P160090		RADIO COMM -[ATLANTA GROUND, THIS IS NASA 515. TAXI TO GATE X, OVER]
1004.00	1007.50		3.50		1B	18	MON VHF-2 COMM AUDIO
1004.00	1007.50		3.50		1P160091		MON RADIO COMM -[NASA 515, ATLANTA GROUND, TAXI TO RAMP VIA NORTHEAST=SOUTH-
1007.50	1008.50		1.00		1P160092		WEST TAXIWAY, OVER]
1009.00	1010.70		1.70		1B	29	ACTUATE COMM 2 PUSH-TO-TALK SW
1009.00	1010.70		1.70		1B	15	COMM VIA VHF-2
1009.00	1010.70		1.70		1P160037		RADIO COMM -[515, ROGER]
990.00				090003	FLIGHT INSTRUMENT SCAN - A		
1010.00				00EV03	C/P EXT VIS SCAN		
1010.00	1025.00		15.00		8A	10	PILOT EXTERNAL VISION SCAN

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# UNSHIFTED    #
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#                                       #
#        MISSION SCENARIO REPORT        #
#                                       #
#  MISSION - MD-S DATA LINK             #
#            ILS AP-BASE LN.            #
#                                       #
#  CONFIGURATION - 737 CONVNT FLT DCK   #
#                                       #
#  CREWMEMBER - COPILOT                 #
#                                       #
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NOV10 1986

TIME INTERVAL (SECS) SINCE MISSION BEGINNING	START	END	TOTAL ACTIVITY TIME	FLIGHT PHASE EVENT/PROCEDURE TASK
0.00				16DL DATA LINK FFD ILS AP
0.00				16DL01 CROSS LOGEN INTERSEC TION AT 250 KCAS AND 14000 FEET.ATL CENTR HAS PREVIOUSLY INSTR UCTED NASA 515 TO MONITOR ATL APPROACH ON 126.9 AT LOGEN. VHF-2R HAS BEEN SET.
0.00				16DL90 MONITOR ATL APPROACH ON 126.9/VHF-2R
0.00	1.45		1.45	1B 06 SET VHF-2 COMM TFR SW TO RIGHT
1.50	3.50		2.00	1B 04 ADJ VHF-2 VOLUME
0.00				140003 ALTITUDE CHANGE PROC
10.00				090039 FLIGHT INSTRUMENT SCAN - F
15.00				160013 SET NAV-1 TO RUNWAY 8L ILS -109.3
15.00	21.00		6.00	8B 06 RETREIVE CHARTS
21.00	26.00		5.00	8B160003 REVIEW CHARTS TO DETERMINE RUNWAY 08 ILS FREQ AND REQ VOR FREQ
26.00	31.08		5.08	5U 01 MON NAV-1 FREQ INDIC
26.00	29.00		3.00	5U 02 SET NAV-1 FREQ - WHOLE NO.S
29.00	31.08		2.08	5U 03 SET NAV-1 FREQ - FRACTIONS
31.50	34.40		2.90	1P160059 CALL OUT -[RUNWAY 8L ILS IS ON NAV 1]
31.50	33.77		2.27	5H 02 MON VOR POINTER NO.1 ON VOR/RMI 2 INDIC
15.00				00EV30 PILOT EXT VIS SCAN
38.00				160039 SET ADF-1 TO CATTA -375KC
38.00	41.00		3.00	5D 17 SET ADF NO.1 BFO SW TO OFF
41.00	41.77		0.77	5D 22 MON ADF NO.1 TUNING METER INDIC
41.77	43.75		1.98	5D 01 MONITOR ADF NO 1 FREQ INDIC
43.75	45.73		1.98	5D 02 SELECT ADF NO 1 FREQ INDIC
45.73	47.23		1.50	1P160065 CALL OUT -[CATTA ON ADF-1]
49.00				160040 SET ADF-2 TO FLANC -344
49.00	51.69		2.69	5E 17 SEL ADF NO.2 FREQ BAND .19-.40
52.00	53.98		1.98	5E 01 MON ADF NO 2 FREQ. INDIC
52.00	53.98		1.98	5E 02 SELECT ADF NO 2 FREQ
52.00	54.26		2.26	5E 20 MON ADF NO.2 TUNING METER INDIC
54.00	55.50		1.50	1P160066 CALL OUT -[FLANC ON ADF-2]
58.00				160038 SET DECISION HEIGTH ON RADIO ALTIMETER

ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
64.00				030007		ENGINE INSTRUMENT SCAN
64.00	64.44		0.44	7F	25	MON ENG NO 1 EPR IND
64.00	64.44		0.44	7F	30	MON ENG NO 2 EPR IND
64.44	64.88		0.44	7F	21	MON NO 1 ENG N1 IND
64.44	64.88		0.44	7F	22	MON NO 2 ENG N1 IND
64.88	65.32		0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32		0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76		0.44	7F	23	MON NO 1 ENG N2 IND
65.32	65.76		0.44	7F	24	MON NO 2 ENG N2 IND
65.76	66.20		0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20		0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64		0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
66.64	67.08		0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
66.64	67.08		0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
67.08	67.52		0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
67.08	67.52		0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
67.52	67.96		0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
67.52	67.96		0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
68.00				16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BARRR AT 5000 FT.
70.00				160005		DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00		2.00	1P	02	MONITOR CALL-OUT
72.00	77.90		5.90	8B	02	RETREIVE CHECKLIST
78.00	83.00		5.00	8B	05	FIND CHECKLIST IN HANDBOOK
83.00	85.00		2.00	8B	03	READ NEXT ITEM ON CHECKLIST
85.00	86.00		1.00	1P160044		CALL OUT-[ANTI-ICE]
87.00	87.80		0.80	1P160045		CALL OUT-[NOT REQD]
88.00	90.00		2.00	8B	03	READ NEXT ITEM ON CHECKLIST
90.00	91.80		1.80	1P160046		CALL OUT -[AIR CONDITIONING AND PRESSURIZATION]
92.00	94.67		2.67	7D	69	MON PASS CAB TEMP CONT SETTING
94.67	96.69		2.02	7D	70	MON CONT CAB TEMP CONT SETTING
96.69	97.86		1.17	7E	08	MON LDG ALT CNTR
98.00	98.40		0.40	1P160047		CALL OUT [SET]
70.00				00EV33		PILOT EXT VIS SCAN
100.00				160006		DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00		2.00	8B	03	READ NEXT ITEM ON CHECKLIST
102.00	102.90		0.90	1P160048		CALL OUT-[START SWITCHES]
108.50	109.00		0.50	1P	06	MONITOR REPORT
109.00	111.00		2.00	8B	03	READ NEXT ITEM ON CHECKLIST

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
111.00	112.10	1.10	1P160050		CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G	17	SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P160051		CALL OUT -[ON]
114.50	116.50	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P160052		CALL OUT -[ALTIMETER AND INSTRUMENTS]
118.00	120.37	2.37	3H	02	MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H	05	F.O. CHECK CAPT<S ALTIMETER BARO SET AND INDICATED ALTI-TUDE
123.40	124.70	1.30	1P160053		CALL OUT-[SET AND CROSSCHECKED]
126.00			160007		DESCENT AND APPROACH CHECKLIST - 3
126.00	128.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P160054		CALL OUT-[EPR AND IAS BUGS]
128.00	131.00	3.00	8B010004		RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	136.00	5.00	8B160001		DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	138.32	2.32	7F	26	SET ENG NO 1 EPR BUG
136.32	138.32	2.00	7F	27	MON ENG NO 1 EPR BUG
138.32	140.64	2.32	7F	28	SET ENG NO 2 EPR BUG
138.64	140.64	2.00	7F	29	MON ENG NO 2 EPR BUG
141.00	146.00	5.00	8B160002		DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A	07	MON V-REF BUG SETTING
146.00	148.57	2.57	3A	05	SET V-REF BUG
146.00	147.90	1.90	1P160055		CALL OUT -[V-REF IS XXX KNOTS]
151.00	154.00	3.00	3A	12	F.O. CHECK CAPT'S V-REF BUG SETTING
154.00	155.60	1.60	1P160056		CALL OUT -[BUGS SET AND CROSS-CHECKED]
155.60	157.60	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
155.60	156.90	1.30	1P160057		CALL OUT -[CHECKLIST COMPLETED]
157.60	160.60	3.00	8B	08	STOW CHECKLIST
160.60	162.60	2.00	8B010005		STOW FLIGHT PLANNING REF. DATA MANUAL
130.00			090018		FLIGHT INSTRUMENT SCAN - D
165.00			030007		ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F	25	MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F	30	MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F	21	MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F	22	MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F	23	MON NO 1 ENG N2 IND
166.32	166.76	0.44	7F	24	MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC

ORIGINAL PAGE IS
OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
166.76	167.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F	08	MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
168.52	168.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
172.00			00EV03		C/P EXT VIS SCAN
172.00	187.00	15.00	8A	10	PILOT EXTERNAL VISION SCAN
195.00			160048		MON ADF/RMI-2
195.00	197.26	2.26	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			16DL01		HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	196.60	1.60		1D16XX01	MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00		1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
198.60	200.40	1.80		1X160001	LINE SELECT [ATC UPLINKS PENDING]
200.40	210.40	10.00		1D16XX91	READ -TURN RT HDG 270,DESCND AND MAINTAIN 6000 FT,MONITOR ATL APPR ON 127.25
210.40	212.20	1.80		1X160041	LINE SELECT [WILCO]
200.00			140007		HEADING CHANGE PROC.
200.00			16BL02		BEGIN TURN TO DOWNWIND LEG
210.00			16BL03		DESCEND THRU 11000.
215.00			16AA01		ADJUST THRUST AND PITCH TO MAINTAIN A 800 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANAR AT 5000 FT.
219.00			160092		TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B	01	MON VHF-2L FREQ IND
219.00	221.90	2.90	1B	02	SET VHF-2L FREQ-WHOLE NO.S
221.88	223.86	1.98	1B	03	SET VHF-2L FREQ - FRACTIONS
226.00			16DL93		MONITOR ATL APPROACH ON 127.25/VHF-2L
226.00	227.49	1.49	1B	05	SET VHF-2 COMM TFR SW TO LEFT
227.50	229.50	2.00	1B	04	ADJ VHF-2 VOLUME
230.00			090017		FLIGHT INSTRUMENT SCAN - C
240.00			00EV09		C/P EXT VIS SCAN
240.00	285.00	45.00	8A	12	PILOT EXTERNAL VISION SCAN

C-2

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
250.00			090039	FLIGHT INSTRUMENT SCAN - F	
288.00			030007	ENGINE INSTRUMENT SCAN	
288.00	288.44	0.44	7F	25	MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F	30	MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F	21	MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F	22	MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F	23	MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F	24	MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F	12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
291.52	291.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09	C/P EXT VIS SCAN	
295.00	340.00	45.00	8A	12	PILOT EXTERNAL VISION SCAN
330.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANKR AT 5000 FT.	
340.00			00EV04	C/P EXT VIS SCAN	
340.00	360.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
363.00			030007	ENGINE INSTRUMENT SCAN	
363.00	363.44	0.44	7F	25	MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F	24	MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC

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OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
365.64	366.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04		DESCEND THRU 8600.
370.00			16DL94		ALTITUDE STEP DOWN
370.00	371.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
371.60	373.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
373.60	375.40	1.80	1X160001		LINE SELECT [ATC UPLINKS PENDING]
375.40	379.40	4.00	1D16XX94		READ -DESCEND AND MAINTAIN 5000 FT
379.40	381.20	1.80	1X160041		LINE SELECT [WILCO]
370.00			090039		FLIGHT INSTRUMENT SCAN - F
385.00			00EV08		C/P EXT VIS SCAN
385.00	425.00	40.00	8A	11	PILOT EXTERNAL VISION SCAN
430.00			030007		ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F	25	MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F	30	MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F	21	MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F	22	MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
450.00			16DL02		RECEIVE ATL ETIS TERMINAL INFORMATION
450.00	451.80	1.80	1X160004		LINE SELECT [ETIS REQUESTS]
451.80	453.80	2.00	1D16XX33		READ [ETIS REQUEST FOR KATL]

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
453.80	455.60	1.80	1X160046	LINE SELECT [FULL ETIS REPORT]
456.60	460.20	1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
460.20	462.20	2.00	1D16XX08	MON VISUAL ALERT DSP [MODE-S UPLINK PNDG] INDENTED BLUE
462.20	464.00	1.80	1X160001	LINE SELECT [ATC UPLINKS PENDING]
464.00	474.00	10.00	1D16XX31	READ-ETIS REPORT FOR ATL AT XXXXZ. SKY 25 SCT/40 BKN. VSB 10. WIND 110/10/G17.
474.00	479.00	5.00	1D16XX32	TEMP 59. ALT 2984. APR RW08L AND RW09R SIMULT PARALLEL ILS
479.00	480.80	1.80	1X160047	LINE SELECT [PRINT MESSAGE]
480.00			16BL05	CROSS FT NDB
470.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 800 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
480.00			160003	SET ALTIMETER BARO SETTING TO 29.84
480.00	482.00	2.00	1P160043	CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
484.00			140032	ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04	MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03	SET ALTIMETER BARO SETTING CONTROL
490.00			090017	FLIGHT INSTRUMENT SCAN - C
513.00			030007	ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 25	MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 30	MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21	MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22	MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31	MON ENG NO 1 EXH GAS TEMP IND
513.88	514.32	0.44	7F 32	MON ENG NO 2 EXH GAS TEMP IND
514.32	514.76	0.44	7F 23	MON NO 1 ENG N2 IND
514.32	514.76	0.44	7F 24	MON NO 2 ENG N2 IND
514.76	515.20	0.44	7F 33	MON ENG NO 1 FUEL FLOW INDIC
514.76	515.20	0.44	7F 34	MON ENG NO 2 FUEL FLOW INDIC
515.20	515.64	0.44	7F 09	MON NO 1 ENG OIL PRESS INDIC
515.64	516.08	0.44	7F 10	MON NO 1 ENG OIL TEMP INDIC
515.64	516.08	0.44	7F 18	MON NO 2 ENG OIL TEMP INDIC
516.08	516.52	0.44	7F 11	MON NO 1 ENG OIL QTY INDIC
516.08	516.52	0.44	7F 19	MON NO 2 ENG OIL QTY INDIC
516.52	516.96	0.44	7F 12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
518.52	518.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
519.00			160041 MON VOR/RMI-1
520.00			16DL95 VECTOR FOR BASE LEG
520.00	521.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
521.60	523.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
523.60	525.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
525.40	528.40	3.00	1D16XX95 READ -TURN LEFT HEADING 180
528.40	530.20	1.80	1X160041 LINE SELECT [WILCO]
523.00			140007 HEADING CHANGE PROC.
523.00			16BL06 BEGIN TURN TO BASE
533.00			140007 HEADING CHANGE PROC.
540.00			140023 REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	3H 02 MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140045 CALL OUT -[1000 FEET TO LEVEL OFF]
543.00			140007 HEADING CHANGE PROC.
550.00			00EV03 C/P EXT VIS SCAN
550.00	565.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
555.00			090003 FLIGHT INSTRUMENT SCAN - A
565.00			160041 MON VOR/RMI-1
569.00			160042 MON ADF/RMI-1
570.00			16DL96 VECTOR TO FINAL APPR
570.00	571.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
571.60	573.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
573.60	575.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
575.40	584.40	9.00	1D16XX96 READ -12 NM FROM OM TURN LT HDG 110.MAIN TAIN 5000 UNTIL XING BAHRR.
584.40	591.40	7.00	1D16ZZ97 CLEARED FOR ILS 8L APPR.MONITOR TOWER ON 119.5 AT BAHRR
591.40	593.20	1.80	1X160041 LINE SELECT [WILCO]
575.00			140007 HEADING CHANGE PROC.
575.00			16BL07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			140007 HEADING CHANGE PROC.
597.00			160034 TUNE ATLANTA TOWER -119.5
597.00	601.86	4.86	1B 07 MON VHF-2R FREQ IND
597.00	599.86	2.86	1B 08 SET VHF-2R FREQ - WHOLE NO.5
599.86	601.86	1.96	1B 09 SET VHF-2R FREQ - FRACTIONS
600.00			160079 MON INSTRUMENTS ON FINAL APP - P
607.00			160047 MON INSTRUMENTS ON FINAL APP

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
607.00	617.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
607.00	617.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
607.00	617.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
607.00	617.00	10.00	3A	10	MONITOR AIRSPEED INDIC
607.00	617.00	10.00	3H	06	MON ALTIMETER
607.00	617.00	10.00	3L	02	MON VERTICAL SPEED INDIC
610.00			16AA02		SELECT ALT HOLD AND AUTO APP FD MODES TO CAPTURE LOCALIZER PRIOR TO BAHRR,LEVEL AT 5000 FT
610.00			140003		ALTITUDE CHANGE PROC
610.00			16BL05		LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			160047		MON INSTRUMENTS ON FINAL APP
617.00	627.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
617.00	627.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
617.00	627.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
617.00	627.00	10.00	3A	10	MONITOR AIRSPEED INDIC
617.00	627.00	10.00	3H	06	MON ALTIMETER
617.00	627.00	10.00	3L	02	MON VERTICAL SPEED INDIC
620.00			16AA03		ADJUST THRUST TO DECEL TO 210 KCAS BEFORE BAHRR
623.00			160037		CAPTURE ILS LOC BEGIN TURN TO HDG 090
623.00	625.58	2.58	3R	59	MON INITIAL MOVEMENT OF ROLL COMMAND BAR ON FDI
625.80	626.90	1.30	1P160067		CALL OUT -[LOCALIZER ALIVE]
629.50	631.50	2.00	1P	02	MONITOR CALL-OUT
627.00			160047		MON INSTRUMENTS ON FINAL APP
627.00	637.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
627.00	637.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
627.00	637.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
627.00	637.00	10.00	3A	10	MONITOR AIRSPEED INDIC
627.00	637.00	10.00	3H	06	MON ALTIMETER
627.00	637.00	10.00	3L	02	MON VERTICAL SPEED INDIC
637.00			160047		MON INSTRUMENTS ON FINAL APP
637.00	647.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
637.00	647.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
637.00	647.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
637.00	647.00	10.00	3A	10	MONITOR AIRSPEED INDIC

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
637.00	647.00		10.00	3H	06	MON ALTIMETER
637.00	647.00		10.00	3L	02	MON VERTICAL SPEED INDIC
643.00				160045		ANNUNCIATOR RECALL
643.00	645.28		2.28	7A	28	ACTUATE ANNUN PNL RECALL SW
645.28	645.81		0.53	7A	36	MON ALL ANNUN LTS
645.00				160073		CONTROL A/C ON FINAL APPROACH - C (5)
645.00				160079		MON INSTRUMENTS ON FINAL APP - P
647.00				160047		MON INSTRUMENTS ON FINAL APP
647.00	657.00		10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
647.00	657.00		10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
647.00	657.00		10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
647.00	657.00		10.00	3A	10	MONITOR AIRSPEED INDIC
647.00	657.00		10.00	3H	06	MON ALTIMETER
647.00	657.00		10.00	3L	02	MON VERTICAL SPEED INDIC
650.00				160073		CONTROL A/C ON FINAL APPROACH - C (5)
655.00				160041		MON VOR/RMI-1
657.00				160042		MON ADF/RMI-1
657.00				160048		MON ADF/RMI-2
657.00	659.28		2.28	5E	28	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
660.00				16BL09		REACH 210 KCAS
660.00				160054		ACQUIRE GLIDESLOPE
660.00	662.58		2.58	3R	60	MON INITIAL MOVEMENT OF GLIDE SLOPE COMMAND BAR ON FDI
662.60	663.60		1.00	1P160071		CALL OUT -[GLIDE SLOPE ALIVE]
664.00				16DL60		MONITOR ATL TOWER ON 119.5/VHF-2R
664.00	665.46		1.46	1B	06	SET VHF-2 COMM TFR SW TO RIGHT
665.50	667.50		2.00	1B	04	ADJ VHF-2 VOLUME
664.00				16BL10		CROSS BARRA
670.00				16DL61		LANDING CLEARANCE
670.00	671.60		1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
671.60	673.60		2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
673.60	675.40		1.80	1X160001		LINE SELECT [ATC UPLINKS PENDING]
675.40	685.40		10.00	1D16XX40		READ -NO.3 FOR SL. DC-9 3 NM AHEAD.WIND 110 AT 9. CLEARED TO LAND RW 6L.
685.40	687.20		1.80	1X160041		LINE SELECT [WILCO]
670.00				160072		CONTROL AIRCRAFT ON FINAL APP - S(240)
664.00				160011		SET FLAPS TO FLAPS 1
664.00	664.70		0.70	1P	10	MONITOR CALL-OUT

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
685.00	687.69	2.69	4E	07	SET FLAP CONT LEVER TO FLAPS 1
687.69	689.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
689.92	691.09	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
691.09	692.26	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
692.26	692.96	0.70	1P160068		CALL OUT -[FLAPS 1]
670.00			160080		MON INSTRUMENTS ON FINAL APP - P
686.00			16BL11		REACH 190 KCAS
694.00			160017		SET FLAPS TO FLAPS 5
695.00	697.69	2.69	4E	09	SET FLAP CONT LEVER TO FLAPS 5
698.00	698.70	0.70	1P160061		CALL OUT -[FLAPS 5]
694.00			160018		FLAP SET PROCEDURE
694.00	694.70	0.70	1P	10	MONITOR CALL-OUT
696.69	698.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
698.71	701.21	2.50	4E	16	CHECK FLAP LEVER AND POSITION INDIC AGREE
697.69	698.86	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
698.86	700.03	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
699.00			030007		ENGINE INSTRUMENT SCAN
699.00	699.44	0.44	7F	25	MON ENG NO 1 EPR IND
699.00	699.44	0.44	7F	30	MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F	21	MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F	22	MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F	23	MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F	24	MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
702.52	702.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			160080		MON INSTRUMENTS ON FINAL APP - P
708.00			16BL12		REACH 170 KCAS
710.00			160047		MON INSTRUMENTS ON FINAL APP
710.00	720.00	10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
710.00	720.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
710.00	720.00	10.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
710.00	720.00	10.00	3A 10	MONITOR AIRSPEED INDIC
710.00	720.00	10.00	3H 06	MON ALTIMETER
710.00	720.00	10.00	3L 02	MON VERTICAL SPEED INDIC
720.00			160047	MON INSTRUMENTS ON FINAL APP
720.00	730.00	10.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
720.00	730.00	10.00	3S 04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
720.00	730.00	10.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
720.00	730.00	10.00	3A 10	MONITOR AIRSPEED INDIC
720.00	730.00	10.00	3H 06	MON ALTIMETER
720.00	730.00	10.00	3L 02	MON VERTICAL SPEED INDIC
730.00			160047	MON INSTRUMENTS ON FINAL APP
730.00	740.00	10.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
730.00	740.00	10.00	3S 04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
730.00	740.00	10.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
730.00	740.00	10.00	3A 10	MONITOR AIRSPEED INDIC
730.00	740.00	10.00	3H 06	MON ALTIMETER
730.00	740.00	10.00	3L 02	MON VERTICAL SPEED INDIC
730.00			00EV21	PILOT EXT VIS SCAN
740.00			160069	SET SPEED BRAKES
744.00			160045	MON ADF/RMI-2
744.00	746.26	2.26	5E 26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
745.00			160080	MON INSTRUMENTS ON FINAL APP - P
746.00			16BL13	CROSS REIFF
746.00			160070	SET AUTO BRAKES
746.00	750.62	2.62	4D 43	SET AUTO BRAKE SEL SW TO MED
750.62	750.88	0.26	4D 40	MON AUTO BRAKE INOP LT OFF
755.00			00EV01	C/P EXT VIS SCAN
755.00	760.00	5.00	8A 10	PILOT EXTERNAL VISION SCAN
765.00			160047	MON INSTRUMENTS ON FINAL APP
765.00	775.00	10.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
765.00	775.00	10.00	3S 04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
765.00	775.00	10.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
765.00	775.00	10.00	3A 10	MONITOR AIRSPEED INDIC
765.00	775.00	10.00	3H 06	MON ALTIMETER
766.00	775.00	10.00	3L 02	MON VERTICAL SPEED INDIC
775.00			160047	MON INSTRUMENTS ON FINAL APP

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
775.00	785.00	10.00	3R	02	MONITOR LOCALIZER INDICATOR ON FDI
775.00	785.00	10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
775.00	785.00	10.00	3R	03	MON GLIDE SLOPE ATT INDIC ON FDI
775.00	785.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00	785.00	10.00	3H	06	MON ALTIMETER
775.00	785.00	10.00	3L	02	MON VERTICAL SPEED INDIC
775.00			160080		MON INSTRUMENTS ON FINAL APP - P
800.00			160068		REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	6A	01	VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P160074		CALL OUT -[RUNWAY IN SITE]
805.00			00EV21		PILOT EXT VIS SCAN
808.00			160018		FLAP SET PROCEDURE
808.00	808.70	0.70	1P	10	MONITOR CALL-OUT
810.69	812.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E	16	CHECK FLAP LEVER AND POSITION INDIC AGREE
811.69	812.86	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
812.86	814.03	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
808.00			160025		SET FLAPS TO FLAPS 15
809.00	811.46	2.46	4E	11	SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P160062		CALL OUT -[FLAPS 15]
812.00			160042		MON ADF/RMI-1
815.00			160059		CROSS RWY 06 OUTER MARKER
815.00	815.72	0.72	3V	11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P	13	MONITOR CALL-OUT
815.00			16BL14		CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049		MON RADIO ALTIMETER
815.00	817.00	2.00	3J	01	MON RADIO ALT ALTITUDE INDIC
820.00			160060		EXTEND LANDING GEAR
820.00	823.27	3.27	4D	03	SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D	05	MONITOR NOSE GEAR DOWN AND LOCKED LT ON
823.50	824.04	0.54	4D	09	MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			160080		MON INSTRUMENTS ON FINAL APP - P
845.00			160062		LANDING CHECKLIST
845.00	846.00	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076		CALL OUT -[RECALL]
847.60	848.00	0.40	1P160077		CALL OUT -[CHECKED]

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
848.00	849.00	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160078	CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02	MONITOR CALL-OUT
852.50	853.50	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080	CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081	CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082	CALL OUT -[FLAPS]
858.60	859.70	1.10	1P160083	CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084	CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12	MONITOR CALL-OUT
850.00			00EV21	PILOT EXT VIS SCAN
855.00			160050	MON INSTRUMENTS ON FINAL APP - P
865.00			00EV02	C/P EXT VIS SCAN
865.00	875.00	10.00	8A 10	PILOT EXTERNAL VISION SCAN
877.00			160047	MON INSTRUMENTS ON FINAL APP
877.00	887.00	10.00	3R 62	MONITOR LOCALIZER INDICATOR ON FDI
877.00	887.00	10.00	3S 04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
877.00	887.00	10.00	3R 63	MON GLIDE SLOPE ATT INDIC ON FDI
877.00	887.00	10.00	3A 10	MONITOR AIRSPEED INDIC
877.00	887.00	10.00	3H 06	MON ALTIMETER
877.00	887.00	10.00	3L 02	MON VERTICAL SPEED INDIC
885.00			00EV21	PILOT EXT VIS SCAN
889.00			030007	ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F 25	MON ENG NO 1 EPR IND
889.00	889.44	0.44	7F 30	MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F 21	MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F 22	MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F 31	MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F 32	MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F 23	MON NO 1 ENG N2 IND
890.32	890.76	0.44	7F 24	MON NO 2 ENG N2 IND
890.76	891.20	0.44	7F 33	MON ENG NO 1 FUEL FLOW INDIC
890.76	891.20	0.44	7F 34	MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F 09	MON NO 1 ENG OIL PRESS INDIC
891.64	892.08	0.44	7F 10	MON NO 1 ENG OIL TEMP INDIC
891.64	892.08	0.44	7F 18	MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F 11	MON NO 1 ENG OIL QTY INDIC

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
892.08	892.52		0.44	7F	10	MON NO 2 ENG OIL QTY INDIC
892.52	892.96		0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
892.52	892.96		0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
890.00				160080		MON INSTRUMENTS ON FINAL APP - P
895.00				160049		MON RADIO ALTIMETER
895.00	897.00		2.00	3J	01	MON RADIO ALT ALTITUDE INDIC
900.00				00EV04		C/P EXT VIS SCAN
900.00	920.00		20.00	8A	10	PILOT EXTERNAL VISION SCAN
923.00				160086		DESCEND THRU -DECISION HEIGTH
923.00	925.58		2.58	3R	12	MON DECISION HGT LT ON FDI
925.58	926.38		0.80	1P160086		CALL OUT -(DECISION HEIGHT)
924.00				160066		CONTROL AIRCRAFT THRU TOUCHDOWN
925.00				160064		CROSS RWY 08 MIDDLE MARKER
925.00	926.91		1.91	3V	13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00				16BL15		CROSS MIDDLE MARKER
930.00				00EV02		C/P EXT VIS SCAN
930.00	940.00		10.00	8A	10	PILOT EXTERNAL VISION SCAN
930.00				090003		FLIGHT INSTRUMENT SCAN - A
940.00				160047		MON INSTRUMENTS ON FINAL APP
940.00	950.00		10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
940.00	950.00		10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
940.00	950.00		10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
940.00	950.00		10.00	3A	10	MONITOR AIRSPEED INDIC
940.00	950.00		10.00	3H	06	MON ALTIMETER
940.00	950.00		10.00	3L	02	MON VERTICAL SPEED INDIC
941.00				16BL16		CROSS RW THRESHOLD
950.00				00EV02		C/P EXT VIS SCAN
950.00	960.00		10.00	8A	10	PILOT EXTERNAL VISION SCAN
950.00				160068		TOUCHDOWN
950.00				16BL17		TOUCHDOWN
950.00				090003		FLIGHT INSTRUMENT SCAN - A
960.00				160047		MON INSTRUMENTS ON FINAL APP
960.00	970.00		10.00	3R	62	MONITOR LOCALIZER INDICATOR ON FDI
960.00	970.00		10.00	3S	04	MON A/C POSITION RELATIVE TO SELECTED COURSE ON CI
960.00	970.00		10.00	3R	63	MON GLIDE SLOPE ATT INDIC ON FDI
960.00	970.00		10.00	3A	10	MONITOR AIRSPEED INDIC
960.00	970.00		10.00	3H	06	MON ALTIMETER

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
960.00	970.00	10.00	3L	02	MON VERTICAL SPEED INDIC
970.00			00EV02	C/P EXT VIS SCAN	
970.00	980.00	10.00	8A	10	PILOT EXTERNAL VISION SCAN
970.00			090003	FLIGHT INSTRUMENT SCAN - A	
984.00			16DL71	HANDOFF TO GROUND	
984.00	985.80	1.80	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
985.80	987.80	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
987.80	989.40	1.60	1X160001		LINE SELECT [ATC UPLINKS PENDING]
989.40	997.40	8.00	1D16XX87		READ -EXIT RUNWAY NEXT INTERSECTION. MONITOR GROUND 121.9 WHEN CLEAR OF RUNWAY
997.40	999.20	1.80	1X160041		LINE SELECT [WILCO]
990.00			090003	FLIGHT INSTRUMENT SCAN - A	
1000.00			16DL72	TUNE AND MONITOR ATL BAND ON 121.9/VHF-2L	
1000.00	1004.88	4.88	1B	01	MON VHF-2L FREQ IND
1000.00	1002.90	2.90	1B	02	SET VHF-2L FREQ-WHOLE NO.8
1002.90	1004.88	1.88	1B	03	SET VHF-2L FREQ - FRACTIONS
1004.90	1006.39	1.49	1B	05	SET VHF-2 COMM TFR SW TO LEFT
1006.40	1008.40	2.00	1B	04	ADJ VHF-2 VOLUME
1009.00			16DL73	TAXI CLEARANCE FROM	
1009.00	1010.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
1010.60	1012.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
1012.60	1014.40	1.80	1X160001		LINE SELECT [ATC UPLINKS PENDING]
1014.40	1019.40	5.00	1D16XX88		READ -TAXI TO RAMP VIA NE/SW TAXIWAY.
1019.40	1021.20	1.80	1X160041		LINE SELECT [WILCO]
1020.00			00EV01	C/P EXT VIS SCAN	
1020.00	1025.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN

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B.3 NORMAL ILS APPROACH—ADVANCED FLIGHT DECK

Flying Pilot

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*                                       *
*        MISSION SCENARIO REPORT        *
*                                       *
*  MISSION - CURRENT NAS                *
*            ILS AP-BASE LN.            *
*                                       *
*  CONFIGURATION - 737 ADVCND FLT DCK   *
*                                       *
*  CREWMEMBER - PILOT                   *
*                                       *
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TIME INTERVAL (SECS) SINCE MISSION BEGINNING	START	END	TOTAL ACTIVITY TIME	FLIGHT PHASE EVENT/PROCEDURE TASK		
0.00				16BL BASELINE AFD ILS APP		
0.00				16BL01		CROSS LOGEN INTERSECTION AT 250 KCAS AND 14000 FEET.ATL CENTR HAS PREVIOUSLY INSTRUCTED NASA 515 TO CONTACT ATL APPR AT LOGEN.VHF-2R HAS ALREADY BEEN TUNED TO CORRECT FREQ-126.9.
0.00				160090		CONTACT ATL APPROACH ON 126.9
9.40	13.40		4.00	1P16YY90		NASA 515,ATL APPR, ROGER.
0.00				160080		DROP OUT OF HOR AND VERT PATH TO FPA,TKA,AND CAS AUTO FLT MODES ENTER FPA IN MCP
0.00	0.78		0.78	2H	38	MON HOR PATH MODE LT DARK - HOR PATH MODE DISENGAGED
0.00	0.78		0.78	2H	42	MON VERT PATH MODE LT DARK - VERT PATH MODE DISENGAGED
0.80	2.14		1.34	2H	08	MON AUTO MODE LT GREEN - AUTO MODE ENGAGED
2.10	2.87		0.77	2H	16	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
2.10	2.87		0.77	2H	22	MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
2.90	5.35		2.45	2H	26	ROTATE FPA SEL KNOB
2.90	3.67		0.77	2H	24	MONITOR FPA SEL MODE LT BLUE - FPA SEL MODE PRESELECTED
4.30	5.38		1.08	2H	27	READ FPA SEL VALUE ON DIGITAL INDIC
5.40	7.40		2.00	2K	32	MON ALT/RNG SYMBOLS
7.40	8.80		1.40	2H	21	PRESS FPA SEL MODE SW
8.80	9.57		0.77	2H	22	MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
10.00				090048		FLIGHT INSTRUMENT SCAN -A2
10.00	40.00		30.00	2J	02	MON PITCH ATTITUDE INDIC
10.00	40.00		30.00	3L	02	MON VERTICAL SPEED INDIC
10.00	40.00		30.00	3A	10	MONITOR AIRSPEED INDIC
10.00	40.00		30.00	2K	14	MON MAP VIDEO
10.00	40.00		30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
10.00	40.00		30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
40.00				090048		FLIGHT INSTRUMENT SCAN -A2
40.00	70.00		30.00	2J	02	MON PITCH ATTITUDE INDIC

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SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
40.00	70.00	30.00	3L	02	MON VERTICAL SPEED INDIC
40.00	70.00	30.00	3A	10	MONITOR AIRSPEED INDIC
40.00	70.00	30.00	2K	14	MON MAP VIDEO
40.00	70.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
40.00	70.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
70.00			090048		FLIGHT INSTRUMENT SCAN -A2
70.00	100.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
70.00	100.00	30.00	3L	02	MON VERTICAL SPEED INDIC
70.00	100.00	30.00	3A	10	MONITOR AIRSPEED INDIC
70.00	100.00	30.00	2K	14	MON MAP VIDEO
70.00	100.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
70.00	100.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
15.00			160013		SET NAV-1 TO RUNWAY 8L ILS -109.3
31.50	34.00	2.50	1P	12	MONITOR CALL-OUT
34.00	36.25	2.25	5Q	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
60.00			00EV30		PILOT EXT VIS SCAN
60.00	110.00	50.00	8A	12	PILOT EXTERNAL VISION SCAN
38.00			160039		SET ADF-1 TO CATTA -375KC
45.73	47.23	1.50	1P	02	MONITOR CALL-OUT
49.00			160040		SET ADF-2 TO FLANC -344
54.00	55.50	1.50	1P	02	MONITOR CALL-OUT
58.00			160038		SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007		ENGINE INSTRUMENT SCAN
70.00			160005		DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P160043		CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
85.00	86.00	1.00	1P	10	MONITOR CALL-OUT
87.00	87.80	0.80	1P	07	MONITOR REPORT
90.00	91.80	1.80	1P	13	MONITOR CALL-OUT
98.00	98.40	0.40	1P	16	MONITOR REPORT
100.00			160006		DESCENT AND APPROACH CHECKLIST - 2
102.00	102.90	0.90	1P	11	MONITOR CALL-OUT
103.00	106.54	3.54	7M	03	SET ENG NO.1 START SW TO FLT
106.54	108.28	1.74	7M	06	SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P160049		CALL OUT [FLIGHT]
111.00	112.10	1.10	1P	12	MONITOR CALL-OUT
114.20	114.50	0.30	1P	16	MONITOR REPORT
116.50	117.90	1.40	1P	12	MONITOR CALL-OUT
123.40	124.70	1.30	1P	09	MONITOR REPORT
126.00			160007		DESCENT AND APPROACH CHECKLIST - 3
126.00	129.50	1.50	1P	02	MONITOR CALL-OUT

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
146.00	147.90		1.90	1P	14	MONITOR CALL-OUT
148.00	150.57		2.57	3A	07	MON V-REF BUG SETTING
148.00	150.57		2.57	3A	05	SET V-REF BUG
151.00	154.00		3.00	3A	13	CAPT CHECK F.O.<S V-REF BUG SETTING
154.00	155.60		1.60	1P	05	MONITOR REPORT
157.60	158.90		1.30	1P	02	MONITOR CALL-OUT
165.00				030007		ENGINE INSTRUMENT SCAN
150.00				00EV05		C/P EXT VIS SCAN
185.00				090051		FLIGHT INSTRUMENT SCAN -A1
185.00	195.00		10.00	2J	02	MON PITCH ATTITUDE INDIC
185.00	195.00		10.00	3L	02	MON VERTICAL SPEED INDIC
185.00	195.00		10.00	3A	10	MONITOR AIRSPEED INDIC
185.00	195.00		10.00	2K	14	MON MAP VIDEO
185.00	195.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00		10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
185.00				180046		MON ADF/RMI-2
195.00				180091		HANDOFF TO ATL FINAL APPROACH CONTROLLER
195.00	207.00		12.00	1P16XX01		N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
200.00				180061		ENTER/ARM NEW ALT IN MCP
200.00	202.47		2.47	2H	33	ROTATE ALT ENG KNOB
200.00	200.78		0.78	2H	31	MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
201.40	202.46		1.06	2H	34	READ ALT ENG VALUE ON DIGITAL INDIC
202.50	203.92		1.42	2H	28	PRESS ALT ENG MODE S SW
203.90	204.68		0.78	2H	30	MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
200.00				16BL02		BEGIN TURN TO DOWN-WIND LEG
205.00				180062		ENTER NEW HEADNG IN MCP
205.00	207.50		2.50	2H	19	ROTATE TKA SEL KNOB
205.00	206.11		1.11	2H	20	READ TKA SEL VALUE ON DIGITAL INDIC
207.50	208.27		0.77	2H	15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00				16BL03		DESCEND THRU 11000.
210.00				090051		FLIGHT INSTRUMENT SCAN -A1
210.00	220.00		10.00	2J	02	MON PITCH ATTITUDE INDIC
210.00	220.00		10.00	3L	02	MON VERTICAL SPEED INDIC
210.00	220.00		10.00	3A	10	MONITOR AIRSPEED INDIC
210.00	220.00		10.00	2K	14	MON MAP VIDEO
210.00	220.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
210.00	220.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
219.00			160092		TUNE ATL APPROACH ON 127.25
226.00			160093		CONTACT ATL APPROACH ON 127.25
231.50	235.50	4.00	1P16TY90		NASA 515,ATL APPR, ROGER.
220.00			090048		FLIGHT INSTRUMENT SCAN -A2
220.00	250.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
220.00	250.00	30.00	3L	02	MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A	10	MONITOR AIRSPEED INDIC
220.00	250.00	30.00	2K	14	MON MAP VIDEO
220.00	250.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
220.00	250.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
240.00			00EV09		C/P EXT VIS SCAN
250.00			090048		FLIGHT INSTRUMENT SCAN -A2
250.00	280.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L	02	MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A	10	MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K	14	MON MAP VIDEO
250.00	280.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
280.00			090048		FLIGHT INSTRUMENT SCAN -A2
280.00	310.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L	02	MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A	10	MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K	14	MON MAP VIDEO
280.00	310.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
310.00			090048		FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L	02	MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A	10	MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K	14	MON MAP VIDEO
310.00	340.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
340.00			090048		FLIGHT INSTRUMENT SCAN -A2
340.00	370.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L	02	MON VERTICAL SPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
340.00	370.00	30.00	3A	10	MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K	14	MON MAP VIDEO
340.00	370.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
288.00			030007		ENGINE INSTRUMENT SCAN
295.00			00EV09		C/P EXT VIS SCAN
340.00			00EV04		C/P EXT VIS SCAN
363.00			030007		ENGINE INSTRUMENT SCAN
370.00			16BL04		DESCEND THRU 8600.
370.00			160094		ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX94		NASA 515,DESCEND AND MAINTAIN 5000 FT.
375.00			180081		ENTER/ARM NEW ALT IN MCP
375.00	377.47	2.47	2H	33	ROTATE ALT ENG KNOB
375.00	375.78	0.78	2H	31	MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
376.40	377.46	1.06	2H	34	READ ALT ENG VALUE ON DIGITAL INDIC
377.50	378.92	1.42	2H	28	PRESS ALT ENG MODE S SW
378.90	379.68	0.78	2H	30	MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
385.00			090048		FLIGHT INSTRUMENT SCAN -A2
385.00	415.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
385.00	415.00	30.00	3L	02	MON VERTICAL SPEED INDIC
385.00	415.00	30.00	3A	10	MONITOR AIRSPEED INDIC
385.00	415.00	30.00	2K	14	MON MAP VIDEO
385.00	415.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
385.00	415.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
415.00			090048		FLIGHT INSTRUMENT SCAN -A2
415.00	445.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
415.00	445.00	30.00	3L	02	MON VERTICAL SPEED INDIC
415.00	445.00	30.00	3A	10	MONITOR AIRSPEED INDIC
415.00	445.00	30.00	2K	14	MON MAP VIDEO
415.00	445.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
415.00	445.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
445.00			090048		FLIGHT INSTRUMENT SCAN -A2
445.00	475.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
445.00	475.00	30.00	3L	02	MON VERTICAL SPEED INDIC
445.00	475.00	30.00	3A	10	MONITOR AIRSPEED INDIC
445.00	475.00	30.00	2K	14	MON MAP VIDEO

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
445.00	475.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
445.00	475.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
475.00			090048	FLIGHT INSTRUMENT SCAN -A2	
475.00	505.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
475.00	505.00	30.00	3L	02	MON VERTICAL SPEED INDIC
475.00	505.00	30.00	3A	10	MONITOR AIRSPEED INDIC
475.00	505.00	30.00	2K	14	MON MAP VIDEO
475.00	505.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
475.00	505.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
505.00			090051	FLIGHT INSTRUMENT SCAN -A1	
505.00	515.00	10.00	2J	02	MON PITCH ATTITUDE INDIC
505.00	515.00	10.00	3L	02	MON VERTICAL SPEED INDIC
505.00	515.00	10.00	3A	10	MONITOR AIRSPEED INDIC
505.00	515.00	10.00	2K	14	MON MAP VIDEO
505.00	515.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
505.00	515.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
385.00			00EV08	C/P EXT VIS SCAN	
430.00			030007	ENGINE INSTRUMENT SCAN	
440.00			00EV03	C/P EXT VIS SCAN	
450.00			160002	TUNE ATIS -119.65	
458.00	482.00	24.00	1A	15	MON VHF-1 COMM AUDIO
458.00	461.42	3.42	1P160001		MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42	465.98	4.56	1P160002		FIVE HUNDRED SCATTERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.98	470.54	4.56	1P160003		TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54	475.10	4.56	1P160004		. ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARALLEL APPROACHES IN
475.10	479.66	4.56	1P160005		OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CONTROLLER ON INITIAL
479.66	481.94	2.28	1P160006		CONTACT YOU HAVE INFORMATION LIMA.]
460.00			160048	MON ADF/RMI-2	
460.00			16SL05	CROSS FT NDB	
465.00			00EV09	C/P EXT VIS SCAN	
480.00			160003	SET ALTIMETER BARO SETTING TO 29.84	
480.00	483.50	3.50	1P	13	MONITOR CALL-OUT
484.00			140032	ALTIMETER BARO SET PROC.	
484.00	486.65	2.65	3H	04	MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H	03	SET ALTIMETER BARO SETTING CONTROL

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
513.00			030007		ENGINE INSTRUMENT SCAN
519.00			160041		MON VOR/RMI-1
519.00	521.00	2.00		5G 04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00		5G 05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			160095		VECTOR FOR BASE LEG FROM ATL APPROACH
520.00	525.00	5.00		1P16XX95	NASA 515,TURN LEFT HEADING 180.
523.00			180082		ENTER NEW HEADNG IN MCP
523.00	525.50	2.50		2H 19	ROTATE TKA SEL KNOB
523.00	524.11	1.11		2H 20	READ TKA SEL VALUE ON DIGITAL INDIC
525.50	526.27	0.77		2H 15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
523.00			16BL06		BEGIN TURN TO BASE
540.00			140023		REPORT 1000 FT TO LEVEL OFF
542.00	543.70	1.70		1P 11	MONITOR CALL-OUT
550.00			00EV03		C/P EXT VIS SCAN
555.00			090051		FLIGHT INSTRUMENT SCAN -A1
555.00	565.00	10.00		2J 02	MON PITCH ATTITUDE INDIC
555.00	565.00	10.00		3L 02	MON VERTICAL SPEED INDIC
555.00	565.00	10.00		3A 10	MONITOR AIRSPEED INDIC
555.00	565.00	10.00		2K 14	MON MAP VIDEO
555.00	565.00	10.00		2K 46	MON STRAIGHT TREND VECTOR SYMBOL
555.00	565.00	10.00		2K 33	MON CURVED TREND VECTOR SYMBOLS
565.00			160041		MON VOR/RMI-1
565.00	567.00	2.00		5G 04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
565.00	567.00	2.00		5G 05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00			160042		MON ADF/RMI-1
569.00	571.00	2.00		5D 28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00	2.00		5D 29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00			160096		VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL
570.00	580.00	10.00		1P16XX96	NASA 515,12 MILES FROM OM,TURN LT HDG 110.MAINTAIN 5000 FT UNTIL CROSSING BAHRR
580.00	587.00	7.00		1P16ZZ96	CLEARED FOR ILS RUNWAY 8 LEFT APPROACH. CONTACT TOWER ON 119.5 AT BAHRR.
575.00			180082		ENTER NEW HEADNG IN MCP
575.00	577.50	2.50		2H 19	ROTATE TKA SEL KNOB
575.00	576.11	1.11		2H 20	READ TKA SEL VALUE ON DIGITAL INDIC
577.50	578.27	0.77		2H 15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
575.00			16BL07		TURN TO INTERCEPT FINAL APPR. COURSE

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
585.00				180083	ARM LAND MODE	
585.00	587.13		2.13	2H	10	PRESS LAND MODE SW
587.20	588.25		1.05	2H	12	MON LAND MODE LT ORANGE - LAND MODE ARMED
597.00				180034	TUNE ATLANTA TOWER -119.5	
600.00				180070	FLIGHT INSTRUMENT SCAN -A1, PILOT	
600.00	610.00		10.00	2K	14	MON MAP VIDEO
600.00	610.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
600.00	610.00		10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
600.00	610.00		10.00	2J	05	MON FLT PATH ANGLE INDIC
600.00	610.00		10.00	2J	04	MON FLT PATH ACCEL INDIC
600.00	610.00		10.00	2J	01	MON ROLL ATT INDIC
600.00	610.00		10.00	2J	19	MON PITCH REF INDIC
600.00	610.00		10.00	3A	10	MONITOR AIRSPEED INDIC
607.00				180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
610.00				180084	CAPTURE AN ALT IN ALT SEL MODE	
610.00	610.78		0.78	2H	29	MONITOR ALT ENG MODE LT GREEN - ALT ENG MODE ENGAGED
611.00	611.77		0.77	2H	25	MONITOR FPA SEL MODE LT DARK - FPA SEL MODE DISENGAGED
610.00				19BL08	LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS	
617.00				180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
613.00				180085	ENTER NEW SPEED IN CAS WINDOW	
613.00	615.45		2.45	2H	47	ROTATE CAS ENF KNOB
613.00	614.04		1.04	2H	48	READ CAS ENG VALUE ON DIGITAL INDIC
615.50	616.28		0.78	2H	44	MON CAS ENG MODE LT GREEN - CAS MODE ENGAGED
623.00				180086	CAPTURE LOCALIZER	
623.00	625.19		2.19	2J	13	MON ILS BOX INDIC
625.00	626.50		1.50	1P	02	MONITOR CALL-OUT
625.00	625.77		0.77	2H	16	MON TKA SEL MODE LT DARK - TKA SEL MODE DISENGAGED
626.00				180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
626.00	656.00		30.00	2K	14	MON MAP VIDEO
626.00	656.00		30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
626.00	656.00		30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
626.00	656.00		30.00	2J	13	MON ILS BOX INDIC
626.00	656.00		30.00	2J	04	MON FLT PATH ACCEL INDIC
626.00	656.00		30.00	2J	01	MON ROLL ATT INDIC
626.00	656.00		30.00	2J	19	MON PITCH REF INDIC
626.00	656.00		30.00	3A	10	MONITOR AIRSPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
627.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
637.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
643.00			160045		ANNUNCIATOR RECALL
647.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
655.00			160041		MON VOR/RMI-1
655.00	657.00	2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00	2.00	5G	05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00			160042		MON ADF/RMI-1
657.00	659.00	2.00	5D	28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
657.00	659.00	2.00	5D	29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00			160048		MON ADF/RMI-2
660.00			16BL09		REACH 210 KCAS
660.00			180067		CAPTURE GLIDE SLOPE
660.00	662.19	2.19	2J	13	MON ILS BOX INDIC
662.00	663.05	1.05	2H	11	MON LAND MODE LT GREEN - LAND MODE ENGAGED
664.00			160061		CONTACT TOWER FOR FINAL LANDING CLEAR-ANCE
674.40	681.40	7.00	1B	19	MON VHF-2 COMM AUDIO
674.40	678.40	4.00	1P160040		MON RADIO COMM - [NASA 515, NO. 3 FOR SL.DC-8 3 MI AHEAD.WIND 110
678.40	681.40	3.00	1P160041		AT NINE.CLEARED TO LAND RW SL.
684.00			16BL10		CROSS BAHRR
684.00			160011		SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P160058		CALL OUT -[FLAPS 1]
689.00	689.70	0.70	1P	10	MONITOR CALL-OUT
691.00	691.44	0.44	7F	30	MON ENG NO 2 EPR IND
691.00	691.44	0.44	7F	25	MON ENG NO 1 EPR IND
670.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
670.00	700.00	30.00	2K	14	MON MAP VIDEO
670.00	700.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
670.00	700.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
670.00	700.00	30.00	2J	13	MON ILS BOX INDIC
670.00	700.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
670.00	700.00	30.00	2J	01	MON ROLL ATT INDIC
670.00	700.00	30.00	2J	18	MON PITCH REF INDIC
670.00	700.00	30.00	3A	10	MONITOR AIRSPEED INDIC
685.00			16BL11		REACH 190 KCAS
694.00			180017		SET FLAPS TO FLAPS 5
694.00	694.70	0.70	1P160061		CALL OUT -[FLAPS 5]
694.00			180018		FLAP SET PROCEDURE
700.03	700.73	0.70	1P	10	MONITOR CALL-OUT
701.00	701.44	0.44	7F	25	MON ENG NO 1 EPR IND
701.44	701.88	0.44	7F	30	MON ENG NO 2 EPR IND

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
699.00				030007	ENGINE INSTRUMENT SCAN	
700.00				180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
700.00	730.00		30.00	2K	14	MON MAP VIDEO
700.00	730.00		30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
700.00	730.00		30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
700.00	730.00		30.00	2J	13	MON ILS BOX INDIC
700.00	730.00		30.00	2J	04	MON FLT PATH ACCEL INDIC
700.00	730.00		30.00	2J	01	MON ROLL ATT INDIC
700.00	730.00		30.00	2J	19	MON PITCH REF INDIC
700.00	730.00		30.00	3A	10	MONITOR AIRSPEED INDIC
708.00				168L12	REACH 170 KCAS	
710.00				180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
720.00				180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
730.00				180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
730.00				00EV21	PILOT EXT VIS SCAN	
730.00	735.00		5.00	8A	10	PILOT EXTERNAL VISION SCAN
740.00				160069	SET SPEED BRAKES	
740.00	743.28		3.28	4F	02	SET SPEED BRAKE LEVER TO ARM
740.00	740.73		0.73	4F	07	MONITOR SPEED BRAKE LEVER ARMED LT GREEN
744.00				160048	MON ADF/RMI-2	
745.00				180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
745.00	775.00		30.00	2K	14	MON MAP VIDEO
745.00	775.00		30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
745.00	775.00		30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
745.00	775.00		30.00	2J	13	MON ILS BOX INDIC
745.00	775.00		30.00	2J	04	MON FLT PATH ACCEL INDIC
745.00	775.00		30.00	2J	01	MON ROLL ATT INDIC
745.00	775.00		30.00	2J	19	MON PITCH REF INDIC
745.00	775.00		30.00	3A	10	MONITOR AIRSPEED INDIC
745.00				168L13	CROSS REIFF	
748.00				160070	SET AUTO BRAKES	
755.00				00EV01	C/P EXT VIS SCAN	
765.00				180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
775.00				180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
775.00				180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
775.00	805.00		30.00	2K	14	MON MAP VIDEO
775.00	805.00		30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
775.00	805.00		30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
775.00	805.00		30.00	2J	13	MON ILS BOX INDIC

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
775.00	805.00	30.00	2J 04	MON FLT PATH ACCEL INDIC
775.00	805.00	30.00	2J 01	MON ROLL ATT INDIC
775.00	805.00	30.00	2J 19	MON PITCH REF INDIC
775.00	805.00	30.00	3A 10	MONITOR AIRSPEED INDIC
800.00			160058	REPORT RUNWAY IN SIGHT
802.00	803.00	1.00	1P 10	MONITOR CALL-OUT
805.00			00EV21	PILOT EXT VIS SCAN
805.00	810.00	5.00	8A 10	PILOT EXTERNAL VISION SCAN
808.00			160018	FLAP SET PROCEDURE
814.03	814.73	0.70	1P 10	MONITOR CALL-OUT
815.00	815.44	0.44	7F 25	MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F 30	MON ENG NO 2 EPR IND
808.00			160025	SET FLAPS TO FLAPS 15
808.00	808.70	0.70	1P160062	CALL OUT -[FLAPS 15]
812.00			160042	MON ADF/RMI-1
812.00	814.00	2.00	5D 28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	5D 29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			160059	CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V 11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P160075	CALL OUT -[GEAR DOWN AND LANDING CHECK-LIST]
815.00	817.10	2.10	3N 03	START ELAPSED TIME INDIC
815.00			168L14	CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049	MON RADIO ALTIMETER
820.00			160080	EXTEND LANDING GEAR
820.00			160071	FLIGHT INSTRUMENT SCAN -A2, PILOT
820.00	850.00	30.00	2K 14	MON MAP VIDEO
820.00	850.00	30.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
820.00	850.00	30.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
820.00	850.00	30.00	2J 13	MON ILS BOX INDIC
820.00	850.00	30.00	2J 04	MON FLT PATH ACCEL INDIC
820.00	850.00	30.00	2J 01	MON ROLL ATT INDIC
820.00	850.00	30.00	2J 19	MON PITCH REF INDIC
820.00	850.00	30.00	3A 10	MONITOR AIRSPEED INDIC
845.00			160062	LANDING CHECKLIST
847.00	847.80	0.80	1P 10	MONITOR CALL-OUT
847.80	848.00	0.40	1P 14	MONITOR CALL-OUT
850.00	850.70	0.70	1P 10	MONITOR CALL-OUT
851.00	852.30	1.30	1P160079	CALL OUT -[ARMED - GREEN LIGHT]
854.50	855.20	0.70	1P 10	MONITOR CALL-OUT
855.20	856.20	1.00	1P 10	MONITOR CALL-OUT
858.20	858.60	0.40	1P 14	MONITOR CALL-OUT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
858.60	859.70	1.10	1P	12	MONITOR CALL-OUT
850.00			00EV21	PILOT EXT VIS SCAN	
850.00	855.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
855.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
855.00	885.00	30.00	2K	14	MON MAP VIDEO
855.00	885.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
855.00	885.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
855.00	885.00	30.00	2J	13	MON ILS BOX INDIC
855.00	885.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
855.00	885.00	30.00	2J	01	MON ROLL ATT INDIC
855.00	885.00	30.00	2J	19	MON PITCH REF INDIC
855.00	885.00	30.00	3A	10	MONITOR AIRSPEED INDIC
885.00			00EV02	C/P EXT VIS SCAN	
877.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
889.00			030007	ENGINE INSTRUMENT SCAN	
885.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
885.00	915.00	30.00	2K	14	MON MAP VIDEO
885.00	915.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
885.00	915.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
885.00	915.00	30.00	2J	13	MON ILS BOX INDIC
885.00	915.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
885.00	915.00	30.00	2J	01	MON ROLL ATT INDIC
885.00	915.00	30.00	2J	19	MON PITCH REF INDIC
885.00	915.00	30.00	3A	10	MONITOR AIRSPEED INDIC
895.00			180049	MON RADIO ALTIMETER	
900.00			00EV04	C/P EXT VIS SCAN	
923.00			180065	DESCEND THRU -DECISION HEIGTH	
925.58	926.38	0.80	1P	11	MONITOR CALL-OUT
915.00			00EV21	PILOT EXT VIS SCAN	
915.00	920.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
920.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
920.00	950.00	30.00	2K	14	MON MAP VIDEO
920.00	950.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
920.00	950.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
920.00	950.00	30.00	2J	13	MON ILS BOX INDIC
920.00	950.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
920.00	950.00	30.00	2J	01	MON ROLL ATT INDIC
920.00	950.00	30.00	2J	19	MON PITCH REF INDIC
920.00	950.00	30.00	3A	10	MONITOR AIRSPEED INDIC

ORIGINAL PAGE IS
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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
925.00			180064	CROSS RWY 08 MIDDLE MARKER	
925.00	926.91	1.91	3V	13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15	CROSS MIDDLE MARKER	
930.00			00EV02	C/P EXT VIS SCAN	
940.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
941.00			16BL16	CROSS RW THRESHOLD	
950.00			16BL17	TOUCHDOWN	
950.00			180036	TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS	
950.00	980.00	30.00	8A	11	PILOT EXTERNAL VISION SCAN
950.00	980.00	30.00	2J	15	MON TV VIDEO
950.00	980.00	30.00	2J	40	MON EADI RNWY
950.00	980.00	30.00	2J	41	MON EADI DRIFT INDIC
950.00	980.00	30.00	7F	25	MON ENG NO 1 EPR IND
950.00	980.00	30.00	7F	30	MON ENG NO 2 EPR IND
980.00			180036	TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS	
980.00	1010.00	30.00	8A	11	PILOT EXTERNAL VISION SCAN
980.00	1010.00	30.00	2J	15	MON TV VIDEO
980.00	1010.00	30.00	2J	40	MON EADI RNWY
980.00	1010.00	30.00	2J	41	MON EADI DRIFT INDIC
980.00	1010.00	30.00	7F	25	MON ENG NO 1 EPR IND
980.00	1010.00	30.00	7F	30	MON ENG NO 2 EPR IND
1010.00			180037	DISENGAGE AGCS	
1010.00	1012.13	2.13	2H	10	PRESS LAND MODE SW
1012.13	1013.18	1.05	2H	13	MON LAND MODE LT DARK - LAND MODE DISENGAGED
1013.18	1014.62	1.44	2H	01	PRESS ATT CWS MODE SW
1014.62	1015.67	1.05	2H	02	MON ATT CWS MODE LT GREEN - ATT CWS ENGAGED
1015.67	1017.01	1.34	2H	09	MON AUTO MODE LT DARK - AUTO MODE DISENGAGED
1010.00	1020.00	10.00	4A	64	MANUALLY CONTROL A/C
1020.00	1025.00	5.00	4A	64	MANUALLY CONTROL A/C
1010.00			00EV23	PILOT EXT VIS SCAN	
1010.00	1025.00	15.00	8A	10	PILOT EXTERNAL VISION SCAN
984.00			180071	HANDOFF TO GROUND CONTROL -121.9	
984.00	990.00	6.00	1B	18	MON VHF-2 COMM AUDIO
984.00	987.50	3.50	1P180087		MON RADIO COMM - [NASA 515,EXIT RUN-WAY NEXT INTERSEC-TION. CONTACT GROUND
987.50	990.00	2.50	1P180088		POINT MINER WHEN CLEAR OF RUNWAY, OVER]
1004.00	1007.50	3.50	1B	18	MON VHF-2 COMM AUDIO
1004.00	1007.50	3.50	1P180091		MON RADIO COMM - [NASA 515, ATLANTA GROUND, TAXI TO RAMP VIA NORTHEAST=SOUTH-
1007.50	1008.50	1.00	1P180092		WEST TAXIWAY, OVER]

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* UNSHIFTED    *
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*                                       *
*        MISSION SCENARIO REPORT        *
*                                       *
*  MISSION - MD-S DATA LINK             *
*            ILS AP-BASE LN.            *
*                                       *
*  CONFIGURATION - 737 ADVCND FLT DCK   *
*                                       *
*  CREWMEMBER - PILOT                   *
*                                       *
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NOV10 1986

TIME INTERVAL (SECS) SINCE MISSION BEGINNING	START	END	TOTAL ACTIVITY TIME	FLIGHT PHASE EVENT/PROCEDURE TASK		
0.00				18DL DATA LINK AFD ILS AP		
0.00				18DL01		CROSS LOGEN INTERSEC TION AT 250 KCAS AND 14000 FEET.ATL CENTR HAS PREVIOUSLY INSTR UCTED NASA 515 TO MONITOR ATL APPROACH ON 126.9 AT LOGEN. VHF-2R HAS BEEN SET.
0.00				18DL90		MONITOR ATL APPROACH ON 126.9/VHF-2R
0.00				180080		DROP OUT OF HOR AND VERT PATH TO FPA,TKA,AND CAS AUTO FLT MODES ENTER FPA IN MCP
0.00	0.78		0.78	2H	38	MON HOR PATH MODE LT DARK - HOR PATH MODE DISENGAGED
0.00	0.78		0.78	2H	42	MON VERT PATH MODE LT DARK - VERT PATH MODE DISENGAGED
0.80	2.14		1.34	2H	08	MON AUTO MODE LT GREEN - AUTO MODE ENGAGED
2.10	2.87		0.77	2H	15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
2.10	2.87		0.77	2H	22	MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
2.90	5.35		2.45	2H	26	ROTATE FPA SEL KNOB
2.90	3.67		0.77	2H	24	MONITOR FPA SEL MODE LT BLUE - FPA SEL MODE PRESELECTED
4.30	5.38		1.08	2H	27	READ FPA SEL VALUE ON DIGITAL INDIC
5.40	7.40		2.00	2K	32	MON ALT/RNG SYMBOLS
7.40	8.80		1.40	2H	21	PRESS FPA SEL MODE SW
8.80	9.57		0.77	2H	22	MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
10.00				090048		FLIGHT INSTRUMENT SCAN -A2
10.00	40.00		30.00	2J	02	MON PITCH ATTITUDE INDIC
10.00	40.00		30.00	3L	02	MON VERTICAL SPEED INDIC
10.00	40.00		30.00	3A	10	MONITOR AIRSPEED INDIC
10.00	40.00		30.00	2K	14	MON MAP VIDEO
10.00	40.00		30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
10.00	40.00		30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
40.00				090048		FLIGHT INSTRUMENT SCAN -A2
40.00	70.00		30.00	2J	02	MON PITCH ATTITUDE INDIC
40.00	70.00		30.00	3L	02	MON VERTICAL SPEED INDIC
40.00	70.00		30.00	3A	10	MONITOR AIRSPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
40.00	70.00	30.00	2K	14	MON MAP VIDEO
40.00	70.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
40.00	70.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
70.00			080046		FLIGHT INSTRUMENT SCAN -A2
70.00	100.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
70.00	100.00	30.00	3L	02	MON VERTICAL SPEED INDIC
70.00	100.00	30.00	3A	10	MONITOR AIRSPEED INDIC
70.00	100.00	30.00	2K	14	MON MAP VIDEO
70.00	100.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
70.00	100.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
15.00			180013		SET NAV-1 TO RUNWAY 8L ILS -109.3
31.50	34.00	2.50	1P	12	MONITOR CALL-OUT
34.00	36.25	2.25	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
60.00			00EV30		PILOT EXT VIS SCAN
60.00	110.00	50.00	8A	12	PILOT EXTERNAL VISION SCAN
38.00			180039		SET ADF-1 TO CATTA -375KC
45.73	47.23	1.50	1P	02	MONITOR CALL-OUT
49.00			180040		SET ADF-2 TO FLANC -344
54.00	55.50	1.50	1P	02	MONITOR CALL-OUT
58.00			180038		SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007		ENGINE INSTRUMENT SCAN
70.00			180005		DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P180043		CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
85.00	86.00	1.00	1P	10	MONITOR CALL-OUT
87.00	87.80	0.80	1P	07	MONITOR REPORT
90.00	91.80	1.80	1P	13	MONITOR CALL-OUT
98.00	98.40	0.40	1P	16	MONITOR REPORT
100.00			180006		DESCENT AND APPROACH CHECKLIST - 2
102.00	102.90	0.90	1P	11	MONITOR CALL-OUT
103.00	106.54	3.54	7M	03	SET ENG NO.1 START SW TO FLT
106.54	108.28	1.74	7M	06	SET ENG NO.2 START SW TO FLT
108.50	109.00	0.50	1P180049		CALL OUT [FLIGHT]
111.00	112.10	1.10	1P	12	MONITOR CALL-OUT
114.20	114.50	0.30	1P	16	MONITOR REPORT
116.50	117.90	1.40	1P	12	MONITOR CALL-OUT
123.40	124.70	1.30	1P	09	MONITOR REPORT
126.00			180007		DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P	02	MONITOR CALL-OUT
146.00	147.90	1.90	1P	14	MONITOR CALL-OUT
148.00	150.57	2.57	3A	07	MON V-REF BUG SETTING

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
148.00	150.57	2.57	3A 05 SET V-REF BUG
151.00	154.00	3.00	3A 13 CAPT CHECK F.O.<S V-REF BUG SETTING
154.00	155.60	1.60	1P 08 MONITOR REPORT
157.60	158.90	1.30	1P 02 MONITOR CALL-OUT
165.00			030007 ENGINE INSTRUMENT SCAN
150.00			00EV05 C/P EXT VIS SCAN
185.00			090051 FLIGHT INSTRUMENT SCAN -A1
185.00	195.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
185.00	195.00	10.00	3L 02 MON VERTICAL SPEED INDIC
185.00	195.00	10.00	3A 10 MONITOR AIRSPEED INDIC
185.00	195.00	10.00	2K 14 MON MAP VIDEO
185.00	195.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
195.00			160048 MON ADF/RMI-2
195.00			16DL91 HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	196.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PHDG] AMBER
200.40	210.40	10.00	1D16AA91 MONITOR UPLINK CALL-OUT FROM COPILOT
200.00			16DL81 ARM NEW DL MCP ALT
200.00	200.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
200.80	201.86	1.06	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
201.86	203.28	1.42	2H 28 PRESS ALT ENG MODE S SW
203.28	204.06	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
200.00			16BL02 BEGIN TURN TO DOWN-WIND LEG
205.00			16DL82 ENGAGE DATA LINKED HEADING IN MCP
205.00	205.77	0.77	2H 17 MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
205.80	206.91	1.11	2H 20 READ TKA SEL VALUE ON DIGITAL INDIC
206.90	208.31	1.41	2H 14 PRESS TKA SEL MODE SW
208.30	209.07	0.77	2H 15 MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			16BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
210.00	220.00	10.00	2J 02 MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L 02 MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A 10 MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K 14 MON MAP VIDEO

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OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
210.00	220.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
219.00			160092		TUNE ATL APPROACH ON 127.25
226.00			16DL93		MONITOR ATL APPROACH ON 127.25/VHF-2L
220.00			090048		FLIGHT INSTRUMENT SCAN -A2
220.00	250.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
220.00	250.00	30.00	3L	02	MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A	10	MONITOR AIRSPEED INDIC
220.00	250.00	30.00	2K	14	MON MAP VIDEO
220.00	250.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
220.00	250.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
240.00			00EV09		C/P EXT VIS SCAN
250.00			090048		FLIGHT INSTRUMENT SCAN -A2
250.00	280.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L	02	MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A	10	MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K	14	MON MAP VIDEO
250.00	280.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
280.00			090048		FLIGHT INSTRUMENT SCAN -A2
280.00	310.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L	02	MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A	10	MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K	14	MON MAP VIDEO
280.00	310.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
310.00			090048		FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L	02	MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A	10	MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K	14	MON MAP VIDEO
310.00	340.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
340.00			090048		FLIGHT INSTRUMENT SCAN -A2
340.00	370.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L	02	MON VERTICAL SPEED INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
340.00	370.00	30.00	3A	10	MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K	14	MON MAP VIDEO
340.00	370.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
288.00			030007		ENGINE INSTRUMENT SCAN
295.00			00EV09		C/P EXT VIS SCAN
340.00			00EV04		C/P EXT VIS SCAN
363.00			030007		ENGINE INSTRUMENT SCAN
370.00			16BL04		DESCEND THRU 8600.
370.00			16DL94		ALTITUDE STEP DOWN
370.00	371.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
371.60	373.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
375.40	379.40	4.00	1D16AA94		MONITOR UPLINK CALL-OUT FROM COPILOT
375.00			16DL81		ARM NEW DL MCP ALT
375.00	375.78	0.78	2H	31	MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
375.80	376.86	1.06	2H	34	READ ALT ENG VALUE ON DIGITAL INDIC
376.86	378.28	1.42	2H	28	PRESS ALT ENG MODE S SW
378.28	379.06	0.78	2H	30	MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
385.00			090048		FLIGHT INSTRUMENT SCAN -A2
385.00	415.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
385.00	415.00	30.00	3L	02	MON VERTICAL SPEED INDIC
385.00	415.00	30.00	3A	10	MONITOR AIRSPEED INDIC
385.00	415.00	30.00	2K	14	MON MAP VIDEO
385.00	415.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
385.00	415.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
415.00			090048		FLIGHT INSTRUMENT SCAN -A2
415.00	445.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
415.00	445.00	30.00	3L	02	MON VERTICAL SPEED INDIC
415.00	445.00	30.00	3A	10	MONITOR AIRSPEED INDIC
415.00	445.00	30.00	2K	14	MON MAP VIDEO
415.00	445.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
415.00	445.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
445.00			090048		FLIGHT INSTRUMENT SCAN -A2
445.00	475.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
445.00	475.00	30.00	3L	02	MON VERTICAL SPEED INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
445.00	475.00	30.00	3A	10	MONITOR AIRSPEED INDIC
445.00	475.00	30.00	2K	14	MON MAP VIDEO
445.00	475.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
445.00	475.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
475.00			090048		FLIGHT INSTRUMENT SCAN -A2
475.00	505.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
475.00	505.00	30.00	3L	02	MON VERTICAL SPEED INDIC
475.00	505.00	30.00	3A	10	MONITOR AIRSPEED INDIC
475.00	505.00	30.00	2K	14	MON MAP VIDEO
475.00	505.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
475.00	505.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
505.00			090051		FLIGHT INSTRUMENT SCAN -A1
505.00	515.00	10.00	2J	02	MON PITCH ATTITUDE INDIC
505.00	515.00	10.00	3L	02	MON VERTICAL SPEED INDIC
505.00	515.00	10.00	3A	10	MONITOR AIRSPEED INDIC
505.00	515.00	10.00	2K	14	MON MAP VIDEO
505.00	515.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
505.00	515.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
385.00			00EV06		C/P EXT VIS SCAN
430.00			030007		ENGINE INSTRUMENT SCAN
450.00			16DL02		RECEIVE ATL ETIS TERMINAL INFORMATION
458.80	460.20	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
460.20	462.20	2.00	1D16XX06		MON VISUAL ALERT DSP [MODE-S UPLINK PNDG] INDENTED BLUE
460.00			16BL05		CROSS FT NDB
480.00			160003		SET ALTIMETER BARO SETTING TO 29.84
480.00	483.50	3.50	1P	13	MONITOR CALL-OUT
484.00			140032		ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H	04	MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H	03	SET ALTIMETER BARO SETTING CONTROL
513.00			030007		ENGINE INSTRUMENT SCAN
519.00			160041		MON VOR/RMI-1
519.00	521.00	2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
519.00	521.00	2.00	5G	05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
520.00			16DL95		VECTOR FOR BASE LEG
520.00	521.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
521.60	523.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
525.40	528.40		3.00		1D16AA95	MONITOR UPLINK CALL-OUT FROM COPILOT
523.00				16DL82		ENGAGE DATA LINKED HEADING IN MCP
523.00	523.77		0.77	2H	17	MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
523.80	524.91		1.11	2H	20	READ TKA SEL VALUE ON DIGITAL INDIC
524.90	526.31		1.41	2H	14	PRESS TKA SEL MODE SW
526.30	527.07		0.77	2H	16	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
523.00				16BL06		BEGIN TURN TO BASE
540.00				140023		REPORT 1000 FT TO LEVEL OFF
542.00	543.70		1.70	1P	11	MONITOR CALL-OUT
550.00				00EV03		C/P EXT VIS SCAN
555.00				090051		FLIGHT INSTRUMENT SCAN -A1
555.00	565.00		10.00	2J	02	MON PITCH ATTITUDE INDIC
555.00	565.00		10.00	3L	02	MON VERTICAL SPEED INDIC
555.00	565.00		10.00	3A	10	MONITOR AIRSPEED INDIC
555.00	565.00		10.00	2K	14	MON MAP VIDEO
555.00	565.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
555.00	565.00		10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
565.00				160041		MON VOR/RMI-1
565.00	567.00		2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
565.00	567.00		2.00	5G	05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
569.00				160042		MON ADF/RMI-1
569.00	571.00		2.00	5D	28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
569.00	571.00		2.00	5D	29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
570.00				16DL96		VECTOR TO FINAL APPR
570.00	571.60		1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
571.60	573.60		2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
575.40	584.40		9.00	1D16AA96		MONITOR UPLINK CALL-OUT FROM COPILOT
584.40	591.40		7.00	1D16AA97		MONITOR UPLINK CALL-OUT FROM COPILOT
575.00				16DL82		ENGAGE DATA LINKED HEADING IN MCP
575.00	575.77		0.77	2H	17	MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
575.80	576.91		1.11	2H	20	READ TKA SEL VALUE ON DIGITAL INDIC
576.90	578.31		1.41	2H	14	PRESS TKA SEL MODE SW
578.30	579.07		0.77	2H	16	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
575.00				16BL07		TURN TO INTERCEPT FINAL APPR. COURSE
585.00				180083		ARM LAND MODE

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
585.00	587.13	2.13	2H	10	PRESS LAND MODE SW
587.20	588.25	1.05	2H	12	MON LAND MODE LT ORANGE - LAND MODE ARMED
597.00			180034		TUNE ATLANTA TOWER -119.5
600.00			180070		FLIGHT INSTRUMENT SCAN -A1, PILOT
600.00	610.00	10.00	2K	14	MON MAP VIDEO
600.00	610.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
600.00	610.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
600.00	610.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
600.00	610.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
600.00	610.00	10.00	2J	01	MON ROLL ATT INDIC
600.00	610.00	10.00	2J	19	MON PITCH REF INDIC
600.00	610.00	10.00	3A	10	MONITOR AIRSPEED INDIC
607.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
610.00			180084		CAPTURE AN ALT IN ALT SEL MODE
610.00	610.78	0.78	2H	29	MONITOR ALT ENG MODE LT GREEN - ALT ENG MODE ENGAGED
611.00	611.77	0.77	2H	25	MONITOR FPA SEL MODE LT DARK - FPA SEL MODE DISENGAGED
610.00			16BL08		LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
613.00			180085		ENTER NEW SPEED IN CAS WINDOW
613.00	615.46	2.46	2H	47	ROTATE CAS ENF KNOB
613.00	614.04	1.04	2H	48	READ CAS ENG VALUE ON DIGITAL INDIC
615.50	616.28	0.78	2H	44	MON CAS ENG MODE LT GREEN - CAS MODE ENGAGED
623.00			180086		CAPTURE LOCALIZER
623.00	625.19	2.19	2J	13	MON ILS BOX INDIC
625.00	626.50	1.50	1P	02	MONITOR CALL-OUT
625.00	625.77	0.77	2H	18	MON TKA SEL MODE LT DARK - TKA SEL MODE DISENGAGED
626.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
626.00	656.00	30.00	2K	14	MON MAP VIDEO
626.00	656.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
626.00	656.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
626.00	656.00	30.00	2J	13	MON ILS BOX INDIC
626.00	656.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
626.00	656.00	30.00	2J	01	MON ROLL ATT INDIC
626.00	656.00	30.00	2J	19	MON PITCH REF INDIC
626.00	656.00	30.00	3A	10	MONITOR AIRSPEED INDIC
627.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
637.00				160073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
643.00				160045		ANNUNCIATOR RECALL
647.00				160073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
655.00				160041		MON VOR/RMI-1
655.00	657.00		2.00	5G	04	MON VOR POINTER NO.1 ON VOR/RMI 1 INDIC
655.00	657.00		2.00	5G	05	MON VOR POINTER NO.2 ON VOR/RMI 1 INDIC
657.00				160042		MON ADF/RMI-1
657.00	659.00		2.00	5D	28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
657.00	659.00		2.00	5D	29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
657.00				160048		MON ADF/RMI-2
660.00				16BL09		REACH 210 KCAS
660.00				160067		CAPTURE GLIDE SLOPE
660.00	662.19		2.19	2J	13	MON ILS BOX INDIC
662.00	663.05		1.05	2H	11	MON LAND MODE LT GREEN - LAND MODE ENGAGED
664.00				16DL60		MONITOR ATL TOWER ON 119.5/VHF-2R
670.00				16DL61		LANDING CLEARANCE
670.00	671.60		1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
671.60	673.60		2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
675.40	685.40		10.00	1D16AA40		MONITOR UPLINK CALL-OUT FROM COPILOT
684.00				16BL10		CROSS BAHRR
684.00				160011		SET FLAPS TO FLAPS 1
684.00	684.70		0.70	1P160058		CALL OUT -[FLAPS 1]
689.00	689.70		0.70	1P	10	MONITOR CALL-OUT
691.00	691.44		0.44	7F	30	MON ENG NO 2 EPR IND
691.00	691.44		0.44	7F	25	MON ENG NO 1 EPR IND
670.00				160071		FLIGHT INSTRUMENT SCAN -A2, PILOT
670.00	700.00		30.00	2K	14	MON MAP VIDEO
670.00	700.00		30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
670.00	700.00		30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
670.00	700.00		30.00	2J	13	MON ILS BOX INDIC
670.00	700.00		30.00	2J	04	MON FLT PATH ACCEL INDIC
670.00	700.00		30.00	2J	01	MON ROLL ATT INDIC
670.00	700.00		30.00	2J	19	MON PITCH REF INDIC
670.00	700.00		30.00	3A	10	MONITOR AIRSPEED INDIC
685.00				16BL11		REACH 190 KCAS
694.00				160017		SET FLAPS TO FLAPS 5
694.00	694.70		0.70	1P160061		CALL OUT -[FLAPS 5]
694.00				160018		FLAP SET PROCEDURE
700.03	700.73		0.70	1P	10	MONITOR CALL-OUT
701.00	701.44		0.44	7F	25	MON ENG NO 1 EPR IND
701.44	701.88		0.44	7F	30	MON ENG NO 2 EPR IND

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OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
699.00			030007	ENGINE INSTRUMENT SCAN	
700.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
700.00	730.00	30.00	2K	14	MON MAP VIDEO
700.00	730.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
700.00	730.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
700.00	730.00	30.00	2J	13	MON ILS BOX INDIC
700.00	730.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
700.00	730.00	30.00	2J	01	MON ROLL ATT INDIC
700.00	730.00	30.00	2J	19	MON PITCH REF INDIC
700.00	730.00	30.00	3A	10	MONITOR AIRSPEED INDIC
708.00			16BL12	REACH 170 KCAS	
710.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
720.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
730.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
730.00			00EV21	PILOT EXT VIS SCAN	
730.00	735.00	5.00	6A	10	PILOT EXTERNAL VISION SCAN
740.00			180069	SET SPEED BRAKES	
740.00	743.26	3.26	4F	02	SET SPEED BRAKE LEVER TO ARM
740.00	740.73	0.73	4F	07	MONITOR SPEED BRAKE LEVER ARMED LT GREEN
744.00			180048	MON ADF/RMI-2	
745.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
745.00	775.00	30.00	2K	14	MON MAP VIDEO
745.00	775.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
745.00	775.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
745.00	775.00	30.00	2J	13	MON ILS BOX INDIC
745.00	775.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
745.00	775.00	30.00	2J	01	MON ROLL ATT INDIC
745.00	775.00	30.00	2J	19	MON PITCH REF INDIC
745.00	775.00	30.00	3A	10	MONITOR AIRSPEED INDIC
745.00			16BL13	CROSS REIFF	
748.00			180070	SET AUTO BRAKES	
755.00			00EV01	C/P EXT VIS SCAN	
765.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
775.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
775.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
775.00	805.00	30.00	2K	14	MON MAP VIDEO
775.00	805.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
775.00	805.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
775.00	805.00	30.00	2J	13	MON ILS BOX INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
775.00	805.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
775.00	805.00	30.00	2J	01	MON ROLL ATT INDIC
775.00	805.00	30.00	2J	19	MON PITCH REF INDIC
775.00	805.00	30.00	3A	10	MONITOR AIRSPEED INDIC
800.00			160058		REPORT RUNWAY IN SIGHT
802.00	803.00	1.00	1P	10	MONITOR CALL-OUT
805.00			00EV21		PILOT EXT VIS SCAN
805.00	810.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
808.00			160018		FLAP SET PROCEDURE
814.03	814.73	0.70	1P	10	MONITOR CALL-OUT
815.00	815.44	0.44	7F	25	MON ENG NO 1 EPR IND
815.44	815.88	0.44	7F	30	MON ENG NO 2 EPR IND
808.00			160025		SET FLAPS TO FLAPS 15
808.00	808.70	0.70	1P160062		CALL OUT -[FLAPS 15]
812.00			160042		MON ADF/RMI-1
812.00	814.00	2.00	5D	28	MON ADF POINTER NO.1 ON ADF/RMI 1 INDIC
812.00	814.00	2.00	5D	29	MON ADF POINTER NO.2 ON ADF/RMI 1 INDIC
815.00			160059		CROSS RWY 09 OUTER MARKER
815.00	815.72	0.72	3V	11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P160075		CALL OUT -[GEAR DOWN AND LANDING CHECK-LIST]
815.00	817.10	2.10	3N	03	START ELAPSED TIME INDIC
815.00			16BL14		CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			160049		MON RADIO ALTIMETER
820.00			160060		EXTEND LANDING GEAR
820.00			160071		FLIGHT INSTRUMENT SCAN -A2, PILOT
820.00	850.00	30.00	2K	14	MON MAP VIDEO
820.00	850.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
820.00	850.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
820.00	850.00	30.00	2J	13	MON ILS BOX INDIC
820.00	850.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
820.00	850.00	30.00	2J	01	MON ROLL ATT INDIC
820.00	850.00	30.00	2J	19	MON PITCH REF INDIC
820.00	850.00	30.00	3A	10	MONITOR AIRSPEED INDIC
845.00			160062		LANDING CHECKLIST
847.00	847.60	0.60	1P	10	MONITOR CALL-OUT
847.60	848.00	0.40	1P	14	MONITOR CALL-OUT
850.00	850.70	0.70	1P	10	MONITOR CALL-OUT
851.00	852.30	1.30	1P160079		CALL OUT -[ARMED - GREEN LIGHT]
854.50	855.20	0.70	1P	10	MONITOR CALL-OUT
855.20	856.20	1.00	1P	10	MONITOR CALL-OUT
858.20	858.60	0.40	1P	14	MONITOR CALL-OUT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
858.60	859.70	1.10	1P	12	MONITOR CALL-OUT
850.00			00EV21	PILOT EXT VIS SCAN	
850.00	855.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
855.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
855.00	885.00	30.00	2K	14	MON MAP VIDEO
855.00	885.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
855.00	885.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
855.00	885.00	30.00	2J	13	MON ILS BOX INDIC
855.00	885.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
855.00	885.00	30.00	2J	01	MON ROLL ATT INDIC
855.00	885.00	30.00	2J	19	MON PITCH REF INDIC
855.00	885.00	30.00	3A	10	MONITOR AIRSPEED INDIC
866.00			00EV02	C/P EXT VIS SCAN	
877.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
889.00			030007	ENGINE INSTRUMENT SCAN	
885.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
885.00	915.00	30.00	2K	14	MON MAP VIDEO
885.00	915.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
885.00	915.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
885.00	915.00	30.00	2J	13	MON ILS BOX INDIC
885.00	915.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
885.00	915.00	30.00	2J	01	MON ROLL ATT INDIC
885.00	915.00	30.00	2J	19	MON PITCH REF INDIC
885.00	915.00	30.00	3A	10	MONITOR AIRSPEED INDIC
895.00			180049	MON RADIO ALTIMETER	
900.00			00EV04	C/P EXT VIS SCAN	
923.00			180085	DESCEND THRU -DECISION HEIGTH	
925.58	926.38	0.80	1P	11	MONITOR CALL-OUT
915.00			00EV21	PILOT EXT VIS SCAN	
915.00	920.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
920.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
920.00	950.00	30.00	2K	14	MON MAP VIDEO
920.00	950.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
920.00	950.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
920.00	950.00	30.00	2J	13	MON ILS BOX INDIC
920.00	950.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
920.00	950.00	30.00	2J	01	MON ROLL ATT INDIC
920.00	950.00	30.00	2J	19	MON PITCH REF INDIC
920.00	950.00	30.00	3A	10	MONITOR AIRSPEED INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
925.00			160064	CROSS RWY 08 MIDDLE MARKER	
925.00	926.91	1.91	3V	13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			168L15	CROSS MIDDLE MARKER	
930.00			00EV02	C/P EXT VIS SCAN	
940.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
941.00			168L16	CROSS RW THRESHOLD	
950.00			168L17	TOUCHDOWN	
950.00			180036	TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS	
950.00	980.00	30.00	8A	11	PILOT EXTERNAL VISION SCAN
950.00	980.00	30.00	2J	15	MON TV VIDEO
950.00	980.00	30.00	2J	40	MON EADI RNWY
950.00	980.00	30.00	2J	41	MON EADI DRIFT INDIC
950.00	980.00	30.00	7F	25	MON ENG NO 1 EPR IND
950.00	980.00	30.00	7F	30	MON ENG NO 2 EPR IND
980.00			180036	TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS	
980.00	1010.00	30.00	8A	11	PILOT EXTERNAL VISION SCAN
980.00	1010.00	30.00	2J	15	MON TV VIDEO
980.00	1010.00	30.00	2J	40	MON EADI RNWY
980.00	1010.00	30.00	2J	41	MON EADI DRIFT INDIC
980.00	1010.00	30.00	7F	25	MON ENG NO 1 EPR IND
980.00	1010.00	30.00	7F	30	MON ENG NO 2 EPR IND
1010.00			180037	DISENGAGE AGCS	
1010.00	1012.13	2.13	2H	10	PRESS LAND MODE SW
1012.13	1013.18	1.05	2H	13	MON LAND MODE LT DARK - LAND MODE DISENGAGED
1013.18	1014.62	1.44	2H	01	PRESS ATT CWS MODE SW
1014.62	1015.67	1.05	2H	02	MON ATT CWS MODE LT GREEN - ATT CWS ENGAGED
1015.67	1017.01	1.34	2H	09	MON AUTO MODE LT DARK - AUTO MODE DISENGAGED
1010.00	1020.00	10.00	4A	64	MANUALLY CONTROL A/C
1020.00	1025.00	5.00	4A	64	MANUALLY CONTROL A/C
1010.00			00EV23	PILOT EXT VIS SCAN	
1010.00	1025.00	15.00	8A	10	PILOT EXTERNAL VISION SCAN
984.00			16DL71	HANDOFF TO GROUND	
984.00	985.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
985.60	987.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
989.40	997.40	8.00	1D16AA07		MONITOR UPLINK CALL-OUT FROM COPILOT
1000.00			16DL72	TUNE AND MONITOR ATL GRND ON 121.9/VHF-2L	
1009.00			16DL73	TAXI CLEARANCE FROM	

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
1008.00	1010.80	1.80	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
1010.80	1012.80	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
1014.40	1019.40	5.00	1D16AA86	MONITOR UPLINK CALL-OUT FROM COPILOT

B.4 NORMAL ILS APPROACH—ADVANCED FLIGHT DECK

Nonflying Pilot

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*                                       *
*          MISSION SCENARIO REPORT      *
*                                       *
*  MISSION - CURRENT NAS                *
*            ILS AP-BASE LN.            *
*                                       *
*  CONFIGURATION - 737 ADVCND FLT DCK   *
*                                       *
*  CREWMEMBER - COPILOT                 *
*                                       *
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TIME INTERVAL (SECS) SINCE MISSION BEGINNING	START	END	TOTAL ACTIVITY TIME	FLIGHT PHASE / EVENT/PROCEDURE / TASK	
0.00				16BL BASELINE AFD ILS APP	
0.00				16BL01	CROSS LOGEN INTERSECTION AT 250 KCAS AND 14000 FEET.ATL CENTR HAS PREVIOUSLY INSTRUCTED NASA 515 TO CONTACT ATL APPR AT LOGEN.VHF-2R HAS ALREADY BEEN TUNED TO CORRECT FREQ-126.9.
0.00				160090	CONTACT ATL APPROACH ON 126.9
0.00	1.45		1.45	1B 06	SET VHF-2 COMM TFR SW TO RIGHT
2.40	9.40		7.00	1A 25	ACTUATE COMM 2 PUSH-TO-TALK SW
2.40	9.40		7.00	1P16XX90	ATL APP,NASA 515 DESCENDING TO 11000 FT WITH INFO LIMA.
9.40	13.40		4.00	1P16YY90	NASA 515,ATL APPR, ROGER.
0.00				160080	DROP OUT OF HOR AND VERT PATH TO FPA,TKA,AND CAS AUTO FLT MODES ENTER FPA IN MCP
10.00				090048	FLIGHT INSTRUMENT SCAN -A2
40.00				090048	FLIGHT INSTRUMENT SCAN -A2
70.00				090048	FLIGHT INSTRUMENT SCAN -A2
15.00				160013	SET NAV-1 TO RUNWAY 8L ILS -109.3
15.00	21.00		6.00	8B 06	RETREIVE CHARTS
21.00	26.00		5.00	8B160003	REVIEW CHARTS TO DETERMINE RUNWAY 08 ILS FREQ AND REQ VOR FREQ
26.00	31.08		5.08	5U 01	MON NAV-1 FREQ INDIC
26.00	29.00		3.00	5U 02	SET NAV-1 FREQ - WHOLE NO.S
29.00	31.08		2.08	5U 03	SET NAV-1 FREQ - FRACTIONS
31.50	34.40		2.90	1P160059	CALL OUT -[RUNWAY 8L ILS IS ON NAV 1]
31.50	33.77		2.27	5H 02	MON VOR POINTER NO.1 ON VOR/RMI 2 INDIC
60.00				00EV30	PILOT EXT VIS SCAN
38.00				160039	SET ADF-1 TO CATTA -375KC
38.00	41.00		3.00	5D 17	SET ADF NO.1 BFO SW TO OFF
41.00	41.77		0.77	5D 22	MON ADF NO.1 TUNING METER INDIC
41.77	43.75		1.98	5D 01	MONITOR ADF NO 1 FREQ INDIC
43.75	45.73		1.98	5D 02	SELECT ADF NO 1 FREQ INDIC
45.73	47.23		1.50	1P160065	CALL OUT -[CATTA ON ADF-1]
49.00				160040	SET ADF-2 TO FLANC -344

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
49.00	51.69	2.69	5E	17	SEL ADF NO.2 FREQ BAND .19-.40
52.00	53.98	1.98	5E	01	MON ADF NO 2 FREQ. INDIC
52.00	53.98	1.98	5E	02	SELECT ADF NO 2 FREQ
52.00	54.26	2.26	5E	20	MON ADF NO.2 TUNING METER INDIC
54.00	55.50	1.50	1P160066		CALL OUT -[FLANC ON ADF-2]
58.00			160038		SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007		ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F	25	MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F	30	MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F	21	MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F	22	MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F	23	MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F	24	MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
67.52	67.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
70.00			160005		DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P	02	MONITOR CALL-OUT
72.00	77.90	5.90	8B	02	RETREIVE CHECKLIST
78.00	83.00	5.00	8B	05	FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P160044		CALL OUT-[ANTI-ICE]
87.00	87.80	0.80	1P160045		CALL OUT-[NOT REQD]
88.00	90.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P160046		CALL OUT -[AIR CONDITIONING AND PRESSURIZATION]
92.00	94.67	2.67	7D	69	MON PASS CAB TEMP CONT SETTING
94.67	96.69	2.02	7D	70	MON CONT CAB TEMP CONT SETTING
96.69	97.86	1.17	7E	08	MON LDG ALT CNTR
98.00	98.40	0.40	1P160047		CALL OUT [SET]
100.00			160006		DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
102.00	102.90	0.90	1P160048		CALL OUT-[START SWITCHES]
108.50	109.00	0.50	1P	06	MONITOR REPORT
109.00	111.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
111.00	112.10	1.10	1P160050		CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G	17	SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P160051		CALL OUT -[ON]
114.50	116.50	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P160052		CALL OUT -[ALTIMETER AND INSTRUMENTS]
118.00	120.37	2.37	3H	02	MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H	05	F.O. CHECK CAPT<S ALTIMETER BARO SET AND INDICATED ALTI-TUDE
123.40	124.70	1.30	1P160053		CALL OUT-[SET AND CROSSCHECKED]
126.00			180007		DESCENT AND APPROACH CHECKLIST - 3
126.00	128.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P160054		CALL OUT-[EPR AND IAS BUGS]
128.00	131.00	3.00	8B010004		RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	136.00	5.00	8B160001		DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	138.32	2.32	7F	26	SET ENG NO 1 EPR BUG
138.32	138.32	2.00	7F	27	MON ENG NO 1 EPR BUG
138.32	140.64	2.32	7F	28	SET ENG NO 2 EPR BUG
138.64	140.64	2.00	7F	29	MON ENG NO 2 EPR BUG
141.00	146.00	5.00	8B160002		DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A	07	MON V-REF BUG SETTING
146.00	148.57	2.57	3A	05	SET V-REF BUG
146.00	147.90	1.90	1P160055		CALL OUT -[V-REF IS XXX KNOTS]
151.00	154.00	3.00	3A	12	F.O. CHECK CAPTIS V-REF BUG SETTING
154.00	155.60	1.60	1P160056		CALL OUT -[BUGS SET AND CROSS-CHECKED]
155.60	157.60	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
155.60	156.90	1.30	1P160057		CALL OUT -[CHECKLIST COMPLETED]
157.60	160.60	3.00	8B	08	STOW CHECKLIST
160.60	162.60	2.00	8B010005		STOW FLIGHT PLANNING REF. DATA MANUAL
165.00			030007		ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F	25	MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F	30	MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F	21	MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F	22	MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F	23	MON NO 1 ENG N2 IND

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
166.32	166.76	0.44	7F	24	MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
166.76	167.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
168.52	168.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05	C/P EXT VIS SCAN	
150.00	175.00	25.00	6A	11	PILOT EXTERNAL VISION SCAN
185.00			090051	FLIGHT INSTRUMENT SCAN -A1	
195.00			160048	MON ADF/RMI-2	
195.00	197.28	2.28	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			160091	HANDOFF TO ATL FINAL APPROACH CONTROLLER	
195.00	207.00	12.00	1P16XX91		N 515.TURN RT HDG270 DESCND AND MAINTAIN 6000 FT.CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
207.00	214.00	7.00	1P16YY91		515,ROGER,HDG 270. MAINTAIN 6000,APPR ON 127.25.
200.00			180081	ENTER/ARM NEW ALT IN MCP	
200.00			16BL02	BEGIN TURN TO DOWN-WIND LEG	
205.00			180082	ENTER NEW HEADNG IN MCP	
210.00			16BL03	DESCEND THRU 11000.	
210.00			090051	FLIGHT INSTRUMENT SCAN -A1	
219.00			160092	TUNE ATL APPROACH ON 127.25	
219.00	223.88	4.88	1B	01	MON VHF-2L FREQ IND
219.00	221.90	2.90	1B	02	SET VHF-2L FREQ-WHOLE NO.S
221.88	223.86	1.98	1B	03	SET VHF-2L FREQ - FRACTIONS
226.00			160093	CONTACT ATL APPROACH ON 127.25	
226.00	227.49	1.49	1B	05	SET VHF-2 COMM TFR SW TO LEFT
228.40	231.90	3.50	1A	10	ACT PUSH-TO-TALK SW
228.40	231.90	3.50	1P16XX93		ATL APPR.NASA 515 DESCENDING TO 6000.
231.90	235.90	4.00	1P16YY90		NASA 515,ATL APPR. ROGER.
220.00			090048	FLIGHT INSTRUMENT SCAN -A2	
240.00			00EV09	C/P EXT VIS SCAN	

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
240.00	285.00	45.00	8A	12	PILOT EXTERNAL VISION SCAN
250.00			090048	FLIGHT INSTRUMENT SCAN -A2	
280.00			090048	FLIGHT INSTRUMENT SCAN -A2	
310.00			090048	FLIGHT INSTRUMENT SCAN -A2	
340.00			090048	FLIGHT INSTRUMENT SCAN -A2	
288.00			030007	ENGINE INSTRUMENT SCAN	
288.00	288.44	0.44	7F	25	MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F	30	MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F	21	MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F	22	MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F	23	MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F	24	MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09	C/P EXT VIS SCAN	
295.00	340.00	45.00	8A	12	PILOT EXTERNAL VISION SCAN
340.00			00EV04	C/P EXT VIS SCAN	
340.00	360.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
363.00			030007	ENGINE INSTRUMENT SCAN	
363.00	363.44	0.44	7F	25	MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F	24	MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
365.64	366.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04		DESCEND THRU 8600.
370.00			160094		ALTITUDE STEP DOWN FROM ATL APPROACH
370.00	375.00	5.00	1P16XX94		NASA 515,DESCEND AND MAINTAIN 5000 FT.
375.00	378.50	3.50	1A	10	ACT PUSH-TO-TALK SW
375.00	378.50	3.50	1P16YY94		515,ROGER,MAINTAIN 5000.
375.00			160081		ENTER/ARM NEW ALT IN MCP
385.00			090048		FLIGHT INSTRUMENT SCAN -A2
415.00			090048		FLIGHT INSTRUMENT SCAN -A2
445.00			090048		FLIGHT INSTRUMENT SCAN -A2
475.00			090048		FLIGHT INSTRUMENT SCAN -A2
505.00			090051		FLIGHT INSTRUMENT SCAN -A1
385.00			00EV08		C/P EXT VIS SCAN
385.00	425.00	40.00	8A	11	PILOT EXTERNAL VISION SCAN
430.00			030007		ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F	25	MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F	30	MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F	21	MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F	22	MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
440.00			00EV03		C/P EXT VIS SCAN

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
440.00		455.00	15.00	8A	10	PILOT EXTERNAL VISION SCAN
450.00				160002	TUNE ATIS -119.65	
450.00		454.98	4.98	1A	07	MON VHF-1R FREQ IND
450.00		452.01	2.01	1A	08	SET VHF-1R FREQ. WHOLE NO.8
452.98		454.98	1.98	1A	09	SET VHF-1R FREQ - FRACTIONS
455.00		457.39	2.39	1A	06	SET VHF-1 COMM TFR SW TO RIGHT
456.43		457.95	1.52	1A	17	SET COMM 2 VHF-1 COMM RECVR SW TO ON
458.00		482.00	24.00	1A	15	MON VHF-1 COMM AUDIO
458.00		461.42	3.42	1P160001		MON RADIO COMM - [INFORMATION LIMA ONE SEVEN ZERO FIVE OBSERVATION- TWO
461.42		465.98	4.56	1P160002		FIVE HUNDRED SCATTERED CEILING FOUR THOUSAND BROKEN. VISIBILITY ONE SIX.
465.98		470.54	4.56	1P160003		TEMPERATURE FIVE NINER. WIND ONE ONE ZERO DEGREES AT TEN GUSTING TO ONE SEVEN
470.54		475.10	4.56	1P160004		. ALTIMETER TWO - NINER EIGHT FOUR. SIMULTANEOUS PARALLEL APPROACHES IN
475.10		479.66	4.56	1P160005		OPERATION ON RUNWAYS EIGHT LEFT AND NINER RIGHT. ADVISE CONTROLLER ON INITIAL
479.66		481.94	2.28	1P160006		CONTACT YOU HAVE INFORMATION LIMA.]
480.00				160048	MON ADF/RMI-2	
480.00		482.26	2.26	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
480.00				18BL05	CROSS FT NDB	
485.00				00EV09	C/P EXT VIS SCAN	
485.00		510.00	45.00	8A	12	PILOT EXTERNAL VISION SCAN
490.00				160003	SET ALTIMETER BARO SETTING TO 29.84	
490.00		492.00	2.00	1P160043		CALL OUT-[DESCENT AND APPROACH CHECKLIST]
494.00				140032	ALTIMETER BARO SET PROC.	
494.00		496.65	2.65	3H	04	MONITOR ALTIMETER BARO SETTING INDIC
494.00		496.65	2.65	3H	03	SET ALTIMETER BARO SETTING CONTROL
513.00				030007	ENGINE INSTRUMENT SCAN	
513.00		513.44	0.44	7F	25	MON ENG NO 1 EPR IND
513.00		513.44	0.44	7F	30	MON ENG NO 2 EPR IND
513.44		513.88	0.44	7F	21	MON NO 1 ENG N1 IND
513.44		513.88	0.44	7F	22	MON NO 2 ENG N1 IND
513.88		514.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
513.88		514.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
514.32		514.76	0.44	7F	23	MON NO 1 ENG N2 IND
514.32		514.76	0.44	7F	24	MON NO 2 ENG N2 IND
514.76		515.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
514.76		515.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
515.20	515.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
515.64	516.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
515.64	516.08	0.44	7F	16	MON NO 2 ENG OIL TEMP INDIC
516.08	516.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
516.08	516.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
516.52	516.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
516.52	516.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
519.00			160041		MON VOR/RMI-1
520.00			160095		VECTOR FOR BASE LEG FROM ATL APPROACH
520.00	525.00	5.00	1P16XX95		NASA 515,TURN LEFT HEADING 180.
525.00	528.50	3.50	1A	10	ACT PUSH-TO-TALK SW
525.00	528.50	3.50	1P16YY95		515,ROGER,HEADING 180.
523.00			160082		ENTER NEW HEADNG IN MCP
523.00			16BL06		BEGIN TURN TO BASE
540.00			140023		REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	3H	02	MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140046		CALL OUT -[1000 FEET TO LEVEL OFF]
550.00			00EV03		C/P EXT VIS SCAN
550.00	565.00	15.00	8A	10	PILOT EXTERNAL VISION SCAN
555.00			090051		FLIGHT INSTRUMENT SCAN -A1
565.00			160041		MON VOR/RMI-1
569.00			160042		MON ADF/RMI-1
570.00			160096		VECTOR TO INTERCEPT AND FINAL APPROACH CLEARANCE FROM ATL APPROACH CONTROL
570.00	580.00	10.00	1P16XX96		NASA 515,12 MILES FROM OM,TURN LT HDG 110.MAINTAIN 5000 FT UNTIL CROSSING BAHRR
587.00	594.00	7.00	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
587.00	594.00	7.00	1P16YY96		515 ROGER,CLEARED FOR ILS 8 LEFT APPR, TOWER AT BAHRR.
580.00	587.00	7.00	1P16ZZ96		CLEARED FOR ILS RUNWAY 8 LEFT APPROACH. CONTACT TOWER ON 119.5 AT BAHRR.
575.00			160082		ENTER NEW HEADNG IN MCP
575.00			16BL07		TURN TO INTERCEPT FINAL APPR. COURSE
585.00			160083		ARM LAND MODE
597.00			160034		TUNE ATLANTA TOWER -119.5
597.00	601.86	4.86	1B	07	MON VHF-2R FREQ IND
597.00	599.88	2.88	1B	08	SET VHF-2R FREQ - WHOLE NO.S
599.88	601.86	1.98	1B	09	SET VHF-2R FREQ - FRACTIONS
600.00			160070		FLIGHT INSTRUMENT SCAN -A1, PILOT

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
607.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
607.00	617.00	10.00	2K	14	MON MAP VIDEO
607.00	617.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
607.00	617.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
607.00	617.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
607.00	617.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
607.00	617.00	10.00	2J	01	MON ROLL ATT INDIC
607.00	617.00	10.00	2J	19	MON PITCH REF INDIC
607.00	617.00	10.00	3A	10	MONITOR AIRSPEED INDIC
610.00			180084		CAPTURE AN ALT IN ALT SEL MODE
610.00			168L06		LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
617.00	627.00	10.00	2K	14	MON MAP VIDEO
617.00	627.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
617.00	627.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
617.00	627.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
617.00	627.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
617.00	627.00	10.00	2J	01	MON ROLL ATT INDIC
617.00	627.00	10.00	2J	19	MON PITCH REF INDIC
617.00	627.00	10.00	3A	10	MONITOR AIRSPEED INDIC
613.00			180085		ENTER NEW SPEED IN CAS WINDOW
623.00			180086		CAPTURE LOCALIZER
623.00	625.19	2.19	2J	13	MON ILS BOX INDIC
625.00	626.30	1.30	1P180067		CALL OUT -[LOCALIZER ALIVE]
626.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
627.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
627.00	637.00	10.00	2K	14	MON MAP VIDEO
627.00	637.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
627.00	637.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
627.00	637.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
627.00	637.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
627.00	637.00	10.00	2J	01	MON ROLL ATT INDIC
627.00	637.00	10.00	2J	19	MON PITCH REF INDIC
627.00	637.00	10.00	3A	10	MONITOR AIRSPEED INDIC
637.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
637.00	647.00	10.00	2K	14	MON MAP VIDEO
637.00	647.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
637.00	647.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
637.00	647.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
637.00	647.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
637.00	647.00	10.00	2J	01	MON ROLL ATT INDIC
637.00	647.00	10.00	2J	19	MON PITCH REF INDIC
637.00	647.00	10.00	3A	10	MONITOR AIRSPEED INDIC
643.00			160045		ANNUNCIATOR RECALL
643.00	645.28	2.28	7A	28	ACTUATE ANNUN PNL RECALL SW
645.28	645.81	0.53	7A	36	MON ALL ANNUN LTS
647.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
647.00	657.00	10.00	2K	14	MON MAP VIDEO
647.00	657.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
647.00	657.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
647.00	657.00	10.00	2J	06	MON FLT PATH ANGLE INDIC
647.00	657.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
647.00	657.00	10.00	2J	01	MON ROLL ATT INDIC
647.00	657.00	10.00	2J	19	MON PITCH REF INDIC
647.00	657.00	10.00	3A	10	MONITOR AIRSPEED INDIC
655.00			160041		MON VOR/RMI-1
657.00			160042		MON ADF/RMI-1
657.00			160048		MON ADF/RMI-2
657.00	659.26	2.26	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
660.00			168L09		REACH 210 KCAS
660.00			160087		CAPTURE GLIDE SLOPE
664.00			160061		CONTACT TOWER FOR FINAL LANDING CLEARANCE
664.00	665.45	1.45	1B	06	SET VHF-2 COMM TFR SW TO RIGHT
666.40	671.40	5.00	1B	25	ACT PUSH-TO-TALK SW ON CONTROL HANDGRIP
666.40	671.40	5.00	1B	17	COMM VIA VHF-2
670.40	674.40	4.00	1P160038		RADIO COMM-[ATLANTA TOWER, NASA 515 IS BAHRR.
674.40	681.40	7.00	1B	19	MON VHF-2 COMM AUDIO
674.40	678.40	4.00	1P160040		MON RADIO COMM - [NASA 515, NO. 3 FOR 8L.DC-9 3 MI AHEAD.WIND 110
678.40	681.40	3.00	1P160041		AT NINE.CLEARED TO LAND RW 8L.
681.40	683.10	1.70	1B	29	ACTUATE COMM 2 PUSH-TO-TALK SW
681.40	683.10	1.70	1B	15	COMM VIA VHF-2
681.40	683.10	1.70	1P160037		RADIO COMM - [515, ROGER]
684.00			168L10		CROSS BAHRR
684.00			160011		SET FLAPS TO FLAPS 1
684.00	684.70	0.70	1P	10	MONITOR CALL-OUT
685.00	687.69	2.69	4E	07	SET FLAP CONT LEVER TO FLAPS 1
687.69	689.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
689.92	691.09	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
691.09	692.26	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
692.26	692.96	0.70	1P160056		CALL OUT -[FLAPS 1]
670.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
685.00			16BL11		REACH 190 KCAS
694.00			180017		SET FLAPS TO FLAPS 5
695.00	697.89	2.89	4E	09	SET FLAP CONT LEVER TO FLAPS 5
699.00	699.70	0.70	1P160061		CALL OUT -[FLAPS 5]
694.00			180018		FLAP SET PROCEDURE
694.00	694.70	0.70	1P	10	MONITOR CALL-OUT
696.69	698.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
698.71	701.21	2.50	4E	16	CHECK FLAP LEVER AND POSITION INDIC AGREE
697.69	698.86	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
698.86	700.03	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
699.00			030007		ENGINE INSTRUMENT SCAN
699.00	699.44	0.44	7F	25	MON ENG NO 1 EPR IND
699.00	699.44	0.44	7F	30	MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F	21	MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F	22	MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F	23	MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F	24	MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
702.52	702.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
706.00			16BL12		REACH 170 KCAS
710.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
710.00	720.00	10.00	2K	14	MON MAP VIDEO
710.00	720.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
710.00	720.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
710.00	720.00	10.00	2J	05	MON FLT PATH ANGLE INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
710.00	720.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
710.00	720.00	10.00	2J	01	MON ROLL ATT INDIC
710.00	720.00	10.00	2J	19	MON PITCH REF INDIC
710.00	720.00	10.00	3A	10	MONITOR AIRSPEED INDIC
720.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
720.00	730.00	10.00	2K	14	MON MAP VIDEO
720.00	730.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
720.00	730.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
720.00	730.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
720.00	730.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
720.00	730.00	10.00	2J	01	MON ROLL ATT INDIC
720.00	730.00	10.00	2J	19	MON PITCH REF INDIC
720.00	730.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00	740.00	10.00	2K	14	MON MAP VIDEO
730.00	740.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
730.00	740.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
730.00	740.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
730.00	740.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
730.00	740.00	10.00	2J	01	MON ROLL ATT INDIC
730.00	740.00	10.00	2J	19	MON PITCH REF INDIC
730.00	740.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00			00EV21		PILOT EXT VIS SCAN
740.00			180069		SET SPEED BRAKES
744.00			180048		MON ADF/RMI-2
744.00	746.26	2.26	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
745.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
745.00			16BL13		CROSS REIFF
748.00			180070		SET AUTO BRAKES
748.00	750.82	2.82	4D	43	SET AUTO BRAKE SEL SW TO MED
750.82	750.88	0.26	4D	40	MON AUTO BRAKE INOP LT OFF
755.00			00EV01		C/P EXT VIS SCAN
755.00	760.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
765.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
765.00	775.00	10.00	2K	14	MON MAP VIDEO
765.00	775.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
765.00	775.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
765.00	775.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
765.00	775.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
765.00	775.00	10.00	2J	01	MON ROLL ATT INDIC

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OF POOR QUALITY

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
765.00	775.00	10.00	2J	19	MON PITCH REF INDIC
765.00	775.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00	785.00	10.00	2K	14	MON MAP VIDEO
775.00	785.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
775.00	785.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
775.00	785.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
775.00	785.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
775.00	785.00	10.00	2J	01	MON ROLL ATT INDIC
775.00	785.00	10.00	2J	19	MON PITCH REF INDIC
775.00	785.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
800.00			160058		REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A	01	VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P180074		CALL OUT -[RUNWAY IN SITE]
805.00			00EV21		PILOT EXT VIS SCAN
808.00			180018		FLAP SET PROCEDURE
808.00	808.70	0.70	1P	10	MONITOR CALL-OUT
810.69	812.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E	18	CHECK FLAP LEVER AND POSITION INDIC AGREE
811.69	812.86	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
812.86	814.03	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
809.00			180025		SET FLAPS TO FLAPS 15
809.00	811.46	2.46	4E	11	SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P180062		CALL OUT -[FLAPS 15]
812.00			180042		MON ADF/RMI-1
815.00			180059		CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V	11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P	13	MONITOR CALL-OUT
815.00			16BL14		CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			180049		MON RADIO ALTIMETER
815.00	817.00	2.00	3J	01	MON RADIO ALT ALTITUDE INDIC
820.00			180060		EXTEND LANDING GEAR
820.00	823.27	3.27	4D	03	SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D	05	MONITOR NOSE GEAR DOWN AND LOCKED LT ON
823.50	824.04	0.54	4D	09	MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
845.00			160062		LANDING CHECKLIST

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
845.00	846.00	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076		CALL OUT -[RECALL]
847.60	848.00	0.40	1P160077		CALL OUT -[CHECKED]
848.00	849.00	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160076		CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P	02	MONITOR CALL-OUT
852.50	853.50	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080		CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081		CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082		CALL OUT -[FLAPS]
858.60	859.70	1.10	1P160083		CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084		CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P	12	MONITOR CALL-OUT
850.00			00EV21		PILOT EXT VIS SCAN
855.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00			00EV02		C/P EXT VIS SCAN
865.00	875.00	10.00	8A	10	PILOT EXTERNAL VISION SCAN
877.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
877.00	887.00	10.00	2K	14	MON MAP VIDEO
877.00	887.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
877.00	887.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
877.00	887.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
877.00	887.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
877.00	887.00	10.00	2J	01	MON ROLL ATT INDIC
877.00	887.00	10.00	2J	19	MON PITCH REF INDIC
877.00	887.00	10.00	3A	10	MONITOR AIRSPEED INDIC
889.00			030007		ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F	25	MON ENG NO 1 EPR IND
889.00	889.44	0.44	7F	30	MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F	21	MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F	22	MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F	23	MON NO 1 ENG N2 IND
890.32	890.76	0.44	7F	24	MON NO 2 ENG N2 IND
890.76	891.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
890.76	891.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
891.84	892.08	0.44	7F 10	MON NO 1 ENG OIL TEMP INDIC
891.84	892.08	0.44	7F 18	MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F 11	MON NO 1 ENG OIL QTY INDIC
892.08	892.52	0.44	7F 19	MON NO 2 ENG OIL QTY INDIC
892.52	892.96	0.44	7F 12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
892.52	892.96	0.44	7F 20	MON NO 2 ENG VIBR AMPLITUDE INDIC
885.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
895.00			180049	MON RADIO ALTIMETER
895.00	897.00	2.00	3J 01	MON RADIO ALT ALTITUDE INDIC
900.00			00EV04	C/P EXT VIS SCAN
900.00	920.00	20.00	8A 10	PILOT EXTERNAL VISION SCAN
923.00			180065	DESCEND THRU -DECISION HEIGTH
923.00	925.58	2.58	3R 12	MON DECISION HGT LT ON FDI
925.58	926.38	0.80	1P180066	CALL OUT -[DECISION HEIGHT]
915.00			00EV21	PILOT EXT VIS SCAN
920.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
925.00			180064	CROSS RWY 09 MIDDLE MARKER
925.00	926.91	1.91	3V 13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15	CROSS MIDDLE MARKER
930.00			00EV02	C/P EXT VIS SCAN
930.00	940.00	10.00	8A 10	PILOT EXTERNAL VISION SCAN
940.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
940.00	950.00	10.00	2K 14	MON MAP VIDEO
940.00	950.00	10.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
940.00	950.00	10.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
940.00	950.00	10.00	2J 05	MON FLT PATH ANGLE INDIC
940.00	950.00	10.00	2J 04	MON FLT PATH ACCEL INDIC
940.00	950.00	10.00	2J 01	MON ROLL ATT INDIC
940.00	950.00	10.00	2J 19	MON PITCH REF INDIC
940.00	950.00	10.00	3A 10	MONITOR AIRSPEED INDIC
941.00			16BL16	CROSS RW THRESHOLD
950.00			16BL17	TOUCHDOWN
950.00			180036	TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
950.00	980.00	30.00	2J 15	MON TV VIDEO
950.00	980.00	30.00	2J 40	MON EADI RNWY
950.00	980.00	30.00	2J 41	MON EADI DRIFT INDIC
950.00	980.00	30.00	7F 25	MON ENG NO 1 EPR IND
950.00	980.00	30.00	7F 30	MON ENG NO 2 EPR IND

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
980.00				180036		TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
980.00	1010.00		30.00	2J	15	MON TV VIDEO
980.00	1010.00		30.00	2J	40	MON EADI RNWY
980.00	1010.00		30.00	2J	41	MON EADI DRIFT INDIC
980.00	1010.00		30.00	7F	25	MON ENG NO 1 EPR IND
980.00	1010.00		30.00	7F	30	MON ENG NO 2 EPR IND
1010.00				180037		DISENGAGE AGCS
1010.00				00EV23		PILOT EXT VIS SCAN
984.00				180071		HANDOFF TO GROUND CONTROL -121.9
984.00	990.00		6.00	1B	18	MON VHF-2 COMM AUDIO
984.00	987.50		3.50	1P180087		MON RADIO COMM -[NASA 515,EXIT RUNWAY NEXT INTERSECTION. CONTACT GROUND
987.50	990.00		2.50	1P180088		POINT NINER WHEN CLEAR OF RUNWAY, OVER]
990.00	992.50		2.50	1B	14	ACT PUSH-TO-TALK SW ON HANDGRIP
990.00	992.50		2.50	1B	15	COMM VIA VHF-2
990.00	992.50		2.50	1P180089		RADIO COMM -[515, ROGER. POINT NINER WHEN CLEAR]
993.00	998.08		5.08	1B	01	MON VHF-2L FREQ IND
993.00	995.90		2.90	1B	02	SET VHF-2L FREQ-WHOLE NO.S
995.88	997.86		1.98	1B	03	SET VHF-2L FREQ - FRACTIONS
998.00	999.45		1.45	1B	05	SET VHF-2 COMM TFR SW TO LEFT
999.50	1003.00		3.50	1B	29	ACTUATE COMM 2 PUSH-TO-TALK SW
999.50	1003.00		3.50	1B	16	COMM VIA VHF-2
999.50	1003.00		3.50	1P180090		RADIO COMM -[ATLANTA GROUND, THIS IS NASA 515, TAXI TO GATE X, OVER]
1004.00	1007.50		3.50	1B	18	MON VHF-2 COMM AUDIO
1004.00	1007.50		3.50	1P180091		MON RADIO COMM -[NASA 515, ATLANTA GROUND, TAXI TO RAMP VIA NORTHEAST=SOUTH-
1007.50	1008.50		1.00	1P180092		WEST TAXIWAY, OVER]
1009.00	1010.70		1.70	1B	29	ACTUATE COMM 2 PUSH-TO-TALK SW
1009.00	1010.70		1.70	1B	15	COMM VIA VHF-2
1009.00	1010.70		1.70	1P180037		RADIO COMM -[515, ROGER]

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################
# UNSHIFTED    #
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#########################################
#                                       #
#          MISSION SCENARIO REPORT      #
#                                       #
#  MISSION - MD-8 DATA LINK             #
#            ILS AP-BASE LN.            #
#                                       #
#  CONFIGURATION - 737 ADVCMD FLT DCK   #
#                                       #
#  CREWMEMBER - COPILOT                 #
#                                       #
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NOV10 1986

TIME INTERVAL (SECS) SINCE MISSION START BEGINNING	END	TOTAL ACTIVITY TIME	FLIGHT PHASE EVENT/PROCEDURE TASK
0.00			18DL DATA LINK AFD ILS AP
0.00			18DL01 CROSS LOGEN INTERSEC TION AT 250 KCAS AND 14000 FEET.ATL CENTR HAS PREVIOUSLY INSTR UCTED NASA 515 TO MONITOR ATL APPROACH ON 126.9 AT LOGEN. VHF-2R HAS BEEN SET.
0.00			18DL90 MONITOR ATL APPROACH ON 126.9/VHF-2R
0.00	1.45	1.45	1B 06 SET VHF-2 COMM TFR SW TO RIGHT
1.50	3.50	2.00	1B 04 ADJ VHF-2 VOLUME
0.00			180080 DROP OUT OF HOR AND VERT PATH TO FPA,TKA,AND CAS AUTO FLT MODES ENTER FPA IN MCP
10.00			090048 FLIGHT INSTRUMENT SCAN -A2
40.00			090048 FLIGHT INSTRUMENT SCAN -A2
70.00			090048 FLIGHT INSTRUMENT SCAN -A2
15.00			180013 SET NAV-1 TO RUNWAY 8L ILS -109.3
15.00	21.00	6.00	8B 06 RETREIVE CHARTS
21.00	26.00	5.00	8B180003 REVIEW CHARTS TO DETERMINE RUNWAY 08 ILS FREQ AND REQ VOR FREQ
26.00	31.08	5.08	5U 01 MON NAV-1 FREQ INDIC
26.00	29.00	3.00	5U 02 SET NAV-1 FREQ - WHOLE NO.S
29.00	31.08	2.08	5U 03 SET NAV-1 FREQ - FRACTIONS
31.50	34.40	2.90	1P180059 CALL OUT -[RUNWAY 8L ILS IS ON NAV 1]
31.50	33.77	2.27	5H 02 MON VOR POINTER NO.1 ON VOR/RMI 2 INDIC
60.00			00EV30 PILOT EXT VIS SCAN
38.00			180039 SET ADF-1 TO CATTA -375KC
38.00	41.00	3.00	5D 17 SET ADF NO.1 BFO SW TO OFF
41.00	41.77	0.77	5D 22 MON ADF NO.1 TUNING METER INDIC
41.77	43.75	1.98	5D 01 MONITOR ADF NO 1 FREQ INDIC
43.75	45.73	1.98	5D 02 SELECT ADF NO 1 FREQ INDIC
45.73	47.23	1.50	1P180065 CALL OUT -[CATTA ON ADF-1]
49.00			180040 SET ADF-2 TO FLANC -344
49.00	51.69	2.69	5E 17 SEL ADF NO.2 FREQ BAND .19-.40
52.00	53.98	1.98	5E 01 MON ADF NO 2 FREQ. INDIC
52.00	53.98	1.98	5E 02 SELECT ADF NO 2 FREQ

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
52.00	54.26	2.26	5E	20	MON ADF NO.2 TUNING METER INDIC
54.00	55.50	1.50	1P160066		CALL OUT -[FLANC ON ADF-2]
58.00			160036		SET DECISION HEIGTH ON RADIO ALTIMETER
64.00			030007		ENGINE INSTRUMENT SCAN
64.00	64.44	0.44	7F	25	MON ENG NO 1 EPR IND
64.00	64.44	0.44	7F	30	MON ENG NO 2 EPR IND
64.44	64.88	0.44	7F	21	MON NO 1 ENG N1 IND
64.44	64.88	0.44	7F	22	MON NO 2 ENG N1 IND
64.88	65.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
64.88	65.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
65.32	65.76	0.44	7F	23	MON NO 1 ENG N2 IND
65.32	65.76	0.44	7F	24	MON NO 2 ENG N2 IND
65.76	66.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
65.76	66.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
66.20	66.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
66.64	67.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
66.64	67.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
67.08	67.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
67.08	67.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
67.52	67.96	0.44	7F	12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
67.52	67.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
70.00			160005		DESCENT AND APPROACH CHECKLIST - 1
70.00	72.00	2.00	1P	02	MONITOR CALL-OUT
72.00	77.90	5.90	8B	02	RETREIVE CHECKLIST
78.00	83.00	5.00	8B	05	FIND CHECKLIST IN HANDBOOK
83.00	85.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
85.00	86.00	1.00	1P160044		CALL OUT-[ANTI-ICE]
87.00	87.80	0.80	1P160045		CALL OUT-[NOT REQD]
88.00	90.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
90.00	91.80	1.80	1P160046		CALL OUT -[AIR CON-DITIONING AND PRES-SURIZATION]
92.00	94.67	2.67	7D	69	MON PASS CAB TEMP CONT SETTING
94.67	96.69	2.02	7D	70	MON CONT CAB TEMP CONT SETTING
96.69	97.86	1.17	7E	08	MON LDG ALT CNTR
98.00	98.40	0.40	1P160047		CALL OUT [SET]
100.00			160006		DESCENT AND APPROACH CHECKLIST - 2
100.00	102.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
102.00	102.90	0.90	1P160048		CALL OUT-[START SWITCHES]
108.50	109.00	0.50	1P	06	MONITOR REPORT

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
109.00	111.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
111.00	112.10	1.10	1P160050		CALL OUT-[INBOARD LANDING LIGHTS]
112.00	114.20	2.20	7G	17	SET LANDING LIGHTS SW TO ON
114.20	114.50	0.30	1P160051		CALL OUT -[ON]
114.50	116.50	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
116.50	117.90	1.40	1P160052		CALL OUT -[ALTIMETER AND INSTRUMENTS]
118.00	120.37	2.37	3H	02	MON CORR BARO ALT INDIC
120.37	123.37	3.00	3H	05	F.O. CHECK CAPT<S ALTIMETER BARO SET AND INDICATED ALTI-TUDE
123.40	124.70	1.30	1P160053		CALL OUT-[SET AND CROSSCHECKED]
126.00			160007		DESCENT AND APPROACH CHECKLIST - 3
126.00	128.00	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
128.00	129.50	1.50	1P160054		CALL OUT-[EPR AND IAS BUGS]
128.00	131.00	3.00	8B010004		RETREIVE FLIGHT PLANNING REF. DATA MANUAL
131.00	136.00	5.00	8B160001		DETERMINE GO-AROUND EPR BUG SET VALUE
136.00	138.32	2.32	7F	26	SET ENG NO 1 EPR BUG
136.32	138.32	2.00	7F	27	MON ENG NO 1 EPR BUG
138.32	140.64	2.32	7F	28	SET ENG NO 2 EPR BUG
138.64	140.64	2.00	7F	29	MON ENG NO 2 EPR BUG
141.00	146.00	5.00	8B160002		DETERMINE LANDING V-REF BUG SET VALUE
146.00	148.57	2.57	3A	07	MON V-REF BUG SETTING
146.00	148.57	2.57	3A	05	SET V-REF BUG
146.00	147.90	1.90	1P160055		CALL OUT -[V-REF IS XXX KNOTS]
151.00	154.00	3.00	3A	12	F.O. CHECK CAPTIS V-REF BUG SETTING
154.00	155.60	1.60	1P160056		CALL OUT -[BUGS SET AND CROSS-CHECKED]
155.60	157.60	2.00	8B	03	READ NEXT ITEM ON CHECKLIST
155.60	156.90	1.30	1P160057		CALL OUT -[CHECKLIST COMPLETED]
157.60	160.60	3.00	8B	08	STOW CHECKLIST
160.60	162.60	2.00	8B010005		STOW FLIGHT PLANNING REF. DATA MANUAL
165.00			030007		ENGINE INSTRUMENT SCAN
165.00	165.44	0.44	7F	25	MON ENG NO 1 EPR IND
165.00	165.44	0.44	7F	30	MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F	21	MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F	22	MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F	23	MON NO 1 ENG N2 IND
166.32	166.76	0.44	7F	24	MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
166.76	167.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
168.52	168.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05 C/P EXT VIS SCAN
150.00	175.00	25.00	8A 11 PILOT EXTERNAL VISION SCAN
196.00			090051 FLIGHT INSTRUMENT SCAN -A1
195.00			180048 MON ADF/RMI-2
195.00	197.26	2.26	5E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			16DL91 HANDOFF TO ATL FINAL APPROACH CONTROLLER VECTOR TO DOWNWIND
195.00	196.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
198.60	200.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
200.40	210.40	10.00	1D16XX91 READ -TURN RT HDG 270,DESCND AND MAINTAIN 8000 FT,MONITOR ATL APPR ON 127.25
210.40	212.20	1.80	1X160041 LINE SELECT [WILCO]
200.00			18DL81 ARM NEW DL MCP ALT
200.00			18BL02 BEGIN TURN TO DOWNWIND LEG
205.00			18DL82 ENGAGE DATA LINKED HEADING IN MCP
210.00			18BL03 DESCEND THRU 11000.
210.00			090051 FLIGHT INSTRUMENT SCAN -A1
219.00			160092 TUNE ATL APPROACH ON 127.25
219.00	223.98	4.98	1B 01 MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02 SET VHF-2L FREQ-WHOLE NO.S
221.98	223.96	1.98	1B 03 SET VHF-2L FREQ - FRACTIONS
228.00			16DL93 MONITOR ATL APPROACH ON 127.25/VHF-2L
228.00	227.49	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
227.50	229.50	2.00	1B 04 ADJ VHF-2 VOLUME
220.00			090048 FLIGHT INSTRUMENT SCAN -A2
240.00			00EV09 C/P EXT VIS SCAN
240.00	285.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
250.00			090048 FLIGHT INSTRUMENT SCAN -A2
280.00			090048 FLIGHT INSTRUMENT SCAN -A2

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
310.00			090048	FLIGHT INSTRUMENT SCAN -A2	
340.00			090048	FLIGHT INSTRUMENT SCAN -A2	
288.00			030007	ENGINE INSTRUMENT SCAN	
288.00	288.44	0.44	7F	25	MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F	30	MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F	21	MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F	22	MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F	23	MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F	24	MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F	12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
291.52	291.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09	C/P EXT VIS SCAN	
295.00	340.00	45.00	8A	12	PILOT EXTERNAL VISION SCAN
340.00			00EV04	C/P EXT VIS SCAN	
340.00	360.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
363.00			030007	ENGINE INSTRUMENT SCAN	
363.00	363.44	0.44	7F	25	MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F	24	MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC

SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
366.08	366.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F	12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
366.52	366.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04		DESCEND THRU 8000.
370.00			18DL94		ALTITUDE STEP DOWN
370.00	371.80	1.80	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
371.80	373.80	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
373.80	375.40	1.80	1X180001		LINE SELECT [ATC UPLINKS PENDING]
375.40	379.40	4.00	1D16XX94		READ -DESCEND AND MAINTAIN 5000 FT
379.40	381.20	1.80	1X180041		LINE SELECT [WILCO]
375.00			18DL81		ARM NEW DL MCP ALT
385.00			090048		FLIGHT INSTRUMENT SCAN -A2
415.00			090048		FLIGHT INSTRUMENT SCAN -A2
445.00			090048		FLIGHT INSTRUMENT SCAN -A2
475.00			090048		FLIGHT INSTRUMENT SCAN -A2
505.00			090051		FLIGHT INSTRUMENT SCAN -A1
385.00			00EV08		C/P EXT VIS SCAN
385.00	425.00	40.00	8A	11	PILOT EXTERNAL VISION SCAN
430.00			030007		ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F	25	MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F	30	MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F	21	MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F	22	MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRA-TION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC

ORIGINAL PAGE IS
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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
450.00			16DL02	RECEIVE ATL ETIS TERMINAL INFORMATION
450.00	451.80	1.80	1X160004	LINE SELECT [ETIS REQUESTS]
451.80	453.80	2.00	1D16XX33	READ [ETIS REQUEST FOR KATL]
453.80	455.60	1.80	1X160046	LINE SELECT [FULL ETIS REPORT]
455.60	460.20	1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
460.20	462.20	2.00	1D16XX06	MON VISUAL ALERT DSP [MODE-S UPLINK PNDG] INDENTED BLUE
462.20	464.00	1.80	1X160001	LINE SELECT [ATC UPLINKS PENDING]
464.00	474.00	10.00	1D16XX31	READ-ETIS REPORT FOR ATL AT XXXXZ. SKY 25 SCT/40 BKN. VSB 16. WIND 110/10/G17.
474.00	479.00	5.00	1D16XX32	TEMP 59. ALT 2984. APR RW08L AND RW09R SIMULT PARALLEL ILS
479.00	480.80	1.80	1X160047	LINE SELECT [PRINT MESSAGE]
480.00			16BL05	CROSS FT NDB
480.00			160003	SET ALTIMETER BARO SETTING TO 29.84
480.00	482.00	2.00	1P160043	CALL OUT-[DESCENT AND APPROACH CHECK-LIST]
484.00			140032	ALTIMETER BARO SET PROC.
484.00	486.65	2.65	3H 04	MONITOR ALTIMETER BARO SETTING INDIC
484.00	486.65	2.65	3H 03	SET ALTIMETER BARO SETTING CONTROL
513.00			030007	ENGINE INSTRUMENT SCAN
513.00	513.44	0.44	7F 25	MON ENG NO 1 EPR IND
513.00	513.44	0.44	7F 30	MON ENG NO 2 EPR IND
513.44	513.88	0.44	7F 21	MON NO 1 ENG N1 IND
513.44	513.88	0.44	7F 22	MON NO 2 ENG N1 IND
513.88	514.32	0.44	7F 31	MON ENG NO 1 EXH GAS TEMP IND
513.88	514.32	0.44	7F 32	MON ENG NO 2 EXH GAS TEMP IND
514.32	514.76	0.44	7F 23	MON NO 1 ENG N2 IND
514.32	514.76	0.44	7F 24	MON NO 2 ENG N2 IND
514.76	515.20	0.44	7F 33	MON ENG NO 1 FUEL FLOW INDIC
514.76	515.20	0.44	7F 34	MON ENG NO 2 FUEL FLOW INDIC
515.20	515.64	0.44	7F 09	MON NO 1 ENG OIL PRESS INDIC
515.64	516.08	0.44	7F 10	MON NO 1 ENG OIL TEMP INDIC
515.64	516.08	0.44	7F 18	MON NO 2 ENG OIL TEMP INDIC
516.08	516.52	0.44	7F 11	MON NO 1 ENG OIL QTY INDIC
516.08	516.52	0.44	7F 19	MON NO 2 ENG OIL QTY INDIC
516.52	516.96	0.44	7F 12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
516.52	516.96	0.44	7F 20	MON NO 2 ENG VIBR AMPLITUDE INDIC
519.00			160041	MON VOR/RMI-1
520.00			16DL95	VECTOR FOR BASE LEG

SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
520.00	521.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
521.80	523.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
523.80	525.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
525.40	528.40	3.00	1D16XX95 READ -TURN LEFT HEADING 180
528.40	530.20	1.80	1X160041 LINE SELECT [WILCO]
523.00			16DL82 ENGAGE DATA LINKED HEADING IN MCP
523.00			16BL06 BEGIN TURN TO BASE
540.00			140023 REPORT 1000 FT TO LEVEL OFF
540.00	542.13	2.13	3H 02 MON CORR BARO ALT INDIC
542.00	543.70	1.70	1P140045 CALL OUT -[1000 FEET TO LEVEL OFF]
550.00			00EV03 C/P EXT VIS SCAN
550.00	565.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
555.00			090051 FLIGHT INSTRUMENT SCAN -A1
565.00			160041 MON VOR/RMI-1
569.00			160042 MON ADF/RMI-1
570.00			16DL96 VECTOR TO FINAL APPR
570.00	571.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
571.60	573.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
573.60	575.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
575.40	584.40	9.00	1D16XX96 READ -12 NM FROM OM TURN LT HDG 110.MAIN TAIN 6000 UNTIL XING BAHRR.
584.40	591.40	7.00	1D16ZZ97 CLEARED FOR ILS BL APPR.MONITOR TOWER ON 119.5 AT BAHRR
591.40	593.20	1.80	1X160041 LINE SELECT [WILCO]
575.00			16DL82 ENGAGE DATA LINKED HEADING IN MCP
575.00			16BL07 TURN TO INTERCEPT FINAL APPR. COURSE
585.00			160083 ARM LAND MODE
597.00			160034 TUNE ATLANTA TOWER -119.5
597.00	601.86	4.86	1B 07 MON VHF-2R FREQ IND
597.00	599.88	2.88	1B 08 SET VHF-2R FREQ - WHOLE NO.S
599.88	601.86	1.98	1B 09 SET VHF-2R FREQ - FRACTIONS
600.00			160070 FLIGHT INSTRUMENT SCAN -A1, PILOT
607.00			160073 FLIGHT INSTRUMENT SCAN -A1, COPILOT
607.00	617.00	10.00	2K 14 MON MAP VIDEO
607.00	617.00	10.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
607.00	617.00	10.00	2K 33 MON CURVED TREND VECTOR SYMBOLS

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
607.00	617.00	10.00	2J 05	MON FLT PATH ANGLE INDIC
607.00	617.00	10.00	2J 04	MON FLT PATH ACCEL INDIC
607.00	617.00	10.00	2J 01	MON ROLL ATT INDIC
607.00	617.00	10.00	2J 19	MON PITCH REF INDIC
607.00	617.00	10.00	3A 10	MONITOR AIRSPEED INDIC
610.00			180084	CAPTURE AN ALT IN ALT SEL MODE
610.00			16BL08	LEVEL OFF AT 5000 FT BEGIN DECEL FROM 250 TO 210 KCAS
617.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
617.00	627.00	10.00	2K 14	MON MAP VIDEO
617.00	627.00	10.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
617.00	627.00	10.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
617.00	627.00	10.00	2J 05	MON FLT PATH ANGLE INDIC
617.00	627.00	10.00	2J 04	MON FLT PATH ACCEL INDIC
617.00	627.00	10.00	2J 01	MON ROLL ATT INDIC
617.00	627.00	10.00	2J 19	MON PITCH REF INDIC
617.00	627.00	10.00	3A 10	MONITOR AIRSPEED INDIC
613.00			180085	ENTER NEW SPEED IN CAS WINDOW
623.00			180086	CAPTURE LOCALIZER
623.00	625.19	2.19	2J 13	MON ILS BOX INDIC
625.00	626.30	1.30	1P180067	CALL OUT -[LOCALIZER ALIVE]
626.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
627.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
627.00	637.00	10.00	2K 14	MON MAP VIDEO
627.00	637.00	10.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
627.00	637.00	10.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
627.00	637.00	10.00	2J 05	MON FLT PATH ANGLE INDIC
627.00	637.00	10.00	2J 04	MON FLT PATH ACCEL INDIC
627.00	637.00	10.00	2J 01	MON ROLL ATT INDIC
627.00	637.00	10.00	2J 19	MON PITCH REF INDIC
627.00	637.00	10.00	3A 10	MONITOR AIRSPEED INDIC
637.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
637.00	647.00	10.00	2K 14	MON MAP VIDEO
637.00	647.00	10.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
637.00	647.00	10.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
637.00	647.00	10.00	2J 05	MON FLT PATH ANGLE INDIC
637.00	647.00	10.00	2J 04	MON FLT PATH ACCEL INDIC
637.00	647.00	10.00	2J 01	MON ROLL ATT INDIC
637.00	647.00	10.00	2J 19	MON PITCH REF INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
637.00	647.00	10.00	3A	10	MONITOR AIRSPEED INDIC
643.00			180045	ANNUNCIATOR RECALL	
643.00	645.28	2.28	7A	28	ACTUATE ANNUN PNL RECALL SW
645.28	645.81	0.53	7A	36	MON ALL ANNUN LTS
647.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
647.00	657.00	10.00	2K	14	MON MAP VIDEO
647.00	657.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
647.00	657.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
647.00	657.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
647.00	657.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
647.00	657.00	10.00	2J	01	MON ROLL ATT INDIC
647.00	657.00	10.00	2J	19	MON PITCH REF INDIC
647.00	657.00	10.00	3A	10	MONITOR AIRSPEED INDIC
655.00			180041	MON VOR/RMI-1	
657.00			180042	MON ADF/RMI-1	
657.00			180046	MON ADF/RMI-2	
657.00	659.26	2.26	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
660.00			16BL09	REACH 210 KCAS	
660.00			180087	CAPTURE GLIDE SLOPE	
664.00			16DL60	MONITOR ATL TOWER ON 119.5/VHF-2R	
664.00	665.45	1.45	1B	06	SET VHF-2 COMM TFR SW TO RIGHT
665.50	667.50	2.00	1B	04	ADJ VHF-2 VOLUME
670.00			16DL61	LANDING CLEARANCE	
670.00	671.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
671.60	673.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
673.60	675.40	1.80	1X180001		LINE SELECT [ATC UPLINKS PENDING]
675.40	685.40	10.00	1D16XX40		READ -NO.3 FOR SL. DC-9 3 NM AHEAD.WIND 110 AT 9. CLEARED TO LAND RW 9L.
685.40	687.20	1.80	1X180041		LINE SELECT [WILCO]
684.00			16BL10	CROSS BAHRR	
684.00			180011	SET FLAPS TO FLAPS 1	
684.00	684.70	0.70	1P	10	MONITOR CALL-OUT
685.00	687.89	2.89	4E	07	SET FLAP CONT LEVER TO FLAPS 1
687.69	689.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
689.92	691.09	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
691.09	692.26	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
692.26	692.96	0.70	1P180058		CALL OUT -[FLAPS 1]
670.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
685.00			16BL11	REACH 190 KCAS	

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
694.00			180017	SET FLAPS TO FLAPS 5	
695.00	697.69	2.69	4E	09	SET FLAP CONT LEVER TO FLAPS 5
699.00	699.70	0.70	1P160061		CALL OUT -[FLAPS 5]
694.00			180018	FLAP SET PROCEDURE	
694.00	694.70	0.70	1P	10	MONITOR CALL-OUT
696.69	698.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
698.71	701.21	2.50	4E	16	CHECK FLAP LEVER AND POSITION INDIC AGREE
697.69	698.86	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
698.86	700.03	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
699.00			030007	ENGINE INSTRUMENT SCAN	
699.00	699.44	0.44	7F	25	MON ENG NO 1 EPR IND
699.00	699.44	0.44	7F	30	MON ENG NO 2 EPR IND
699.44	699.88	0.44	7F	21	MON NO 1 ENG N1 IND
699.44	699.88	0.44	7F	22	MON NO 2 ENG N1 IND
699.88	700.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
699.88	700.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
700.32	700.76	0.44	7F	23	MON NO 1 ENG N2 IND
700.32	700.76	0.44	7F	24	MON NO 2 ENG N2 IND
700.76	701.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
700.76	701.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
701.20	701.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
701.64	702.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
701.64	702.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
702.08	702.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
702.08	702.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
702.52	702.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
702.52	702.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
700.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
708.00			18BL12	REACH 170 KCAS	
710.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
710.00	720.00	10.00	2K	14	MON MAP VIDEO
710.00	720.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
710.00	720.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
710.00	720.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
710.00	720.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
710.00	720.00	10.00	2J	01	MON ROLL ATT INDIC
710.00	720.00	10.00	2J	19	MON PITCH REF INDIC
710.00	720.00	10.00	3A	10	MONITOR AIRSPEED INDIC
720.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
720.00	730.00	10.00	2K	14	MON MAP VIDEO
720.00	730.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
720.00	730.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
720.00	730.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
720.00	730.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
720.00	730.00	10.00	2J	01	MON ROLL ATT INDIC
720.00	730.00	10.00	2J	19	MON PITCH REF INDIC
720.00	730.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
730.00	740.00	10.00	2K	14	MON MAP VIDEO
730.00	740.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
730.00	740.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
730.00	740.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
730.00	740.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
730.00	740.00	10.00	2J	01	MON ROLL ATT INDIC
730.00	740.00	10.00	2J	19	MON PITCH REF INDIC
730.00	740.00	10.00	3A	10	MONITOR AIRSPEED INDIC
730.00			00EV21		PILOT EXT VIS SCAN
740.00			180069		SET SPEED BRAKES
744.00			180048		MON ADF/RMI-2
744.00	746.26	2.26	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
745.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
745.00			18BL13		CROSS REIFF
748.00			180070		SET AUTO BRAKES
748.00	750.82	2.82	4D	43	SET AUTO BRAKE SEL SW TO MED
750.82	750.88	0.26	4D	40	MON AUTO BRAKE INOP LT OFF
755.00			00EV01		C/P EXT VIS SCAN
755.00	760.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
765.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
765.00	775.00	10.00	2K	14	MON MAP VIDEO
765.00	775.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
765.00	775.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
765.00	775.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
765.00	775.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
765.00	775.00	10.00	2J	01	MON ROLL ATT INDIC
765.00	775.00	10.00	2J	19	MON PITCH REF INDIC
765.00	775.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
775.00	785.00	10.00	2K	14	MON MAP VIDEO
775.00	785.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
775.00	785.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
775.00	785.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
775.00	785.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
775.00	785.00	10.00	2J	01	MON ROLL ATT INDIC
775.00	785.00	10.00	2J	19	MON PITCH REF INDIC
775.00	785.00	10.00	3A	10	MONITOR AIRSPEED INDIC
775.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
800.00			180058		REPORT RUNWAY IN SIGHT
800.00	802.00	2.00	8A	01	VIEW RUNWAY AHEAD
802.00	803.00	1.00	1P180074		CALL OUT -[RUNWAY IN SITE]
805.00			00EV21		PILOT EXT VIS SCAN
808.00			180018		FLAP SET PROCEDURE
808.00	808.70	0.70	1P	10	MONITOR CALL-OUT
810.69	812.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
812.71	815.21	2.50	4E	16	CHECK FLAP LEVER AND POSITION INDIC AGREE
811.69	812.86	1.17	4N	03	MON LE FLAPS-IN-TRANSIT LT ON
812.86	814.03	1.17	4N	04	MON LE FLAPS-IN-TRANSIT LT OFF
808.00			180025		SET FLAPS TO FLAPS 15
809.00	811.46	2.46	4E	11	SET FLAP CONT LEVER TO FLAPS 15
813.00	813.70	0.70	1P180062		CALL OUT -[FLAPS 15]
812.00			180042		MON ADF/RMI-1
815.00			180059		CROSS RWY 08 OUTER MARKER
815.00	815.72	0.72	3V	11	MONITOR OUTER MARKER LT ON AND AUDIBLE SIGNAL
817.00	818.80	1.80	1P	13	MONITOR CALL-OUT
815.00			18BL14		CROSS CATTA LOM-GEAR THEN EXTENDED AND 155 KCAS MAINTAINED
815.00			180049		MON RADIO ALTIMETER
815.00	817.00	2.00	3J	01	MON RADIO ALT ALTITUDE INDIC
820.00			180060		EXTEND LANDING GEAR
820.00	823.27	3.27	4D	03	SET LANDING GEAR LEVER TO DOWN POSITION
823.00	823.54	0.54	4D	05	MONITOR NOSE GEAR DOWN AND LOCKED LT ON
823.50	824.04	0.54	4D	09	MONITOR LEFT/RT GEAR DOWN AND LOCKED LT ON
820.00			180071		FLIGHT INSTRUMENT SCAN -A2, PILOT
845.00			180062		LANDING CHECKLIST
845.00	846.00	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P180076		CALL OUT -[RECALL]
847.60	848.00	0.40	1P180077		CALL OUT -[CHECKED]
848.00	849.00	1.00	8B090001		READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
850.00	850.70	0.70	1P160078	CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02	MONITOR CALL-OUT
852.50	853.50	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080	CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081	CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082	CALL OUT -[FLAPS]
858.60	859.70	1.10	1P160083	CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084	CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12	MONITOR CALL-OUT
850.00			00EV21	PILOT EXT VIS SCAN
855.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00			00EV02	C/P EXT VIS SCAN
865.00	875.00	10.00	8A 10	PILOT EXTERNAL VISION SCAN
877.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
877.00	887.00	10.00	2K 14	MON MAP VIDEO
877.00	887.00	10.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
877.00	887.00	10.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
877.00	887.00	10.00	2J 05	MON FLT PATH ANGLE INDIC
877.00	887.00	10.00	2J 04	MON FLT PATH ACCEL INDIC
877.00	887.00	10.00	2J 01	MON ROLL ATT INDIC
877.00	887.00	10.00	2J 19	MON PITCH REF INDIC
877.00	887.00	10.00	3A 10	MONITOR AIRSPEED INDIC
889.00			030007	ENGINE INSTRUMENT SCAN
889.00	889.44	0.44	7F 25	MON ENG NO 1 EPR IND
889.00	889.44	0.44	7F 30	MON ENG NO 2 EPR IND
889.44	889.88	0.44	7F 21	MON NO 1 ENG N1 IND
889.44	889.88	0.44	7F 22	MON NO 2 ENG N1 IND
889.88	890.32	0.44	7F 31	MON ENG NO 1 EXH GAS TEMP IND
889.88	890.32	0.44	7F 32	MON ENG NO 2 EXH GAS TEMP IND
890.32	890.76	0.44	7F 23	MON NO 1 ENG N2 IND
890.32	890.76	0.44	7F 24	MON NO 2 ENG N2 IND
890.76	891.20	0.44	7F 33	MON ENG NO 1 FUEL FLOW INDIC
890.76	891.20	0.44	7F 34	MON ENG NO 2 FUEL FLOW INDIC
891.20	891.64	0.44	7F 09	MON NO 1 ENG OIL PRESS INDIC
891.64	892.08	0.44	7F 10	MON NO 1 ENG OIL TEMP INDIC
891.64	892.08	0.44	7F 18	MON NO 2 ENG OIL TEMP INDIC
892.08	892.52	0.44	7F 11	MON NO 1 ENG OIL QTY INDIC
892.08	892.52	0.44	7F 19	MON NO 2 ENG OIL QTY INDIC

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OF POOR QUALITY

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
892.52	892.96	0.44	7F 12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
892.52	892.96	0.44	7F 20	MON NO 2 ENG VIBR AMPLITUDE INDIC
895.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
895.00			180049	MON RADIO ALTIMETER
895.00	897.00	2.00	3J 01	MON RADIO ALT ALTITUDE INDIC
900.00			00EV04	C/P EXT VIS SCAN
900.00	920.00	20.00	8A 10	PILOT EXTERNAL VISION SCAN
923.00			180065	DESCEND THRU -DECISION HEIGTH
923.00	925.58	2.58	3R 12	MON DECISION HGT LT ON FDI
925.58	926.38	0.80	1P180086	CALL OUT -[DECISION HEIGHT]
915.00			00EV21	PILOT EXT VIS SCAN
920.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
925.00			180064	CROSS RWY OB MIDDLE MARKER
925.00	926.91	1.91	3V 13	MONITOR MIDDLE MARKER ANNUN LT ON AND AUDIBLE SIGNAL
926.00			16BL15	CROSS MIDDLE MARKER
930.00			00EV02	C/P EXT VIS SCAN
930.00	940.00	10.00	8A 10	PILOT EXTERNAL VISION SCAN
940.00			180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT
940.00	950.00	10.00	2K 14	MON MAP VIDEO
940.00	950.00	10.00	2K 46	MON STRAIGHT TREND VECTOR SYMBOL
940.00	950.00	10.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
940.00	950.00	10.00	2J 05	MON FLT PATH ANGLE INDIC
940.00	950.00	10.00	2J 04	MON FLT PATH ACCEL INDIC
940.00	950.00	10.00	2J 01	MON ROLL ATT INDIC
940.00	950.00	10.00	2J 19	MON PITCH REF INDIC
940.00	950.00	10.00	3A 10	MONITOR AIRSPEED INDIC
941.00			16BL16	CROSS RW THRESHOLD
950.00			16BL17	TOUCHDOWN
950.00			180038	TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
950.00	960.00	30.00	2J 15	MON TV VIDEO
950.00	960.00	30.00	2J 40	MON EADI RNWY
950.00	960.00	30.00	2J 41	MON EADI DRIFT INDIC
950.00	960.00	30.00	7F 25	MON ENG NO 1 EPR IND
950.00	960.00	30.00	7F 30	MON ENG NO 2 EPR IND
960.00			180036	TOUCHDOWN AND ROLL-OUT, AGCS AUTO LAND MODE CONTROLS A/C UNTILL 30KTS
960.00	1010.00	30.00	2J 15	MON TV VIDEO
960.00	1010.00	30.00	2J 40	MON EADI RNWY
960.00	1010.00	30.00	2J 41	MON EADI DRIFT INDIC
960.00	1010.00	30.00	7F 25	MON ENG NO 1 EPR IND
960.00	1010.00	30.00	7F 30	MON ENG NO 2 EPR IND

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
1010.00				180037	DISENGAGE AGCS	
1010.00				00EV23	PILOT EXT VIS SCAN	
984.00				16DL71	HANDOFF TO GROUND	
984.00		985.60	1.60		1D16XX01	MON INFORMATION MANAGEMENT ATENSON
985.60		987.60	2.00		1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
987.60		989.40	1.80		1X160001	LINE SELECT [ATC UPLINKS PENDING]
989.40		997.40	8.00		1D16XX87	READ -EXIT RUNWAY NEXT INTERSECTION. MONITOR GROUND 121.9 WHEN CLEAR OF RUNWAY
997.40		999.20	1.80		1X160041	LINE SELECT [WILCO]
1000.00				16DL72	TUNE AND MONITOR ATL GRND ON 121.9/VHF-2L	
1000.00		1004.88	4.88		1B 01	MON VHF-2L-FREQ IND
1000.00		1002.90	2.90		1B 02	SET VHF-2L FREQ-WHOLE NO.S
1002.90		1004.88	1.98		1B 03	SET VHF-2L FREQ - FRACTIONS
1004.90		1006.39	1.49		1B 05	SET VHF-2 COMM TFR SW TO LEFT
1006.40		1008.40	2.00		1B 04	ADJ VHF-2 VOLUME
1009.00				16DL73	TAXI CLEARANCE FROM	
1009.00		1010.60	1.60		1D16XX01	MON INFORMATION MANAGEMENT ATENSON
1010.60		1012.60	2.00		1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
1012.60		1014.40	1.80		1X160001	LINE SELECT [ATC UPLINKS PENDING]
1014.40		1019.40	5.00		1D16XX88	READ -TAXI TO RAMP VIA NE/SW TAXIWAY.
1019.40		1021.20	1.80		1X160041	LINE SELECT [WILCO]

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B.5 ILS APPROACH WITH WEATHER DEVIATION—CONVENTIONAL FLIGHT DECK

Flying Pilot

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
130.00				090019	FLIGHT INSTRU T SCAN - D	
130.00	190.00		60.00	3R	58	MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00		60.00	3L	02	MON VERTICAL SPEED INDIC
130.00	190.00		60.00	3A	10	MONITOR AIRSPEED INDIC
130.00	190.00		60.00	3S	15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
165.00				030007	ENGINE INSTRUMENT SCAN	
150.00				00EY05	C/P EXT VIS SCAN	
195.00				160048	MON ADF/RMI-2	
195.00				16XB91	VECTOR FOR DOWNWIND OPTIONAL WX AVOIDNC	
195.00	207.00		12.00	1P16XX91	N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.	
220.00	232.00		12.00	1P16AA91	NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25	
240.00				140007	HEADING CHANGE PROC.	
240.00	250.00		10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00	250.00		10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
240.00	250.00		10.00	3L	02	MON VERTICAL SPEED INDIC
240.00	244.92		4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
245.00	255.00		10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
240.00				16XL02	BEGIN TURN TO AVOID HEAVY WEATHER	
210.00				16BL03	DESCEND THRU 11000.	
200.00				16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAMRR AT 5000 FT.	
200.00	202.73		2.73	4B	07	MAKE MINOR THRUST ADJUSTMENT
200.00	205.00		5.00	4A	64	MANUALLY CONTROL A/C
240.00				160092	TUNE ATL APPROACH ON 127.25	
240.00				160093	CONTACT ATL APPROACH ON 127.25	
251.90	255.90		4.00	1P16YY90	NASA 515,ATL APPR, ROGER.	

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
210.00				090017	FLIGHT INSTRUMENT SCAN - C	
210.00	240.00		30.00	3R	56	MON PITCH ATTITUDE INDIC ON FDI
210.00	240.00		30.00	3L	02	MON VERTICAL SPEED INDIC
210.00	240.00		30.00	3A	10	MONITOR AIRSPEED INDIC
210.00	240.00		30.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
255.00				00EV03	C/P EXT VIS SCAN	
270.00				00EV03	C/P EXT VIS SCAN	
250.00				090039	FLIGHT INSTRUMENT SCAN - F	
250.00	370.00		120.00	3R	57	MON PITCH ATTITUDE INDIC ON FDI
250.00	370.00		120.00	3L	03	MON VERTICAL SPEED INDIC
250.00	370.00		120.00	3A	11	MONITOR AIRSPEED INDIC
250.00	370.00		120.00	3S	15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
285.00				030007	ENGINE INSTRUMENT SCAN	
295.00				00EV09	C/P EXT VIS SCAN	
330.00				16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING SAHRR AT 5000 FT.	
330.00	332.73		2.73	4B	07	MAKE MINOR THRUST ADJUSTMENT
330.00	335.00		5.00	4A	84	MANUALLY CONTROL A/C
340.00				00EV04	C/P EXT VIS SCAN	
363.00				030007	ENGINE INSTRUMENT SCAN	
370.00				16BL04	DESCEND THRU 8600.	
370.00				16XB94	ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDNCE	
374.00	381.00		7.00	1P16BB94	NASA 515, TURN LEFT HEADING 240,DESCEND AND MAINTAIN 5000 FT	
370.00				090017	FLIGHT INSTRUMENT SCAN - C	
370.00	400.00		30.00	3R	56	MON PITCH ATTITUDE INDIC ON FDI
370.00	400.00		30.00	3L	02	MON VERTICAL SPEED INDIC
370.00	400.00		30.00	3A	10	MONITOR AIRSPEED INDIC
370.00	400.00		30.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
390.00				00EV06	C/P EXT VIS SCAN	
400.00				140007	HEADING CHANGE PROC.	
400.00	410.00		10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
400.00	410.00		10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
400.00	410.00		10.00	3L	02	MON VERTICAL SPEED INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
400.00	404.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
405.00	415.00	10.00	3R	5S	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
415.00			00EV21	PILOT EXT VIS SCAN	
415.00	420.00	5.00	8A	10	PILOT EXTERNAL

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
128.00			180007	DESCENT AND APPROACH CHECKLIST - 3
128.00	129.50	1.50	1P 02	MONITOR CALL-OUT
146.00	147.90	1.90	1P 14	MONITOR CALL-OUT
148.00	150.57	2.57	3A 07	MON V-REF BUG SETTING
148.00	150.57	2.57	3A 05	SET V-REF BUG
151.00	154.00	3.00	3A 13	CAPT CHECK F.O.'S V-REF BUG SETTING
154.00	155.60	1.60	1P 08	MONITOR REPORT
157.60	158.90	1.30	1P 02	MONITOR CALL-OUT
130.00			090018	FLIGHT INSTRUMENT SCAN - D
130.00	190.00	60.00	3R 56	MON PITCH ATTITUDE INDIC ON FDI
130.00	190.00	60.00	3L 02	MON VERTICAL SPEED INDIC
130.00	190.00	60.00	3A 10	MONITOR AIRSPEED INDIC
130.00	190.00	60.00	3S 15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
165.00			030007	ENGINE INSTRUMENT SCAN
172.00			00EV03	C/P EXT VIS SCAN
195.00			160048	MON ADF/RMI-2
195.00			16XL91	VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE
195.00	196.60	1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
200.40	210.40	10.00	1D16AA91	MONITOR UPLINK CALL-OUT FROM COPILOT
226.00	227.60	1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
227.60	229.60	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
231.40	241.40	10.00	1D16AL91	MONITOR COPILOT
240.00			140007	HEADING CHANGE PROC.
240.00	250.00	10.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00	250.00	10.00	4A 28	ACT FLT CONTROL TO CHANGE HDG
240.00	250.00	10.00	3L 02	MON VERTICAL SPEED INDIC
240.00	244.92	4.92	3S 11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
245.00	255.00	10.00	3R 58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
240.00			16XL02	BEGIN TURN TO AVOID HEAVY WEATHER
210.00			16BL03	DESCEND THRU 11000.
200.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
200.00	202.73	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
200.00	205.00	5.00	4A 64	MANUALLY CONTROL A/C

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
240.00				160092	TUNE ATL APPROACH ON 127.25
248.00				16DL93	MONITOR ATL APPROACH ON 127.25/VHF-2L
210.00				090017	FLIGHT INSTRUMENT SCAN - C
210.00	240.00		30.00	3R 56	MON PITCH ATTITUDE INDIC ON FDI
210.00	240.00		30.00	3L 02	MON VERTICAL SPEED INDIC
210.00	240.00		30.00	3A 10	MONITOR AIRSPEED INDIC
210.00	240.00		30.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
255.00				00EV03	C/P EXT VIS SCAN
270.00				00EV03	C/P EXT VIS SCAN
250.00				090039	FLIGHT INSTRUMENT SCAN - F
250.00	370.00		120.00	3R 57	MON PITCH ATTITUDE INDIC ON FDI
250.00	370.00		120.00	3L 03	MON VERTICAL SPEED INDIC
250.00	370.00		120.00	3A 11	MONITOR AIRSPEED INDIC
250.00	370.00		120.00	3S 15	MONITOR A/C HEADING RELATIVE TO SELECTED HEADING ON CI
288.00				030007	ENGINE INSTRUMENT SCAN
295.00				00EV09	C/P EXT VIS SCAN
330.00				16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
330.00	332.73		2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
330.00	335.00		5.00	4A 84	MANUALLY CONTROL A/C
340.00				00EV04	C/P EXT VIS SCAN
363.00				030007	ENGINE INSTRUMENT SCAN
370.00				16BL04	DESCEND THRU 8600.
370.00				16XL94	ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
379.00	380.80		1.80	1D16XX01	MON INFORMATION MANAGEMENT ATEMSON
380.80	382.80		2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PHDG] AMBER
384.40	390.40		6.00	1D16AL94	MON COPILOT - TURN LEFT HEADING 240. DESCEND AND MAINTAIN 5000 MSL.
370.00				090017	FLIGHT INSTRUMENT SCAN - C
370.00	400.00		30.00	3R 56	MON PITCH ATTITUDE INDIC ON FDI
370.00	400.00		30.00	3L 02	MON VERTICAL SPEED INDIC
370.00	400.00		30.00	3A 10	MONITOR AIRSPEED INDIC
370.00	400.00		30.00	3S 01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
390.00				00EV08	C/P EXT VIS SCAN
400.00				140007	HEADING CHANGE PROC.

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
400.00	410.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
400.00	410.00	10.00	4A	28	ACT FLT CONTROL TO CHANGE HDG
400.00	410.00	10.00	3L	02	MON VERTICAL SPEED INDIC
400.00	404.92	4.92	3S	11	SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
405.00	415.00	10.00	3R	58	MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
415.00			00EV21	PILOT EXT VIS SCAN	
415.00	420.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
425.00			090017	FLIGHT INSTRUMENT SCAN - C	
425.00	455.00	30.00	3R	56	MON PITCH ATTITUDE INDIC ON FDI
425.00	455.00	30.00	3L	02	MON VERTICAL SPEED INDIC
425.00	455.00	30.00	3A	10	MONITOR AIRSPEED INDIC
425.00	455.00	30.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
460.00			090017	FLIGHT INSTRUMENT SCAN - C	
460.00	490.00	30.00	3R	56	MON PITCH ATTITUDE INDIC ON FDI
460.00	490.00	30.00	3L	02	MON VERTICAL SPEED INDIC
460.00	490.00	30.00	3A	10	MONITOR AIRSPEED INDIC
460.00	490.00	30.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
430.00			030007	ENGINE INSTRUMENT	

B.6 ILS APPROACH WITH WEATHER DEVIATION—CONVENTIONAL FLIGHT DECK

Nonflying Pilot

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
95.00	165.44	0.44	7F 25 MON ENG EPR IND
95.00	165.44	0.44	7F 30 MON ENG NO 2 EPR IND
165.44	165.88	0.44	7F 21 MON NO 1 ENG N1 IND
165.44	165.88	0.44	7F 22 MON NO 2 ENG N1 IND
165.88	166.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76	0.44	7F 23 MON NO 1 ENG N2 IND
166.32	166.76	0.44	7F 24 MON NO 2 ENG N2 IND
166.76	167.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
166.76	167.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
167.64	168.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
167.64	168.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
168.08	168.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
168.08	168.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
168.52	168.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
168.52	168.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
150.00			00EV05 C/P EXT VIS SCAN
150.00	175.00	25.00	9A 11 PILOT EXTERNAL VISION SCAN
195.00			160048 MON ADF/RMI-2
195.00	197.26	2.26	5E 26 MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			16XB91 VECTOR FOR DOWNWIND OPTIONAL WX AVOIDNC
195.00	207.00	12.00	1P16XX91 N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
214.00	217.00	3.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
207.00	217.00	10.00	1P16XY91 APPROACH,515 HAS STRONG WX RADAR ECHOES.REQUEST HDG 300.WILL ADVISE CLR.
220.00	232.00	12.00	1P16AA91 NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25
232.00	239.00	7.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
232.00	239.00	7.00	1P16BB91 515,ROGER,HDG 300, MAINTAIN 6000, APPR ON 127.25
240.00			140007 HEADING CHANGE PROC.
240.00			16XL02 BEGIN TURN TO AVOID HEAVY WEATHER
210.00			16BL03 DESCEND THRU 11000.
200.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 800 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHAR AT 6000 FT.
240.00			160092 TUNE ATL APPROACH ON 127.25
240.00	244.88	4.88	1B 01 MON VHF-2L FREQ IND
240.00	242.80	2.80	1B 02 SET VHF-2L FREQ-WHOLE NO.6

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
242.88	244.88	1.88	1B 03 SET VHF-2L FREQ - FRACTIONS
246.00			180093 CONTACT ATL APPROACH ON 127.25
246.00	247.49	1.49	1B 05 SET VHF-2 COMM TFR SW TO LEFT
248.40	251.90	3.50	1A 10 ACT PUSH-TO-TALK SW
248.40	251.90	3.50	1P18XX93 ATL APPR,NASA 515 DESCENDING TO 6000.
251.90	255.90	4.00	1P18YY90 NASA 515,ATL APPR, ROGER.
210.00			090017 FLIGHT INSTRUMENT SCAN - C
255.00			00EV03 C/P EXT VIS SCAN
255.00	270.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
270.00			00EV03 C/P EXT VIS SCAN
270.00	285.00	15.00	8A 10 PILOT EXTERNAL VISION SCAN
250.00			090039 FLIGHT INSTRUMENT SCAN - F
288.00			030007 ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 25 MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30 MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21 MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22 MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F 23 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
330.00			18AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
340.00			00EV04 C/P EXT VIS SCAN
340.00	360.00	20.00	8A 10 PILOT EXTERNAL VISION SCAN

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
363.00				030007	ENGINE INSTRUMENT SCAN	
363.00	363.44		0.44	7F	25	MON ENG NO 1 EPR IND
363.00	363.44		0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88		0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88		0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32		0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32		0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76		0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76		0.44	7F	24	MON NO 2 ENG N2 IND
364.76	365.20		0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20		0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64		0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
365.64	366.08		0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
365.64	366.08		0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
366.08	366.52		0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
366.08	366.52		0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
366.52	366.96		0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96		0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00				19BL04	DESCEND THRU 8000.	
370.00				16XB94	ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDNCE	
370.00	373.00		3.00	1P16AA94	APPROACH, 515 IS CLEAR OF WEATHER	
370.00	373.00		3.00	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
374.00	381.00		7.00	1P16BB94	NASA 515, TURN LEFT HEADING 240,DESCEND AND MAINTAIN 5000 FT	
381.00	384.00		3.00	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
384.00	385.70		1.70	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
381.00	386.00		5.00	1P16CC94	515, ROGER. TURN LT HDG 240,MAINTN 5000.	
370.00				090017	FLIGHT INSTRUMENT SCAN - C	
390.00				00EV08	C/P EXT VIS SCAN	
390.00	430.00		40.00	6A	11	PILOT EXTERNAL VISION SCAN
400.00				140007	HEADING CHANGE PROC.	
415.00				00EV21	PILOT EXT VIS SCAN	
425.00				090017	FLIGHT INSTRUMENT SCAN - C	
460.00				090017	FLIGHT INSTRUMENT SCAN - C	
430.00				030007	ENGINE INSTRUMENT SCAN	
430.00	430.44		0.44	7F	25	MON ENG NO 1 EPR IND
430.00	430.44		0.44	7F	30	MON ENG NO 2 EPR IND
430.44	430.88		0.44	7F	21	MON NO 1 ENG N1 IND
430.44	430.88		0.44	7F	22	MON NO 2 ENG N1 IND

SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
430.88	431.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
440.00			00EV03	C/P EXT VIS SCAN	
440.00	455.00	15.00	8A	10	PILOT EXTERNAL VISION SCAN

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
65.00				030007	ENGINE INSTRUM SCAN	
165.00	165.44		0.44	7F	26	MON ENG NO 1 EPR IND
165.00	165.44		0.44	7F	30	MON ENG NO 2 EPR IND
165.44	165.88		0.44	7F	21	MON NO 1 ENG N1 IND
165.44	165.88		0.44	7F	22	MON NO 2 ENG N1 IND
165.88	166.32		0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
165.88	166.32		0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
166.32	166.76		0.44	7F	23	MON NO 1 ENG N2 IND
166.32	166.76		0.44	7F	24	MON NO 2 ENG N2 IND
166.76	167.20		0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
166.76	167.20		0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
167.20	167.64		0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
167.64	168.08		0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
167.64	168.08		0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
168.08	168.52		0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
168.08	168.52		0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
168.52	168.96		0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
168.52	168.96		0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
172.00						
172.00	187.00		15.00	00EV03	C/P EXT VIS SCAN	
				6A	10	PILOT EXTERNAL VISION SCAN
195.00						
195.00	197.26		2.26	160048	MON ADF/RMI-2	
				5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00				16XL91	VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE	
195.00	196.60		1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
196.60	198.60		2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
198.60	200.40		1.80	1X160001		LINE SELECT [ATC UPLINKS PENDING]

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
200.40	210.40	10.00	1D16XX91	READ -TURN RT HDG 270,DESCND AND MAIN-TAIN 6000 FT,MONITOR ATL APPR ON 127.25
210.40	212.20	1.80	1X160030	LINE SELECT [UNABLE]
212.20	214.00	1.80	1X160024	LINE SELECT [STRONG WX RADAR ECHOES]
214.00	215.80	1.80	1X160014	LINE SELECT [HEADING REQUEST]
215.80	217.00	1.20	1X160033	PRESS KEY [3]
217.00	218.20	1.20	1X160040	PRESS KEY [0]
218.20	219.40	1.20	1X160040	PRESS KEY [0]
219.40	221.20	1.80	1X160029	LINE SELECT [REQ TEM HDG XXX-WILL ADVISE]
226.00	227.80	1.80	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
227.80	229.80	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
229.80	231.40	1.80	1X160001	LINE SELECT [ATC UPLINKS PENDING]
231.40	241.40	10.00	1D16XL91	READ -TURN RT HDG 300, DESCEND AND MAINTAIN 6000 MSL MONITOR APPR 127.25
241.40	243.20	1.80	1X160030	LINE SELECT [UNABLE]
240.00			140007	HEADING CHANGE PROC.
240.00			16XL02	BEGIN TURN TO AVOID HEAVY WEATHER
210.00			16BL03	DESCEND THRU 11000.
200.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 6000 FT.
240.00			160092	TUNE ATL APPROACH ON 127.25
240.00	244.88	4.88	1B 01	MON VHF-2L FREQ IND
240.00	242.90	2.90	1B 02	SET VHF-2L FREQ-WHOLE NO.S
242.88	244.88	1.98	1B 03	SET VHF-2L FREQ - FRACTIONS
246.00			16DL93	MONITOR ATL APPROACH ON 127.25/VHF-2L
246.00	247.49	1.49	1B 05	SET VHF-2 COMM TFR SW TO LEFT
247.50	249.50	2.00	1B 04	ADJ VHF-2 VOLUME
210.00			090017	FLIGHT INSTRUMENT SCAN - C
255.00			00EV03	C/P EXT VIS SCAN
255.00	270.00	15.00	8A 10	PILOT EXTERNAL VISION SCAN
270.00			00EV03	C/P EXT VIS SCAN
270.00	285.00	15.00	8A 10	PILOT EXTERNAL VISION SCAN
250.00			090039	FLIGHT INSTRUMENT SCAN - F
288.00			030007	ENGINE INSTRUMENT SCAN
288.00	288.44	0.44	7F 25	MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F 30	MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F 21	MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F 22	MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F 31	MON ENG NO 1 EXH GAS TEMP IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK
288.88	289.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F 23 MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F 24 MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09 C/P EXT VIS SCAN
295.00	340.00	45.00	8A 12 PILOT EXTERNAL VISION SCAN
330.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
340.00			00EV04 C/P EXT VIS SCAN
370.00			16XL94 ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
370.00	371.80	1.80	1X160002 LINE SELECT [REQUEST FOR CLEARANCE]
371.80	373.60	1.80	1X160020 LINE SELECT [RESUME ON-COURSE]
379.00	380.80	1.80	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
380.80	382.80	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
382.80	384.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]
384.40	390.40	6.00	1D16XL94 READ - TURN LEFT HEADING 240. DESCEND & MAINTAIN 5000 MSL.
390.40	392.20	1.80	1X160030 LINE SELECT [UNABLE]
370.00			090017 FLIGHT INSTRUMENT SCAN - C
390.00			00EV08 C/P EXT VIS SCAN
390.00	430.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
400.00			140007 HEADING CHANGE PROC.
415.00			00EV21 PILOT EXT VIS SCAN
425.00			090017 FLIGHT INSTRUMENT SCAN - C
460.00			090017 FLIGHT INSTRUMENT SCAN - C
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND

SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
430.00	430.44	0.44	7F	30	MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F	21	MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F	22	MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR

B.7 ILS APPROACH WITH WEATHER DEVIATION—ADVANCED FLIGHT DECK

Flying Pilot

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
185.00			090051	FLIGHT INSTRUME SCAN -A1	
185.00	195.00	10.00	2J	02	MON PITCH ..ITUDE INDIC
185.00	195.00	10.00	3L	02	MON VERTICAL SPEED INDIC
185.00	195.00	10.00	3A	10	MONITOR AIRSPEED INDIC
185.00	195.00	10.00	2K	14	MON MAP VIDEO
185.00	195.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
195.00			160046	MON ADF/RMI-2	
195.00			16XB91	VECTOR FOR DOWNWIND OPTIONAL WX AVOIDNC	
195.00	207.00	12.00	1P16XX91	N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.	
220.00	232.00	12.00	1P16AA91	NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25	
240.00			180081	ENTER/ARM NEW ALT IN MCP	
240.00	242.47	2.47	2H	33	ROTATE ALT ENG KNOB
240.00	240.78	0.78	2H	31	MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
241.40	242.46	1.06	2H	34	READ ALT ENG VALUE ON DIGITAL INDIC
242.50	243.92	1.42	2H	25	PRESS ALT ENG MODE S SW
243.90	244.68	0.78	2H	30	MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
240.00			16XL02	BEGIN TURN TO AVOID HEAVY WEATHER	
235.00			180082	ENTER NEW HEADNG IN MCP	
235.00	237.50	2.50	2H	19	ROTATE TKA SEL KNOB
235.00	236.11	1.11	2H	20	READ TKA SEL VALUE ON DIGITAL INDIC
237.50	238.27	0.77	2H	15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00			16BL03	DESCEND THRU 11000.	
210.00			090051	FLIGHT INSTRUMENT SCAN -A1	
210.00	220.00	10.00	2J	02	MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L	02	MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A	10	MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K	14	MON MAP VIDEO

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
210.00	220.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
240.00			160092		TUNE ATL APPROACH ON 127.25
246.00			160093		CONTACT ATL APPROACH ON 127.25
251.90	255.90	4.00	1P16YY90		NASA 515,ATL APPR, ROGER.
255.00			00EV03		C/P EXT VIS SCAN
270.00			00EV03		C/P EXT VIS SCAN
250.00			090048		FLIGHT INSTRUMENT SCAN -A2
250.00	280.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L	02	MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A	10	MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K	14	MON MAP VIDEO
250.00	280.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
280.00			090048		FLIGHT INSTRUMENT SCAN -A2
280.00	310.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L	02	MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A	10	MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K	14	MON MAP VIDEO
280.00	310.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
310.00			090048		FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L	02	MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A	10	MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K	14	MON MAP VIDEO
310.00	340.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
340.00			090048		FLIGHT INSTRUMENT SCAN -A2
340.00	370.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L	02	MON VERTICAL SPEED INDIC
340.00	370.00	30.00	3A	10	MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K	14	MON MAP VIDEO
340.00	370.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
288.00			030007		ENGINE INSTRUMENT SCAN
295.00			00EV09		C/P EXT VIS SCAN
340.00			00EV04		C/P EXT VIS SCAN

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
363.00			030007	ENGINE INSTRUMENT SCAN
370.00			16BL04	DESCEND THRU 8600.
370.00			16XB94	ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDNCE
374.00	381.00	7.00	1P16BB94	NASA 515, TURN LEFT HEADING 240,DESCEND AND MAINTAIN 8000 FT
380.00			180081	ENTER/ARM NEW ALT IN MCP
380.00	382.47	2.47	2H 33	ROTATE ALT ENG KNOB
380.00	380.78	0.78	2H 31	MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
381.40	382.46	1.06	2H 34	READ ALT ENG VALUE ON DIGITAL INDIC
382.50	383.92	1.42	2H 28	PRESS ALT ENG MODE S SW
383.90	384.68	0.78	2H 30	MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
385.00			180082	ENTER NEW HEADNG IN MCP
385.00	387.50	2.50	2H 19	ROTATE TKA SEL KNOB
385.00	386.11	1.11	2H 20	READ TKA SEL VALUE ON DIGITAL INDIC
387.50	388.27	0.77	2H 15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
390.00			090048	FLIGHT INSTRUMENT SCAN -A2
390.00	420.00	30.00	2J 02	MON PITCH ATTITUDE INDIC
390.00	420.00	30.00	3L 02	MON VERTICAL SPEED INDIC
390.00	420.00	30.00	3A 10	MONITOR AIRSPEED INDIC
390.00	420.00	30.00	2K 14	MON MAP VIDEO
390.00	420.00	30.00	2K 48	MON STRAIGHT TREND VECTOR SYMBOL
390.00	420.00	30.00	2K 33	MON CURVED TREND VECTOR SYMBOLS
420.00			090048	FLIGHT INSTRUMENT SCAN -A2
420.00	450.00	30.00	2J 02	MON PITCH ATTITUDE INDIC
420.00	450.00	30.00	3L 02	MON VERTICAL SPEED INDIC
420.00	450.00	30.00	3A 10	MONITOR AIRSPEED INDIC
420.00	450.00	30.00	2K 14	MON MAP VIDEO
420.00	450.00	30.00	2K 48	MON STRAIGHT TREND VECTOR SYMBOL
420.00	450.00	30.00	2K 33	MON CURVED TREND VECTOR SYMBOLS

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
185.00				090051	FLIGHT INSTRUMENT SCAN -A1	
185.00	195.00		10.00	2J	02	MON PITCH TITUDE INDIC
185.00	195.00		10.00	3L	02	MON VERTICAL SPEED INDIC
185.00	195.00		10.00	3A	10	MONITOR AIRSPEED INDIC
185.00	195.00		10.00	2K	14	MON MAP VIDEO
185.00	195.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
185.00	195.00		10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
195.00				180048	MON ADF/RMI-2	
195.00				16XL01	VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE	
195.00	196.60		1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON	
196.60	198.60		2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER	
200.40	210.40		10.00	1D16AA01	MONITOR UPLINK CALL-OUT FROM COPILOT	
226.00	227.60		1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON	
227.60	229.60		2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER	
231.40	241.40		10.00	1D16AL01	MONITOR COPILOT	
245.00				16DL01	ARM NEW DL MCP ALT	
245.00	245.78		0.78	2H	31	MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
245.80	246.86		1.06	2H	34	READ ALT ENG VALUE ON DIGITAL INDIC
246.86	248.28		1.42	2H	28	PRESS ALT ENG MODE S SW
248.28	249.06		0.78	2H	30	MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
240.00				16XL02	BEGIN TURN TO AVOID HEAVY WEATHER	
240.00				16DL02	ENGAGE DATA LINKED HEADING IN MCP	
240.00	240.77		0.77	2H	17	MON TKA SEL MODE LT BLUE - TKA SEL MODE PRESELECTED
240.80	241.91		1.11	2H	20	READ TKA SEL VALUE ON DIGITAL INDIC
241.90	243.31		1.41	2H	14	PRESS TKA SEL MODE SW
243.30	244.07		0.77	2H	16	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00				16BL03	DESCEND THRU 11000.	
210.00				090051	FLIGHT INSTRUMENT SCAN -A1	

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
210.00	220.00	10.00	2J	02	MON PITCH ATTITUDE INDIC
210.00	220.00	10.00	3L	02	MON VERTICAL SPEED INDIC
210.00	220.00	10.00	3A	10	MONITOR AIRSPEED INDIC
210.00	220.00	10.00	2K	14	MON MAP VIDEO
210.00	220.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
240.00			160092		TUNE ATL APPROACH ON 127.25
246.00			16DL93		MONITOR ATL APPROACH ON 127.25/VHF-2L
220.00			090048		FLIGHT INSTRUMENT SCAN -A2
220.00	250.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
220.00	250.00	30.00	3L	02	MON VERTICAL SPEED INDIC
220.00	250.00	30.00	3A	10	MONITOR AIRSPEED INDIC
220.00	250.00	30.00	2K	14	MON MAP VIDEO
220.00	250.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
220.00	250.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
255.00			00EV03		C/P EXT VIS SCAN
270.00			00EV03		C/P EXT VIS SCAN
250.00			090048		FLIGHT INSTRUMENT SCAN -A2
250.00	280.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
250.00	280.00	30.00	3L	02	MON VERTICAL SPEED INDIC
250.00	280.00	30.00	3A	10	MONITOR AIRSPEED INDIC
250.00	280.00	30.00	2K	14	MON MAP VIDEO
250.00	280.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
250.00	280.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
280.00			090048		FLIGHT INSTRUMENT SCAN -A2
280.00	310.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
280.00	310.00	30.00	3L	02	MON VERTICAL SPEED INDIC
280.00	310.00	30.00	3A	10	MONITOR AIRSPEED INDIC
280.00	310.00	30.00	2K	14	MON MAP VIDEO
280.00	310.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
280.00	310.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
310.00			090048		FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L	02	MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A	10	MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K	14	MON MAP VIDEO
310.00	340.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
310.00	340.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
340.00			090048 FLIGHT INSTRUMENT SCAN -A2
340.00	370.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
340.00	370.00	30.00	3L 02 MON VERTICAL SPEED INDIC
340.00	370.00	30.00	3A 10 MONITOR AIRSPEED INDIC
340.00	370.00	30.00	2K 14 MON MAP VIDEO
340.00	370.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
340.00	370.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
288.00			030007 ENGINE INSTRUMENT SCAN
295.00			00EV09 C/P EXT VIS SCAN
340.00			00EV04 C/P EXT VIS SCAN
363.00			030007 ENGINE INSTRUMENT SCAN
370.00			16BL04 DESCEND THRU 6600.
370.00			16XL94 ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
379.00	380.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
380.60	382.60	2.00	1D16XX02 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
384.40	390.40	6.00	1D16AL94 MON COPILOT - TURN LEFT HEADING 240. DESCEND AND MAIN-TAIN 5000 MSL.
380.00			16DL81 ARM NEW DL MCP ALT
380.00	380.78	0.78	2H 31 MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
380.80	381.86	1.06	2H 34 READ ALT ENG VALUE ON DIGITAL INDIC
381.86	383.28	1.42	2H 28 PRESS ALT ENG MODE S SW
383.28	384.06	0.78	2H 30 MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
390.00			090048 FLIGHT INSTRUMENT SCAN -A2
390.00	420.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
390.00	420.00	30.00	3L 02 MON VERTICAL SPEED INDIC
390.00	420.00	30.00	3A 10 MONITOR AIRSPEED INDIC
390.00	420.00	30.00	2K 14 MON MAP VIDEO
390.00	420.00	30.00	2K 46 MON STRAIGHT TREND VECTOR SYMBOL
390.00	420.00	30.00	2K 33 MON CURVED TREND VECTOR SYMBOLS
420.00			090048 FLIGHT INSTRUMENT SCAN -A2
420.00	450.00	30.00	2J 02 MON PITCH ATTITUDE INDIC
420.00	450.00	30.00	3L 02 MON VERTICAL SPEED INDIC
420.00	450.00	30.00	3A 10 MONITOR AIRSPEED INDIC
420.00	450.00	30.00	2K 14 MON MAP VIDEO

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
420.00	450.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
420.00	450.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
340.00	360.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
363.00			030007		ENGINE INSTRUMENT SCAN
363.00	363.44	0.44	7F	25	MON ENG NO 1 EPR IND
363.00	363.44	0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F	21	MON NO 1 ENG N1 IND
363.44	363.88	0.44	7F	22	MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F	23	MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F	24	MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04		DESCEND THRU 8000.

C-3

B.8 ILS APPROACH WITH WEATHER DEVIATION—ADVANCED FLIGHT DECK

Nonflying Pilot

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
185.00				090051	FLIGHT INSTRUMENT SCAN -A1	
185.00				160048	MON ADF/RMI-2	
195.00	197.26		2.26	5E	26	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00				16XB91	VECTOR FOR DOWNWIND OPTIONAL WX AVOIDNC	
195.00	207.00		12.00	1P16XX91		N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
207.00	214.00		7.00	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
214.00	217.00		3.00	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
207.00	217.00		10.00	1P16XY91		APPROACH.515 HAS STRONG WX RADAR ECHOES.REQUEST HDG 300.WILL ADVISE CLR.
220.00	232.00		12.00	1P16AA91		NASA 515, TURN RT. HDG 300, DESCEND AND MAINTAIN 6000 FT CONTACT ATL 127.25
232.00	239.00		7.00	1A	25	ACTUATE COMM 2 PUSH-TO-TALK SW
232.00	239.00		7.00	1P16BB91		515,ROGER,HDG 300, MAINTAIN 6000, APPR ON 127.25
240.00				160061	ENTER/ARM NEW ALT IN MCP	
240.00				16XL02	BEGIN TURN TO AVOID HEAVY WEATHER	
235.00				160062	ENTER NEW HEADNG IN MCP	
210.00				16BL03	DESCEND THRU 11000.	
210.00				090061	FLIGHT INSTRUMENT SCAN -A1	
240.00				160092	TUNE ATL APPROACH ON 127.25	
240.00	244.88		4.88	1B	01	MON VHF-2L FREQ IND
240.00	242.90		2.90	1B	02	SET VHF-2L FREQ-WHOLE NO.S
242.88	244.86		1.98	1B	03	SET VHF-2L FREQ - FRACTIONS

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
246.00						
246.00	247.49		1.49	160093	CONTACT ATL APPROACH ON 127.25	
246.40	251.90		3.50	1B	05	SET VHF-2 COMM TFR SW TO LEFT
246.40	251.90		3.50	1A	10	ACT PUSH-TO-TALK SW
251.90	255.90		4.00	1P16XX93		ATL APPR,NASA 515 DESCENDING TO 6000.
255.00				1P16YY90		NASA 515,ATL APPR, ROGER.
255.00	270.00		15.00	00EV03	C/P EXT VIS SCAN	
270.00				8A	10	PILOT EXTERNAL VISION SCAN
270.00	285.00		15.00	00EV03	C/P EXT VIS SCAN	
250.00				8A	10	PILOT EXTERNAL VISION SCAN
280.00				090048	FLIGHT INSTRUMENT SCAN -A2	
310.00				090048	FLIGHT INSTRUMENT SCAN -A2	
340.00				090048	FLIGHT INSTRUMENT SCAN -A2	
288.00				090048	FLIGHT INSTRUMENT SCAN -A2	
288.00	288.44		0.44	030007	ENGINE INSTRUMENT SCAN	
288.00	288.44		0.44	7F	25	MON ENG NO 1 EPR IND
288.44	288.88		0.44	7F	30	MON ENG NO 2 EPR IND
288.44	288.88		0.44	7F	21	MON NO 1 ENG N1 IND
288.88	289.32		0.44	7F	22	MON NO 2 ENG N1 IND
288.88	289.32		0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
289.32	289.76		0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76		0.44	7F	23	MON NO 1 ENG N2 IND
289.76	290.20		0.44	7F	24	MON NO 2 ENG N2 IND
289.76	290.20		0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
290.20	290.64		0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
290.64	291.08		0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
290.64	291.08		0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
291.08	291.52		0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
291.08	291.52		0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
291.52	291.96		0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
291.52	291.96		0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
295.00				7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00	340.00		45.00	00EV09	C/P EXT VIS SCAN	
340.00				8A	12	PILOT EXTERNAL VISION SCAN
340.00	360.00		20.00	00EV04	C/P EXT VIS SCAN	
363.00				8A	10	PILOT EXTERNAL VISION SCAN
363.00	363.44		0.44	030007	ENGINE INSTRUMENT SCAN	
363.00	363.44		0.44	7F	25	MON ENG NO 1 EPR IND
363.44	363.88		0.44	7F	30	MON ENG NO 2 EPR IND
363.44	363.88		0.44	7F	21	MON NO 1 ENG N1 IND
				7F	22	MON NO 2 ENG N1 IND

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
363.88	364.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
363.88	364.32	0.44	7F 32 MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F 23 MON NO 1 ENG N2 IND
364.32	364.76	0.44	7F 24 MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F 33 MON ENG NO 1 FUEL FLOW INDIC
364.76	365.20	0.44	7F 34 MON ENG NO 2 FUEL FLOW INDIC
365.20	365.64	0.44	7F 09 MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F 10 MON NO 1 ENG OIL TEMP INDIC
365.64	366.08	0.44	7F 18 MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11 MON NO 1 ENG OIL QTY INDIC
366.08	366.52	0.44	7F 19 MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12 MON NO 1 ENG VIBRATION AMPLITUDE INDIC
366.52	366.96	0.44	7F 20 MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			18BL04 DESCEND THRU 8000.
370.00			16XB94 ALT STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDNCE
370.00	373.00	3.00	1P16AA94 APPROACH, 515 IS CLEAR OF WEATHER
370.00	373.00	3.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
374.00	381.00	7.00	1P16BB94 NASA 515, TURN LEFT HEADING 240,DESCEND AND MAINTAIN 5000 FT
381.00	384.00	3.00	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
384.00	385.70	1.70	1A 25 ACTUATE COMM 2 PUSH-TO-TALK SW
381.00	386.00	5.00	1P16CC94 515, ROGER. TURN LT HDG 240,MAINTN 5000.
380.00			180081 ENTER/ARM NEW ALT IN MCP
385.00			180082 ENTER NEW HEADNG IN MCP
390.00			090048 FLIGHT INSTRUMENT SCAN -A2
420.00			090048 FLIGHT INSTRUMENT SCAN -A2
450.00			090048 FLIGHT INSTRUMENT SCAN -A2
480.00			090048 FLIGHT INSTRUMENT SCAN -A2
510.00			090051 FLIGHT INSTRUMENT SCAN -A1
390.00			00EV08 C/P EXT VIS SCAN
390.00	430.00	40.00	8A 11 PILOT EXTERNAL VISION SCAN
430.00			030007 ENGINE INSTRUMENT SCAN
430.00	430.44	0.44	7F 25 MON ENG NO 1 EPR IND
430.00	430.44	0.44	7F 30 MON ENG NO 2 EPR IND
430.44	430.88	0.44	7F 21 MON NO 1 ENG N1 IND
430.44	430.88	0.44	7F 22 MON NO 2 ENG N1 IND
430.88	431.32	0.44	7F 31 MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32	0.44	7P 32 MON ENG NO 2 EXH GAS TEMP IND

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
431.32	431.76	0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76	0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08	0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96	0.44	7F	20	MON NO 2 ENG VIBR

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
150.00			00EV05	C/P EXT VIS SCA"
50.00	175.00	25.00	6A 11	PILOT .NAL VISION SCA..
185.00			090051	FLIGHT INSTRUMENT SCAN -A1
195.00			160048	MON ADF/RMI-2
195.00	197.28	2.28	5E 28	MON ADF NO.1 POINTER ON ADF/RMI 2 INDIC
195.00			18XL91	VECTOR FOR DOWN WIND - OPTIONAL WX AVOIDANCE
195.00	196.60	1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
196.60	198.60	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
198.60	200.40	1.80	1X160001	LINE SELECT [ATC UPLINKS PENDING]
200.40	210.40	10.00	1D16XX01	READ -TURN RT HDG 270,DESCND AND MAIN-TAIN 6000 FT,MONITOR ATL APPR ON 127.25
210.40	212.20	1.80	1X160030	LINE SELECT [UNABLE]
212.20	214.00	1.80	1X160024	LINE SELECT [STRONG WX RADAR ECHOES]
214.00	215.80	1.80	1X160014	LINE SELECT [HEADING REQUEST]
215.80	217.00	1.20	1X160033	PRESS KEY [3]
217.00	218.20	1.20	1X160040	PRESS KEY [0]
218.20	219.40	1.20	1X160040	PRESS KEY [0]
219.40	221.20	1.80	1X160029	LINE SELECT [REQ TEM HDG XXX-WILL ADVISE]
226.00	227.60	1.60	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
227.60	229.60	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
229.60	231.40	1.80	1X160001	LINE SELECT [ATC UPLINKS PENDING]
231.40	241.40	10.00	1D16XL91	READ -TURN RT HDG 300, DESCEND AND MAINTAIN 6000 MSL MONITOR APPR 127.25
241.40	243.20	1.80	1X160030	LINE SELECT [UNABLE]
245.00			18DL81	ARM NEW DL MCP ALT
240.00			16XL02	BEGIN TURN TO AVOID HEAVY WEATHER

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
240.00			18DL02	ENGAGE DATA LINKED HEADING IN MCP	
210.00			16BL03	DESCEND THRU 11000.	
210.00			090051	FLIGHT INSTRUMENT SCAN -A1	
240.00			160092	TUNE ATL APPROACH ON 127.25	
240.00	244.88	4.88	1B	01	MON VHF-2L FREQ IND
240.00	242.90	2.90	1B	02	SET VHF-2L FREQ-WHOLE NO.S
242.88	244.86	1.98	1B	03	SET VHF-2L FREQ - FRACTIONS
246.00			16DL93	MONITOR ATL APPROACH ON 127.25/VHF-2L	
246.00	247.49	1.49	1B	05	SET VHF-2 COMM TFR SW TO LEFT
247.50	249.50	2.00	1B	04	ADJ VHF-2 VOLUME
220.00			090048	FLIGHT INSTRUMENT SCAN -A2	
255.00			00EV03	C/P EXT VIS SCAN	
255.00	270.00	15.00	8A	10	PILOT EXTERNAL VISION SCAN
270.00			00EV03	C/P EXT VIS SCAN	
270.00	285.00	15.00	8A	10	PILOT EXTERNAL VISION SCAN
250.00			090048	FLIGHT INSTRUMENT SCAN -A2	
280.00			090048	FLIGHT INSTRUMENT SCAN -A2	
310.00			090048	FLIGHT INSTRUMENT SCAN -A2	
340.00			090048	FLIGHT INSTRUMENT SCAN -A2	
288.00			030007	ENGINE INSTRUMENT SCAN	
288.00	288.44	0.44	7F	25	MON ENG NO 1 EPR IND
288.00	288.44	0.44	7F	30	MON ENG NO 2 EPR IND
288.44	288.88	0.44	7F	21	MON NO 1 ENG N1 IND
288.44	288.88	0.44	7F	22	MON NO 2 ENG N1 IND
288.88	289.32	0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
288.88	289.32	0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
289.32	289.76	0.44	7F	23	MON NO 1 ENG N2 IND
289.32	289.76	0.44	7F	24	MON NO 2 ENG N2 IND
289.76	290.20	0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
289.76	290.20	0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
290.20	290.64	0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
290.64	291.08	0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
290.64	291.08	0.44	7F	16	MON NO 2 ENG OIL TEMP INDIC
291.08	291.52	0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
291.08	291.52	0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
291.52	291.96	0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
291.52	291.96	0.44	7F	20	MON NO 2 ENG VIBR AMPLITUDE INDIC
295.00			00EV09	C/P EXT VIS SCAN	
295.00	340.00	45.00	8A	12	PILOT EXTERNAL VISION SCAN

SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
340.00				
340.00	360.00	20.00	00EV04	C/P EXT VIS SCAN
			8A 10	PILOT EXTERNAL VISION SCAN
363.00				
363.00	363.44	0.44	030007	ENGINE INSTRUMENT SCAN
363.00	363.44	0.44	7F 25	MON ENG NO 1 EPR IND
363.44	363.88	0.44	7F 30	MON ENG NO 2 EPR IND
363.44	363.88	0.44	7F 21	MON NO 1 ENG N1 IND
363.88	364.32	0.44	7F 22	MON NO 2 ENG N1 IND
363.88	364.32	0.44	7F 31	MON ENG NO 1 EXH GAS TEMP IND
364.32	364.76	0.44	7F 32	MON ENG NO 2 EXH GAS TEMP IND
364.32	364.76	0.44	7F 23	MON NO 1 ENG N2 IND
364.76	365.20	0.44	7F 24	MON NO 2 ENG N2 IND
364.76	365.20	0.44	7F 33	MON ENG NO 1 FUEL FLOW INDIC
365.20	365.64	0.44	7F 34	MON ENG NO 2 FUEL FLOW INDIC
365.64	366.08	0.44	7F 09	MON NO 1 ENG OIL PRESS INDIC
365.64	366.08	0.44	7F 10	MON NO 1 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 18	MON NO 2 ENG OIL TEMP INDIC
366.08	366.52	0.44	7F 11	MON NO 1 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 19	MON NO 2 ENG OIL QTY INDIC
366.52	366.96	0.44	7F 12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
370.00			7F 20	MON NO 2 ENG VIBR AMPLITUDE INDIC
370.00			16BL04	DESCEND THRU 6600.
			16XL94	ALTITUDE STEP DOWN AND VECTOR TO RESUME AFTER WX AVOIDANCE
370.00	371.80	1.80	1X160002	LINE SELECT [REQUEST FOR CLEARANCE]
371.80	373.60	1.80	1X160020	LINE SELECT [RESUME ON-COURSE]
379.00	380.80	1.80	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
380.80	382.80	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
382.80	384.40	1.80	1X160001	LINE SELECT [ATC UPLINKS PENDING]
384.40	390.40	6.00	1D16XL94	READ - TURN LEFT HEADING 240. DESCEND & MAINTAIN 6000 MSL.
390.40	392.20	1.80	1X160030	LINE SELECT [UNABLE]
390.00			18DL81	ARM NEW DL MCP ALT
390.00			090048	FLIGHT INSTRUMENT SCAN -A2
420.00			090048	FLIGHT INSTRUMENT SCAN -A2
450.00			090048	FLIGHT INSTRUMENT SCAN -A2
480.00			090048	FLIGHT INSTRUMENT SCAN -A2
510.00			090051	FLIGHT INSTRUMENT SCAN -A1

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
390.00				00EV08	C/P EXT VIS SCAN	
390.00	430.00		40.00	8A	11	PILOT EXTERNAL VISION SCAN
430.00				030007	ENGINE INSTRUMENT SCAN	
430.00	430.44		0.44	7F	25	MON ENG NO 1 EPR IND
430.00	430.44		0.44	7F	30	MON ENG NO 2 EPR IND
430.44	430.88		0.44	7F	21	MON NO 1 ENG N1 IND
430.44	430.88		0.44	7F	22	MON NO 2 ENG N1 IND
430.88	431.32		0.44	7F	31	MON ENG NO 1 EXH GAS TEMP IND
430.88	431.32		0.44	7F	32	MON ENG NO 2 EXH GAS TEMP IND
431.32	431.76		0.44	7F	23	MON NO 1 ENG N2 IND
431.32	431.76		0.44	7F	24	MON NO 2 ENG N2 IND
431.76	432.20		0.44	7F	33	MON ENG NO 1 FUEL FLOW INDIC
431.76	432.20		0.44	7F	34	MON ENG NO 2 FUEL FLOW INDIC
432.20	432.64		0.44	7F	09	MON NO 1 ENG OIL PRESS INDIC
432.64	433.08		0.44	7F	10	MON NO 1 ENG OIL TEMP INDIC
432.64	433.08		0.44	7F	18	MON NO 2 ENG OIL TEMP INDIC
433.08	433.52		0.44	7F	11	MON NO 1 ENG OIL QTY INDIC
433.08	433.52		0.44	7F	19	MON NO 2 ENG OIL QTY INDIC
433.52	433.96		0.44	7F	12	MON NO 1 ENG VIBRATION AMPLITUDE INDIC
433.52	433.96		0.44	7F	20	MON NO 2 ENG VIBR

B.9 ILS MISSED APPROACH WITH REROUTE–CONVENTIONAL FLIGHT DECK

Flying Pilot

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
15.00			160062 LANDING CHECKL
647.00	647.60	0.60	1P 10 MONITOR CALL-OUT
647.60	648.00	0.40	1P 14 MONITOR CALL-OUT
650.00	650.70	0.70	1P 10 MONITOR CALL-OUT
651.00	652.30	1.30	1P160079 CALL OUT -(ARMED GREEN LIGHT)
654.50	655.20	0.70	1P 10 MONITOR CALL-OUT
655.20	656.20	1.00	1P 10 MONITOR CALL-OUT
658.20	658.60	0.40	1P 14 MONITOR CALL-OUT
658.60	659.70	1.10	1P 12 MONITOR CALL-OUT
650.00			00EV21 PILOT EXT VIS SCAN
650.00	655.00	5.00	8A 10 PILOT EXTERNAL VISION SCAN
665.00			16FB17 WINDSHEAR WARNING
665.00	675.00	10.00	1P16FB27 N 515,DC-9 3 MI AHD REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL 08L,MAX THRST REQ-D
680.00			16FB04 INITIATE GO-AROUND BY PILOT
680.41	683.71	3.30	1P16FB03 CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
680.41	682.85	2.44	4B 06 ADVANCE THRUST LVRS TO TAKEOFF THRUST
682.00			16FB05 COPILOT GOAROUND ACTIVITIES
685.40	686.10	0.70	1P 10 MONITOR CALL-OUT
693.15	693.45	0.30	1P 16 MONITOR REPORT
697.80	699.80	2.00	1P 02 MONITOR CALL-OUT
682.00			16FB16 MISSED APPROACH AND HOLDING CLEARANCE
682.00	685.50	3.50	1P16FB22 RADIO COMM-ATL TWR, 515 IS EXECUTING A MISSED APPROACH
685.50	690.90	5.40	1P16FB09 RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000 , SAY YOUR INTENTIONS)
690.90	698.90	8.00	1P16FB23 515,ROGER.RW HDG TO 3000.REQST TO HOLD FOR 15 MINS TO ASSESS THE WX.
909.00	919.00	10.00	1P16FB24 NA 515,CLRD TO MACEY INT,TURN LT HDG 060, INTCPT/PROCEED VIA AHN RADIAL 322.CLIMB

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
919.00	929.00	10.00	1P16FB25		AND MAINTAIN FL 180. HOLD N.E. OF MACEY AS PUBLISHED. EFC AT XXXX Z.
929.00	943.00	14.00	1P16FB26		S,ROG,CLRD TO MACEY 060 TO AHN R-322.MNT FL 180,HOLD N.E. OF MACEY AS PUBLSHD,EFC
883.00			140003	ALTITUDE CHANGE PROC	
883.00	893.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
883.00	893.00	10.00	3L	02	MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3H	02	MON CORR BARO ALT INDIC
883.00	893.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
883.00	885.82	2.82	4B	03	ACTUATE BOTH THROTTLES
883.00	885.37	2.37	3F	01	MON MACH NO INDIC
893.00			140003	ALTITUDE CHANGE PROC	
893.00	903.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
893.00	903.00	10.00	3L	02	MON VERTICAL SPEED INDIC
893.00	893.77	0.77	3H	02	MON CORR BARO ALT INDIC
893.00	903.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
893.00	895.82	2.82	4B	03	ACTUATE BOTH THROTTLES
893.00	895.37	2.37	3F	01	MON MACH NO INDIC
903.00			140003	ALTITUDE CHANGE PROC	
903.00	913.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
903.00	913.00	10.00	3L	02	MON VERTICAL SPEED INDIC
903.00	903.77	0.77	3H	02	MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B	03	ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F	01	MON MACH NO INDIC
913.00			140003	ALTITUDE CHANGE PROC	
913.00	923.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L	02	MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H	02	MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B	03	ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F	01	MON MACH NO INDIC
923.00			140003	ALTITUDE CHANGE PROC	
923.00	933.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L	02	MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H	02	MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B	03	ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F	01	MON MACH NO INDIC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
902.00			16FB07	P/CP GOAROUND COMMUNICATIONS
902.00	906.50	4.50	1P16FB10	CALL-OUT (SET FLAPS & REPORT 3000 REPORT 170 KNOTS)
902.00			16FB06	CP FLAP SET AND CALLOUTS
907.00	907.70	0.70	1P 07	MONITOR REPORT
910.89	910.59	0.70	1P 07	MONITOR REPORT
912.89	913.59	0.70	1P180058	CALL OUT -[FLAPS 1]
919.50	920.20	0.70	1P 07	MONITOR REPORT
923.00	923.70	0.70	1P16FB29	CALL OUT [FLAPS UP]
928.50	929.20	0.70	1P 07	MONITOR REPORT

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
46.00					
847.00	847.80	0.80	160062	LANDING CHECKL'	
847.60	848.00	0.40	1P	10	MONITOR C[illegible]-OUT
850.00	850.70	0.70	1P	14	MONITOR CALL-OUT
851.00	852.30	1.30	1P	10	MONITOR CALL-OUT
			1P160079		CALL OUT -[ARMED - GREEN LIGHT]
854.50	855.20	0.70	1P	10	MONITOR CALL-OUT
855.20	856.20	1.00	1P	10	MONITOR CALL-OUT
858.20	858.60	0.40	1P	14	MONITOR CALL-OUT
858.60	859.70	1.10	1P	12	MONITOR CALL-OUT
860.00			[illegible]		[illegible]
860.00	865.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
865.00					
865.00	866.60	1.60	16DL62		WINDSHEAR WARNING (FROM DC-9 AHEAD)
			1D16XX01		MON INFORMATION MANAGEMENT MASTER AURAL
866.60	868.60	2.00	1D16XX09		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] GREEN REVERSE VIDEO
870.40	878.40	8.00	1D16XY62		MONITOR COPILOT
880.00			16FB04		INITIATE GO-AROUND BY PILOT
880.41	883.71	3.30	1P16FB03		CALL-OUT [GOING AROUND NOW, SET FLAP 15, GEAR UP]
880.41	882.85	2.44	4B	06	ADVANCE THRUST LVRS TO TAKEOFF THRUST
882.00			16FB05		COPILOT GOAROUND ACTIVITIES
885.40	886.10	0.70	1P	10	MONITOR CALL-OUT
893.15	893.45	0.30	1P	18	MONITOR REPORT
897.80	899.80	2.00	1P	02	MONITOR CALL-OUT
882.00			15YL01		MISSED APPROACH CALL AND REQUEST FOR HOLDING
897.00	898.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT MASTER AURAL
898.60	900.60	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] GREEN
928.40	938.40	10.00	1D16AL01		MON COPILOT
938.40	948.40	10.00	1D16AL02		MON COPILOT
883.00			140003		ALTITUDE CHANGE PROC
883.00	893.00	10.00	4A	29	ACT FLT CONTROL TO [illegible]
883.00	893.00	10.00	3L	02	MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3H	02	MON CORR BARO ALT INDIC
883.00	893.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
883.00	885.82	2.82	4B	03	ACTUATE BOTH THROTTLES
883.00	885.37	2.37	3F	01	MON MACH NO INDIC
893.00			140003		ALTITUDE CHANGE PROC
893.00	903.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
893.00	903.00	10.00	3L	02	MON VERTICAL SPEED INDIC

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
893.00	893.77	0.77	3H	02	MON CORR BARO ALT INDIC
893.00	903.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
893.00	895.82	2.82	4B	03	ACTUATE BOTH THROTTLES
893.00	895.37	2.37	3F	01	MON MACH NO INDIC
903.00			140003	ALTITUDE CHANGE PROC	
903.00	913.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
903.00	913.00	10.00	3L	02	MON VERTICAL SPEED INDIC
903.00	903.77	0.77	3H	02	MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B	03	ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F	01	MON MACH NO INDIC
913.00			140003	ALTITUDE CHANGE PROC	
913.00	923.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L	02	MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H	02	MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B	03	ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F	01	MON MACH NO INDIC
923.00			140003	ALTITUDE CHANGE PROC	
923.00	933.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L	02	MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H	02	MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B	03	ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F	01	MON MACH NO INDIC
899.00			16FB07	P/CP GOAROUND COMMUNICATIONS	
899.00	903.50	4.50	1P16FB10	CALL-OUT (SET FLAPS 5 REPORT 3000 REPORT 170 KNOTS)	
899.00			16FB06	CP FLAP SET AND CALLOUTS	
904.00	904.70	0.70	1P	07	MONITOR REPORT
915.89	916.59	0.70	1P	07	MONITOR REPORT
909.89	910.59	0.70	1P160056	CALL OUT -(FLAPS 1)	
916.50	917.20	0.70	1P	07	MONITOR REPORT
920.00	920.70	0.70	1P16F625	CALL OUT (FLAPS UP)	
925.50	926.20	0.70	1P	07	MONITOR REPORT

B.10 ILS MISSED APPROACH WITH REROUTE—CONVENTIONAL FLIGHT DECK

Nonflying Pilot

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
45.00			160062 LANDING CHECKL
846.00	846.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076 CALL OUT -[RECALL]
847.60	848.00	0.40	1P160077 CALL OUT -[CHECKED]
848.00	849.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082 CALL OUT -[FLAPS]
858.60	859.70	1.10	1P160083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
850.00			00EV21 PILOT EXT VIS SCAN
865.00			16FB17 WINDSHEAR WARNING
865.00	875.00	10.00	1P16FB27 N 515,DC-9 3 MI AND REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL GSL,MAX THRST REQ-D
875.00	877.00	2.00	1P16FB28 515, ROGER WINDSHEAR
880.00			16FB04 INITIATE GO-AROUND BY PILOT
880.41	883.61	3.20	1P 15 MONITOR CALL-OUT
882.00			16FB05 COPILOT GOAROUND ACTIVITIES
882.00	882.77	0.77	3H 02 MON CORR BARO ALT INDIC
882.00	882.76	0.76	7F 27 MON ENG NO 1 EPR BUG
882.00	882.76	0.76	7F 29 MON ENG NO 2 EPR BUG
882.00	892.00	10.00	3A 10 MONITOR AIRSPEED INDIC
882.00	882.20	0.20	7G 40 MON MASTER CAUTION AND OVHD ANNUN LTS ON
883.40	885.42	2.02	4E 15 MONITOR FLAP POSITION INDICATOR
885.40	886.40	1.00	1P16FB04 CALL-OUT (FLAPS 15)
887.40	890.46	3.06	4D 01 SET LNDG GEAR LVR TO UP POSITION
887.40	887.94	0.54	4D 07 MONITOR NOSE GEAR UNLOCKED LT ON
887.40	887.94	0.54	4D 11 MON LEFT/RT GEAR UNLOCKED LT ON
890.46	893.19	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
893.15	894.55	1.40	1P16FB05 CALL-OUT (BUG + 15)
897.80	898.34	0.54	4D 08 MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D 12 MON LEFT/RT GEAR UNLOCKED LT OFF

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
897.80	899.80	2.00	1P16FB06 CALL-OUT (GEAR UP, OFF)
882.00			16FB16 MISSED APPROACH AND HOLDING CLEARANCE
885.50	890.90	5.40	1P16FB08 RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000 , SAY YOUR INTENTIONS)
909.00	919.00	10.00	1P16FB24 NA 515,CLRD TO MACEY INT,TURN LT HDG 060, INTCPT/PROCEED VIA AHN RADIAL 322.CLIMB
919.00	929.00	10.00	1P16FB25 AND MAINTAIN FL 180. HOLD N.E. OF MACEY AS PUBLISHED, EFC AT XXXX Z.
922.00	929.00	7.00	1P16FB30 COPILOT WRITES DOWN CLEARANCE TO MACEY
883.00			140003 ALTITUDE CHANGE PROC
893.00			140003 ALTITUDE CHANGE PROC
903.00			140003 ALTITUDE CHANGE PROC
913.00			140003 ALTITUDE CHANGE PROC
923.00			140003 ALTITUDE CHANGE PROC
902.00			16FB07 P/CP GOAROUND COMMUNICATIONS
902.00	906.50	4.50	1P 19 MONITOR CALL OUT
902.00			16FB08 CP FLAP SET AND CALLOUTS
902.00	904.69	2.69	4E 09 SET FLAP CONT LEVER TO FLAPS 5
904.69	906.92	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
906.92	907.72	0.80	1P16FB11 CALL-OUT (FLAPS 5)
907.08	909.81	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
909.81	911.83	2.02	7F 25 MON ENG NO 1 EPR IND
909.81	911.83	2.02	7F 30 MON ENG NO 2 EPR IND
911.89	918.89	7.00	3H 06 MON ALTIMETER
918.89	919.69	0.80	1P16FB12 CALL-OUT (3000)
912.89	913.59	0.70	1P 07 MONITOR REPORT
914.00	916.69	2.69	4E 07 SET FLAP CONT LEVER TO FLAPS 1
917.00	919.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
919.50	920.20	0.70	1P160058 CALL OUT -(FLAPS 1)
920.50	922.52	2.02	7F 25 MON ENG NO 1 EPR IND
920.50	922.52	2.02	7F 30 MON ENG NO 2 EPR IND
923.00	923.70	0.70	1P 07 MONITOR REPORT
924.00	925.98	1.98	4E 08 SET FLAP CONT LEVER TO FLAPS 0
926.00	928.23	2.23	4E 15 MONITOR FLAP POSITION INDICATOR
926.50	929.20	0.70	1P16FB29 CALL OUT (FLAPS UP)

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
45.00				160062	LANDING CHECKL
845.00		846.00	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00		847.60	0.60	1P160076	CALL OUT -[RECALL]
847.60		848.00	0.40	1P160077	CALL OUT -[CHECKED]
848.00		849.00	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00		850.70	0.70	1P160078	CALL OUT -[SPEED BRAKES]
851.00		852.30	1.30	1P 02	MONITOR CALL-OUT
852.50		853.50	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50		855.20	0.70	1P160080	CALL OUT -[LANDING GEAR]
855.20		856.20	1.00	1P160081	CALL OUT -[DOWN, THREE GREEN]
856.20		857.20	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20		858.60	0.40	1P160082	CALL OUT -[FLAPS]
858.60		859.70	1.10	1P160083	CALL OUT -[FIFTEEN GREEN LIGHT]
861.10		862.20	1.10	1P160084	CALL OUT -[CHECKLIST COMPLETE]
861.10		862.20	1.10	1P 12	MONITOR CALL-OUT
850.00				00EV21	PILOT EXT VIS SCAN
865.00				16DL62	WINDSHEAR WARNING (FROM DC-9 AHEAD)
865.00		866.60	1.60	1D16XX01	MON INFORMATION MANAGEMENT MASTER AURAL
866.60		868.60	2.00	1D16XX09	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] GREEN REVERSE VIDEO
868.60		870.40	1.80	1X160001	LINE SELECT [ATC UPLINKS PENDING]

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
870.40	878.40	8.00	1D16XX62		READ-XXXX Z.DC-9 REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL OBL,MAX THRUST REQ-D
878.40	880.20	1.80	1X160045		LINE SELECT [ACKNOWLEDGE]
880.00			16FB04	INITIATE GO-AROUND BY PILOT	
880.41	883.61	3.20	1P	15	MONITOR CALL-OUT
882.00			16FB05	COPILOT GOAROUND ACTIVITIES	
882.00	882.77	0.77	3H	02	MON CORR BARO ALT INDIC
882.00	882.76	0.76	7F	27	MON ENG NO 1 EPR BUG
882.00	882.76	0.76	7F	28	MON ENG NO 2 EPR BUG
882.00	892.00	10.00	3A	10	MONITOR AIRSPEED INDIC
882.00	882.20	0.20	7G	40	MON MASTER CAUTION AND OVHD ANNUN LTS ON
883.40	885.42	2.02	4E	15	MONITOR FLAP POSITION INDICATOR
885.40	886.40	1.00	1P16FB04		CALL-OUT (FLAPS 15)
887.40	890.46	3.06	4D	01	SET LNDG GEAR LVR TO UP POSITION
887.40	887.94	0.54	4D	07	MONITOR NOSE GEAR UNLOCKED LT ON
887.40	887.94	0.54	4D	11	MON LEFT/RT GEAR UNLOCKED LT ON
890.46	893.19	2.73	4B	07	MAKE MINOR THRUST ADJUSTMENT
893.15	894.55	1.40	1P16FB05		CALL-OUT (BUG + 15)
897.80	898.34	0.54	4D	08	MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D	12	MON LEFT/RT GEAR UNLOCKED LT OFF
897.80	899.80	2.00	1P16FB06		CALL-OUT (GEAR UP, OFF)
882.00			16YL01	MISSED APPROACH CALL AND REQUEST FOR HOLDING	
882.00	883.80	1.80	1X160002		LINE SELECT [REQUEST FOR CLEARANCE]
883.80	885.60	1.80	1X160018		LINE SELECT [MAKING MISSED APPROACH]
885.80	886.80	1.20	1X160031		PRESS KEY [1]
886.80	888.00	1.20	1X160044		PRESS [ENT]
888.00	889.20	1.20	1X160035		PRESS KEY [5]
889.20	890.40	1.20	1X160044		PRESS [ENT]
890.40	892.20	1.80	1X160023		LINE SELECT [ENTER HOLDING FOR XX MIN]
897.00	898.80	1.80	1D16XX01		MON INFORMATION MANAGEMENT MASTER AURAL
898.80	900.80	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] GREEN
926.80	928.40	1.80	1X160001		LINE SELECT [ATC UPLINKS PENDING]
928.40	938.40	10.00	1D16XL01		READ-CLRD TO MACEY INT,TURN LT HDG 060, INTCPT AND PROCEED VIA AHN R-822.CLIMB
938.40	948.40	10.00	1D16XL02		AND MAINTAIN FL180, HOLD NE OF MACEY AS PUBLSHD, EFC XXXX Z.
948.40	950.20	1.80	1X160041		LINE SELECT [WILCO]
950.20	952.00	1.80	1X160047		LINE SELECT [PRINT MESSAGE]

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK			
883.00				140003			ALTITUDE CHANGE PROC
893.00				140003			ALTITUDE CHANGE PROC
903.00				140003			ALTITUDE CHANGE PROC
913.00				140003			ALTITUDE CHANGE PROC
923.00				140003			ALTITUDE CHANGE PROC
899.00				16FB07			P/CP GOAROUND COMMUNICATIONS
899.00	903.50		4.50		1P	18	MONITOR CALL OUT
899.00				16FB08			CP FLAP SET AND CALLOUTS
899.00	901.69		2.69		4E	09	SET FLAP CONT LEVER TO FLAPS 5
901.69	903.92		2.23		4E	15	MONITOR FLAP POSITION INDICATOR
903.92	904.72		0.80		1P16FB11		CALL-OUT (FLAPS 5)
904.08	906.81		2.73		4B	07	MAKE MINOR THRUST ADJUSTMENT
906.81	908.83		2.02		7F	25	MON ENG NO 1 EPR IND
906.81	908.83		2.02		7F	30	MON ENG NO 2 EPR IND
908.89	915.89		7.00		3H	06	MON ALTIMETER
915.89	916.69		0.80		1P16FB12		CALL-OUT (3000)
909.89	910.59		0.70		1P	07	MONITOR REPORT
911.00	913.69		2.69		4E	07	SET FLAP CONT LEVER TO FLAPS 1
914.00	916.23		2.23		4E	15	MONITOR FLAP POSITION INDICATOR
916.50	917.20		0.70		1P160058		CALL OUT -[FLAPS 1]
917.50	919.52		2.02		7F	25	MON ENG NO 1 EPR IND
917.50	919.52		2.02		7F	30	MON ENG NO 2 EPR IND
920.00	920.70		0.70		1P	07	MONITOR REPORT
921.00	922.98		1.98		4E	06	SET FLAP CONT LEVER TO FLAPS 0
923.00	925.23		2.23		4E	15	MONITOR FLAP POSITION INDICATOR
925.50	926.20		0.70		1P16FB29		CALL OUT [FLAPS UP]

B.11 ILS MISSED APPROACH WITH REROUTE–ADVANCED FLIGHT DECK

Flying Pilot

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK			
45.00				180082	LANDING CHECKL		
847.00	847.80		0.80		1P	10	MONITOR CALL-OUT
847.60	848.00		0.40		1P	14	MONITOR CALL-OUT
850.00	850.70		0.70		1P	10	MONITOR CALL-OUT
851.00	852.30		1.30		1P180079		CALL OUT -(ARMED - GREEN LIGHT)
854.50	855.20		0.70		1P	10	MONITOR CALL-OUT
855.20	856.20		1.00		1P	10	MONITOR CALL-OUT
856.20	858.60		0.40		1P	14	MONITOR CALL-OUT
858.60	859.70		1.10		1P	12	MONITOR CALL-OUT
860.00				180071	FLIGHT INSTRUMENT SCAN -A2, PILOT		
860.00	880.00		30.00		2K	14	MON MAP VIDEO
860.00	880.00		30.00		2K	46	MON STRAIGHT TREND VECTOR SYMBOL
860.00	880.00		30.00		2K	33	MON CURVED TREND VECTOR SYMBOLS
860.00	880.00		30.00		2J	13	MON ILS BOX INDIC
860.00	880.00		30.00		2J	04	MON FLT PATH ACCEL INDIC
860.00	880.00		30.00		2J	01	MON ROLL ATT INDIC
860.00	880.00		30.00		2J	19	MON PITCH REF INDIC
860.00	880.00		30.00		3A	10	MONITOR AIRSPEED INDIC
865.00				00EV02	C/P EXT VIS SCAN		
865.00				16FB17	WINDSHEAR WARNING		
865.00	875.00		10.00		1P16FB27		N 515,DC-9 3 MI AHD REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL OSL,MAX THRST REQ-D
880.00				18YL01	INITIATE GO-AROUND		
880.00	883.30		3.30		1P16FB03		CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
880.00	882.50		2.50		4B	09	PRESS THROTTLE GO-AROUND SWITCHES
882.00				16FB05	COPILOT GOAROUND ACTIVITIES		
885.40	886.10		0.70		1P	10	MONITOR CALL-OUT
893.15	893.45		0.30		1P	16	MONITOR REPORT

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
897.80	899.80	2.00	1P	02	MONITOR CALL-OUT
882.00			16FB16		MISSED APPROACH AND HOLDING CLEARANCE
882.00	885.50	3.50	1P16FB22		RADIO COMM-ATL TWR, 515 IS EXECUTING A MISSED APPROACH
885.50	890.90	5.40	1P16FB08		RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000 , SAY YOUR INTENTIONS)
890.90	898.90	8.00	1P16FB23		515,ROGER.RW HDG TO 3000.REQST TO HOLD FOR 15 MINS TO ASSESS THE WX.
909.00	919.00	10.00	1P16FB24		NA 515,CLRD TO MACEY INT,TURN LT HDG 060, INTCPT/PROCEED VIA AHN RADIAL 322.CLIMB
919.00	929.00	10.00	1P16FB25		AND MAINTAIN FL 180. HOLD N.E. OF MACEY AS PUBLISHED, EFC AT XXXX Z.
929.00	943.00	14.00	1P16FB26		5,ROG,CLRD TO MACEY 060 TO AHN R-322.MNT FL 180,HOLD N.E. OF MACEY AS PUBLSHD,EFC
883.00			140003		ALTITUDE CHANGE PROC
883.00	893.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
883.00	893.00	10.00	3L	02	MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3H	02	MON CORR BARO ALT INDIC
883.00	893.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
883.00	885.62	2.62	4B	03	ACTUATE BOTH THROTTLES
883.00	885.37	2.37	3F	01	MON MACH NO INDIC
893.00			140003		ALTITUDE CHANGE PROC
893.00	903.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
893.00	903.00	10.00	3L	02	MON VERTICAL SPEED INDIC
893.00	893.77	0.77	3H	02	MON CORR BARO ALT INDIC
893.00	903.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
893.00	895.62	2.62	4B	03	ACTUATE BOTH THROTTLES
893.00	895.37	2.37	3F	01	MON MACH NO INDIC
902.00			16FB07		P/CP GOAROUND COMMUNICATIONS
902.00	906.50	4.50	1P16FB10		CALL-OUT (SET FLAPS 5 REPORT 3000 REPORT 170 KNOTS)
902.00			16FB08		CP FLAP SET AND CALLOUTS
907.00	907.70	0.70	1P	07	MONITOR REPORT
910.80	910.50	0.70	1P	07	MONITOR REPORT
912.80	913.50	0.70	1P180058		CALL OUT -(FLAPS 1)
919.50	920.20	0.70	1P	07	MONITOR REPORT
923.00	923.70	0.70	1P16FB29		CALL OUT [FLAPS UP]
928.50	929.20	0.70	1P	07	MONITOR REPORT
903.00			140003		ALTITUDE CHANGE PROC
903.00	913.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
903.00	913.00	10.00	3L	02	MON VERTICAL SPEED INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
903.00	903.77	0.77	3H	02	MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B	03	ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F	01	MON MACH NO INDIC
913.00			140003	ALTITUDE CHANGE PROC	
913.00	923.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L	02	MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H	02	MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B	03	ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F	01	MON MACH NO INDIC
923.00			140003	ALTITUDE CHANGE PROC	
923.00	933.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L	02	MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H	02	MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B	03	ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F	01	MON MACH NO INDIC
930.00			18YB01	ENTER ROUTE TO MACEY IN FLIGHT MANAGEMENT COMPUTER	
987.55	992.55	5.00	2K	59	MON MAP VIDEO - NEW ROUTE APPEARS AS A DASHED LINE
993.90	995.90	2.00	2K	60	MON MAP VIDEO - NEW ROUTE APPEARS AS A SOLID LINE
995.90	997.27	1.37	2H	35	PRESS HOR PATH MODE SW
997.27	998.05	0.78	2H	36	MON HOR PATH MODE LT GREEN - HOR PATH MODE ENGAGED
998.07	999.43	1.36	2H	39	PRESS VERT PATH MODE SW
999.43	1000.21	0.78	2H	40	MON VERT PATH MODE L GREEN - VERT PATH MODE ENGAGED
933.00			140003	ALTITUDE CHANGE PROC	
933.00	943.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
933.00	943.00	10.00	3L	02	MON VERTICAL SPEED INDIC
933.00	933.77	0.77	3H	02	MON CORR BARO ALT INDIC
933.00	943.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
933.00	935.82	2.82	4B	03	ACTUATE BOTH THROTTLES
933.00	935.37	2.37	3F	01	MON MACH NO INDIC
943.00			140003	ALTITUDE CHANGE PROC	
943.00	953.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
943.00	953.00	10.00	3L	02	MON VERTICAL SPEED INDIC
943.00	943.77	0.77	3H	02	MON CORR BARO ALT INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
943.00	953.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
943.00	945.82	2.82	4B	03	ACTUATE BOTH THROTTLES
943.00	945.37	2.37	3F	01	MON MACH NO INDIC
953.00			140003	ALTITUDE CHANGE PROC	
953.00	963.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
953.00	963.00	10.00	3L	02	MON VERTICAL SPEED INDIC
953.00	953.77	0.77	3H	02	MON CORR BARO ALT INDIC
953.00	963.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
953.00	955.82	2.82	4B	03	ACTUATE BOTH THROTTLES
953.00	955.37	2.37	3F	01	MON MACH NO INDIC
963.00			140003	ALTITUDE CHANGE PROC	
963.00	973.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
963.00	973.00	10.00	3L	02	MON VERTICAL SPEED INDIC
963.00	963.77	0.77	3H	02	MON CORR BARO ALT INDIC
963.00	973.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
963.00	965.82	2.82	4B	03	ACTUATE BOTH THROTTLES
963.00	965.37	2.37	3F	01	MON MACH NO INDIC
973.00			140003	ALTITUDE CHANGE PROC	
973.00	983.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
973.00	983.00	10.00	3L	02	MON VERTICAL SPEED INDIC
973.00	973.77	0.77	3H	02	MON CORR BARO ALT INDIC
973.00	983.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
973.00	975.82	2.82	4B	03	ACTUATE BOTH THROTTLES
973.00	975.37	2.37	3F	01	MON MACH NO INDIC
983.00			140003	ALTITUDE CHANGE PROC	
983.00	993.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
983.00	993.00	10.00	3L	02	MON VERTICAL SPEED INDIC
983.00	983.77	0.77	3H	02	MON CORR BARO ALT INDIC
983.00	993.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
983.00	985.82	2.82	4B	03	ACTUATE BOTH THROTTLES
983.00	985.37	2.37	3F	01	MON MACH NO INDIC

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
45.00			180082	LANDING CHECKLI	
47.00	847.60	0.60	1P	10	MONITOR OUT
847.60	848.00	0.40	1P	14	MONITOR CALL-OUT
850.00	850.70	0.70	1P	10	MONITOR CALL-OUT
851.00	852.30	1.30	1P180079		CALL OUT -[ARMED - GREEN LIGHT]
854.50	855.20	0.70	1P	10	MONITOR CALL-OUT
855.20	856.20	1.00	1P	10	MONITOR CALL-OUT
856.20	856.60	0.40	1P	14	MONITOR CALL-OUT
856.60	859.70	1.10	1P	12	MONITOR CALL-OUT
850.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT	
850.00	880.00	30.00	2K	14	MON MAP VIDEO
850.00	880.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
850.00	880.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
850.00	880.00	30.00	2J	13	MON ILS BOX INDIC
850.00	880.00	30.00	2J	04	MON FLT PATH ACCEL INDIC
850.00	880.00	30.00	2J	01	MON ROLL ATT INDIC
850.00	880.00	30.00	2J	19	MON PITCH REF INDIC
850.00	880.00	30.00	3A	10	MONITOR AIRSPEED INDIC
865.00			00EV02	C/P EXT VIS SCAN	
865.00			18DL62	WINDSHEAR WARNING (FROM DC-9 AHEAD)	
865.00	866.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
866.60	868.60	2.00	1D16XX09		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] RED
870.40	878.40	8.00	1D16XY62		MONITOR COPILOT
880.00			18YL01	INITIATE GO-AROUND	
880.00	883.30	3.30	1P18FB03		CALL-OUT (GOING AROUND NOW, SET FLAP 15, GEAR UP)
880.00	882.50	2.50	4B	09	PRESS THROTTLE GO-AROUND SWITCHES

SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
882.00			16FB05	COPILOT GOAROUND ACTIVITIES	
885.40	886.10	0.70	1P	10	MONITOR CALL-OUT
893.15	893.45	0.30	1P	16	MONITOR REPORT
897.80	899.80	2.00	1P	02	MONITOR CALL-OUT
882.00			16YL01	MISSED APPROACH CALL AND REQUEST FOR HOLDING	
897.00	898.60	1.60	1D16XX01		MON INFORMATION MANAGEMENT ATENSON
898.80	900.80	2.00	1D16XX02		MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
928.40	938.40	10.00	1D16AL01		MON COPILOT
928.40	938.40	10.00	2K	59	MON MAP VIDEO - NEW ROUTE APPEARS AS A DASHED LINE
938.40	948.40	10.00	1D16AL02		MON COPILOT
950.00	952.06	2.06	2L	19	MON LINE 8 MESSAGE [TEMP F-PLN UPDATED]
952.00	953.42	1.42	2L	21	PRESS EXEC KEY
953.50	955.50	2.00	2K	60	MON MAP VIDEO - NEW ROUTE APPEARS AS A SOLID LINE
955.50	956.87	1.37	2H	35	PRESS HOR PATH MODE SW
956.90	957.68	0.78	2H	36	MON HOR PATH MODE LT GREEN - HOR PATH MODE ENGAGED
957.70	959.06	1.36	2H	39	PRESS VERT PATH MODE SW
959.10	959.88	0.78	2H	40	MON VERT PATH MODE L GREEN - VERT PATH MODE ENGAGED
883.00			140003	ALTITUDE CHANGE PROC	
883.00	893.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
883.00	893.00	10.00	3L	02	MON VERTICAL SPEED INDIC
883.00	883.77	0.77	3H	02	MON CORR BARO ALT INDIC
883.00	893.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
883.00	885.82	2.82	4B	03	ACTUATE BOTH THROTTLES
883.00	885.37	2.37	3F	01	MON MACH NO INDIC
893.00			140003	ALTITUDE CHANGE PROC	
893.00	903.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
893.00	903.00	10.00	3L	02	MON VERTICAL SPEED INDIC
893.00	893.77	0.77	3H	02	MON CORR BARO ALT INDIC
893.00	903.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
893.00	895.82	2.82	4B	03	ACTUATE BOTH THROTTLES
893.00	895.37	2.37	3F	01	MON MACH NO INDIC
899.00			16FB07	P/CP GOAROUND COMMUNICATIONS	
899.00	903.50	4.50	1P16FB10		CALL-OUT (SET FLAPS 5 REPORT 3000 REPORT 170 KNOTS)
899.00			16FB06	CP FLAP SET AND CALLOUTS	
904.00	904.70	0.70	1P	07	MONITOR REPORT
915.89	916.59	0.70	1P	07	MONITOR REPORT

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
909.89	910.59	0.70	1P180058		CALL OUT -[FLAPS 1]
916.50	917.20	0.70	1P	07	MONITOR REPORT
920.00	920.70	0.70	1P16FB29		CALL OUT [FLAPS UP]
925.50	926.20	0.70	1P	07	MONITOR REPORT
903.00			140003		ALTITUDE CHANGE PROC
903.00	913.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
903.00	913.00	10.00	3L	02	MON VERTICAL SPEED INDIC
903.00	903.77	0.77	3H	02	MON CORR BARO ALT INDIC
903.00	913.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
903.00	905.82	2.82	4B	03	ACTUATE BOTH THROTTLES
903.00	905.37	2.37	3F	01	MON MACH NO INDIC
913.00			140003		ALTITUDE CHANGE PROC
913.00	923.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
913.00	923.00	10.00	3L	02	MON VERTICAL SPEED INDIC
913.00	913.77	0.77	3H	02	MON CORR BARO ALT INDIC
913.00	923.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
913.00	915.82	2.82	4B	03	ACTUATE BOTH THROTTLES
913.00	915.37	2.37	3F	01	MON MACH NO INDIC
923.00			140003		ALTITUDE CHANGE PROC
923.00	933.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
923.00	933.00	10.00	3L	02	MON VERTICAL SPEED INDIC
923.00	923.77	0.77	3H	02	MON CORR BARO ALT INDIC
923.00	933.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
923.00	925.82	2.82	4B	03	ACTUATE BOTH THROTTLES
923.00	925.37	2.37	3F	01	MON MACH NO INDIC
940.00			140003		ALTITUDE CHANGE PROC
940.00	950.00	10.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
940.00	950.00	10.00	3L	02	MON VERTICAL SPEED INDIC
940.00	940.77	0.77	3H	02	MON CORR BARO ALT INDIC
940.00	950.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
940.00	942.82	2.82	4B	03	ACTUATE BOTH THROTTLES
940.00	942.37	2.37	3F	01	MON MACH NO INDIC
960.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
970.00			090049		FLIGHT INSTRUMENT SCAN -A2
970.00	1000.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
970.00	1000.00	30.00	3L	02	MON VERTICAL SPEED INDIC
970.00	1000.00	30.00	3A	10	MONITOR AIRSPEED INDIC
970.00	1000.00	30.00	2K	14	MON MAP VIDEO
970.00	1000.00	30.00	2K	49	MON STRAIGHT TREND VECTOR SYMBOL
970.00	1000.00	30.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
970.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
980.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
990.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT

B.12 ILS MISSED APPROACH WITH REROUTE–ADVANCED FLIGHT DECK

Nonflying Pilot

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
45.00			180082	LANDING CHECKL
845.00	846.00	1.00	8B090001	READ NEXT ,;EM ON CHECKLIST ON CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P180076	CALL OUT -[RECALL]
847.60	848.00	0.40	1P180077	CALL OUT -[CHECKED]
848.00	849.00	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P180078	CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02	MONITOR CALL-OUT
852.50	853.50	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P180080	CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P180081	CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B090001	READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P180082	CALL OUT -[FLAPS]
858.60	859.70	1.10	1P180083	CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P180084	CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12	MONITOR CALL-OUT
850.00			180071	FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00			00EV02	C/P EXT VIS SCAN
865.00	875.00	10.00	8A 10	PILOT EXTERNAL VISION SCAN
865.00			16FB17	WINDSHEAR WARNING
865.00	875.00	10.00	1P16FB27	N 515,DC-9 3 MI AHD REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL OSL,MAX THRST REQ-D
875.00	877.00	2.00	1P16FB28	515, ROGER WINDSHEAR
880.00			18YL01	INITIATE GO-AROUND
880.00	883.20	3.20	1P 15	MONITOR CALL-OUT
882.00			18FB05	COPILOT GOAROUND ACTIVITIES
882.00	882.77	0.77	3H 02	MON CORR BARO ALT INDIC
882.00	882.76	0.76	7F 27	MON ENG NO 1 EPR BUG
882.00	882.76	0.76	7F 29	MON ENG NO 2 EPR BUG
882.00	892.00	10.00	3A 10	MONITOR AIRSPEED INDIC
882.00	882.20	0.20	7G 40	MON MASTER CAUTION AND OVHD ANNUN LTS ON
883.40	885.42	2.02	4E 15	MONITOR FLAP POSITION INDICATOR
885.40	886.40	1.00	1P16FB04	CALL-OUT [FLAPS 15]
887.40	890.46	3.06	4D 01	SET LNDG GEAR LVR TO UP POSITION
887.40	887.94	0.54	4D 07	MONITOR NOSE GEAR UNLOCKED LT ON
887.40	887.94	0.54	4D 11	MON LEFT/RT GEAR UNLOCKED LT ON
890.46	893.19	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
893.15	894.55	1.40	1P16FB05		CALL-OUT (BUG + 15)
897.80	898.34	0.54	4D	08	MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D	12	MON LEFT/RT GEAR UNLOCKED LT OFF
897.80	899.80	2.00	1P16FB06		CALL-OUT (GEAR UP, OFF)
882.00			16FB16		MISSED APPROACH AND HOLDING CLEARANCE
885.50	890.90	5.40	1P16FB08		RADIO-COMM (NASA 515 CLIMB RUNWAY HEADING TO 3000 , SAY YOUR INTENTIONS)
909.00	919.00	10.00	1P16FB24		NA 515,CLRD TO MACEY INT,TURN LT HDG 080, INTCPT/PROCEED VIA AHN RADIAL 322.CLIMB
919.00	929.00	10.00	1P16FB25		AND MAINTAIN FL 180. HOLD N.E. OF MACEY AS PUBLISHED. EFC AT XXXX Z.
922.00	929.00	7.00	1P16FB30		COPILOT WRITES DOWN CLEARANCE TO MACEY
883.00			140003		ALTITUDE CHANGE PROC
893.00			140003		ALTITUDE CHANGE PROC
902.00			16FB07		P/CP GOAROUND COMMUNICATIONS
902.00	906.50	4.50	1P	19	MONITOR CALL OUT
902.00			16FB08		CP FLAP SET AND CALLOUTS
902.00	904.69	2.69	4E	09	SET FLAP CONT LEVER TO FLAPS 5
904.69	906.92	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
906.92	907.72	0.80	1P16FB11		CALL-OUT (FLAPS 5)
907.08	909.81	2.73	4B	07	MAKE MINOR THRUST ADJUSTMENT
909.81	911.83	2.02	7F	25	MON ENG NO 1 EPR IND
909.81	911.83	2.02	7F	30	MON ENG NO 2 EPR IND
911.89	918.89	7.00	3H	06	MON ALTIMETER
918.89	919.69	0.80	1P16FB12		CALL-OUT (3000)
912.89	913.59	0.70	1P	07	MONITOR REPORT
914.00	916.69	2.69	4E	07	SET FLAP CONT LEVER TO FLAPS 1
917.00	919.23	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
919.50	920.20	0.70	1P160058		CALL OUT -(FLAPS 1)
920.50	922.52	2.02	7F	25	MON ENG NO 1 EPR IND
920.50	922.52	2.02	7F	30	MON ENG NO 2 EPR IND
923.00	923.70	0.70	1P	07	MONITOR REPORT
924.00	925.98	1.98	4E	06	SET FLAP CONT LEVER TO FLAPS 0
926.00	928.23	2.23	4E	15	MONITOR FLAP POSITION INDICATOR
928.50	929.20	0.70	1P16FB29		CALL OUT (FLAPS UP)
903.00			140003		ALTITUDE CHANGE PROC
913.00			140003		ALTITUDE CHANGE PROC
923.00			140003		ALTITUDE CHANGE PROC
930.00			19YB01		ENTER ROUTE TO MACEY IN FLIGHT MANAGEMENT COMPUTER
930.00	931.35	1.35	2L	37	PRESS A/WPT KEY
931.35	932.70	1.35	2L	44	PRESS H/RTE KEY
932.70	934.05	1.35	2L	50	PRESS N KEY
934.05	935.40	1.35	2L	26	PRESS NO.3 KEY

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
935.40	936.75	1.35	2L	27	PRESS NO.2 KEY
936.75	938.10	1.35	2L	27	PRESS NO.2 KEY
938.10	939.45	1.35	2L	36	PRESS . (DECIMAL PT) KEY
939.45	940.80	1.35	2L	26	PRESS NO.1 KEY
940.80	942.15	1.35	2L	27	PRESS NO.2 KEY
942.15	943.95	1.80	2L	70	LINE SELECT AHN322/ 12 FROM SCRATCH PAD TO [RTE LEGS] PAGE AFTER KATL.
943.95	945.95	2.00	2L	71	OBSERVE AHN01 WAY-POINT INSERTED ON [RTE LEGS] PAGE.
945.95	947.75	1.80	2L	72	LINE SELECT AHN01 TO SCRATCH PAD FROM [RTE LEGS] PAGE
947.75	949.55	1.80	2L	73	LINE SELECT AHN01 FROM SCRATCH PAD TO [DIRECT TO] PROMPT.
949.55	950.90	1.35	2L	49	PRESS M/GS KEY
950.90	952.25	1.35	2L	37	PRESS A/WPT KEY
952.25	953.60	1.35	2L	39	PRESS C KEY
953.60	954.95	1.35	2L	41	PRESS E KEY
954.95	956.30	1.35	2L	61	PRESS Y KEY
956.30	957.65	1.35	2L	36	PRESS . (DECIMAL PT) KEY
957.65	959.00	1.35	2L	26	PRESS NO.1 KEY
959.00	960.35	1.35	2L	33	PRESS NO.8 KEY
960.35	961.70	1.35	2L	35	PRESS NO.0 KEY
961.70	963.05	1.35	2L	35	PRESS NO.0 KEY
963.05	964.40	1.35	2L	35	PRESS NO.0 KEY
964.40	966.20	1.80	2L	74	LINE SELECT MACEY/ 18000 FROM SCRATCH PAD TO [THEN] PROMPT
966.20	968.00	1.80	2L	75	LINE SELECT MACEY TO SCRATCH PAD FROM [RTE LEGS] PAGE
968.00	970.00	2.00	2L	76	PRESS [HOLD] KEY
970.00	971.80	1.80	2L	77	LINE SELECT MACEY FROM SCRATCH PAD TO [HOLD AT] PROMPT
971.80	973.15	1.35	2L	42	PRESS F/F-L KEY
973.15	974.50	1.35	2L	48	PRESS L KEY
974.50	975.85	1.35	2L	26	PRESS NO.1 KEY
975.85	977.20	1.35	2L	33	PRESS NO.8 KEY
977.20	978.55	1.35	2L	35	PRESS NO.0 KEY
978.55	980.35	1.80	2L	78	LINE SELECT FL180 FROM SCRATCH PAD TO [TGT ALT] PROMPT.
980.35	981.70	1.35	2L	26	PRESS NO.1 KEY
981.70	983.05	1.35	2L	27	PRESS NO.2 KEY
983.05	984.40	1.35	2L	28	PRESS NO.3 KEY
984.40	985.75	1.35	2L	29	PRESS NO.4 KEY
985.75	987.55	1.80	2L	79	LINE SELECT 1234 FROM SCRATCH PAD TO [EFC TIME] PROMPT.
987.55	992.55	5.00	2K	59	MON MAP VIDEO - NEW ROUTE APPEARS AS A DASHED LINE
992.55	993.90	1.35	2L	21	PRESS EXEC KEY
993.90	995.90	2.00	2K	60	MON MAP VIDEO - NEW ROUTE APPEARS AS A SOLID LINE
933.00			140003		ALTITUDE CHANGE PROC
943.00			140003		ALTITUDE CHANGE PROC
953.00			140003		ALTITUDE CHANGE PROC
963.00			140003		ALTITUDE CHANGE PROC
973.00			140003		ALTITUDE CHANGE PROC
983.00			140003		ALTITUDE CHANGE PROC

SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
845.00			
45.00	846.00	1.00	180062 LANDING CHECKLI[illegible]
			8B090001 READ NEX[illegible]M ON CHECKLIST [illegible] CONTROL COLUMN PLACARD
847.00	847.60	0.60	1P160076 CALL OUT -[RECALL]
847.60	848.00	0.40	1P160077 CALL OUT -[CHECKED]
848.00	849.00	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
850.00	850.70	0.70	1P160078 CALL OUT -[SPEED BRAKES]
851.00	852.30	1.30	1P 02 MONITOR CALL-OUT
852.50	853.50	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
854.50	855.20	0.70	1P160080 CALL OUT -[LANDING GEAR]
855.20	856.20	1.00	1P160081 CALL OUT -[DOWN, THREE GREEN]
856.20	857.20	1.00	8B090001 READ NEXT ITEM ON CHECKLIST ON CONTROL COLUMN PLACARD
858.20	858.60	0.40	1P160082 CALL OUT -[FLAPS]
858.60	859.70	1.10	1P160083 CALL OUT -[FIFTEEN GREEN LIGHT]
861.10	862.20	1.10	1P160084 CALL OUT -[CHECKLIST COMPLETE]
861.10	862.20	1.10	1P 12 MONITOR CALL-OUT
850.00			180071 FLIGHT INSTRUMENT SCAN -A2, PILOT
865.00			00EV02 C/P EXT VIS SCAN
865.00	875.00	10.00	8A 10 PILOT EXTERNAL VISION SCAN
865.00			16DL62 WINDSHEAR WARNING (FROM DC-9 AHEAD)
865.00	866.60	1.60	1D16XX01 MON INFORMATION MANAGEMENT ATENSON
866.60	868.60	2.00	1D16XX09 MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] RED
866.60	870.40	1.80	1X160001 LINE SELECT [ATC UPLINKS PENDING]

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
870.40	878.40	8.00	1D16XX02	READ-XXXX Z,DC-9 REPTS ABRUPT WINDSHR AT 1500 FT ON FINAL OSL,MAX THRUST REQ-D
878.40	880.20	1.80	1X160045	LINE SELECT [ACKNOWLEDGE]
880.00			16YL01	INITIATE GO-AROUND
880.00	883.20	3.20	1P 15	MONITOR CALL-OUT
882.00			16FB05	COPILOT GOAROUND ACTIVITIES
882.00	882.77	0.77	3H 02	MON CORR BARO ALT INDIC
882.00	882.76	0.76	7F 27	MON ENG NO 1 EPR BUG
882.00	882.76	0.76	7F 29	MON ENG NO 2 EPR BUG
882.00	892.00	10.00	3A 10	MONITOR AIRSPEED INDIC
882.00	882.20	0.20	7Q 40	MON MASTER CAUTION AND OVHD ANNUN LTS ON
883.40	885.42	2.02	4E 15	MONITOR FLAP POSITION INDICATOR
885.40	886.40	1.00	1P16FB04	CALL-OUT (FLAPS 15)
887.40	890.46	3.06	4D 01	SET LNDG GEAR LVR TO UP POSITION
887.40	887.94	0.54	4D 07	MONITOR NOSE GEAR UNLOCKED LT ON
887.40	887.94	0.54	4D 11	MON LEFT/RT GEAR UNLOCKED LT ON
890.46	893.19	2.73	4B 07	MAKE MINOR THRUST ADJUSTMENT
893.15	894.55	1.40	1P16FB05	CALL-OUT (BUG + 15)
897.80	898.34	0.54	4D 08	MON NOSE GEAR UNLOCKED LT OFF
897.80	898.34	0.54	4D 12	MON LEFT/RT GEAR UNLOCKED LT OFF
897.80	899.80	2.00	1P16FB06	CALL-OUT (GEAR UP, OFF)
882.00			16YL01	MISSED APPROACH CALL AND REQUEST FOR HOLDING
882.00	883.80	1.80	1X160002	LINE SELECT [REQUEST FOR CLEARANCE]
883.80	885.80	1.80	1X160018	LINE SELECT [MAKING MISSED APPROACH]
885.80	886.80	1.20	1X160031	PRESS KEY [1]
886.80	888.00	1.20	1X160044	PRESS [ENT]
888.00	889.20	1.20	1X160035	PRESS KEY [5]
889.20	890.40	1.20	1X160044	PRESS [ENT]
890.40	892.20	1.80	1X160023	LINE SELECT [ENTER HOLDING FOR XX MIN]
897.00	898.80	1.80	1D16XX01	MON INFORMATION MANAGEMENT ATENSON
898.80	900.80	2.00	1D16XX02	MON INFORMATION MANAGEMENT DISPLAY [MODE-S UPLINK PNDG] AMBER
926.80	928.40	1.80	1X160001	LINE SELECT [ATC UPLINKS PENDING]
928.40	938.40	10.00	1D16XL01	READ-CLRD TO MACEY INT,TURN LT HDG 060, INTCPT AND PROCEED VIA AHN R-322.CLIMB
938.40	948.40	10.00	1D16XL02	AND MAINTAIN FL180, HOLD NE OF MACEY AS PUBLSHD, EFC XXXX Z.
948.40	950.20	1.80	1X160041	LINE SELECT [WILCO]
883.00			140003	ALTITUDE CHANGE PROC
883.00			140003	ALTITUDE CHANGE PROC

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
899.00				16FB07	P/CP GOAROUND COMMUNICATIONS	
899.00	903.50		4.50	1P	19	MONITOR CALL OUT
899.00				16FB08	CP FLAP SET AND CALLOUTS	
899.00	901.69		2.69	4E	09	SET FLAP CONT LEVER TO FLAPS 5
901.69	903.92		2.23	4E	15	MONITOR FLAP POSITION INDICATOR
903.92	904.72		0.80	1P16FB11		CALL-OUT (FLAPS 5)
904.08	906.81		2.73	4B	07	MAKE MINOR THRUST ADJUSTMENT
906.81	908.83		2.02	7F	25	MON ENG NO 1 EPR IND
906.81	908.83		2.02	7F	30	MON ENG NO 2 EPR IND
908.89	915.89		7.00	3H	06	MON ALTIMETER
915.89	916.69		0.80	1P16FB12		CALL-OUT (3000)
909.89	910.59		0.70	1P	07	MONITOR REPORT
911.00	913.69		2.69	4E	07	SET FLAP CONT LEVER TO FLAPS 1
914.00	916.23		2.23	4E	15	MONITOR FLAP POSITION INDICATOR
916.50	917.20		0.70	1P160058		CALL OUT -(FLAPS 1)
917.50	919.52		2.02	7F	25	MON ENG NO 1 EPR IND
917.50	919.52		2.02	7F	30	MON ENG NO 2 EPR IND
920.00	920.70		0.70	1P	07	MONITOR REPORT
921.00	922.98		1.98	4E	06	SET FLAP CONT LEVER TO FLAPS 0
923.00	925.23		2.23	4E	15	MONITOR FLAP POSITION INDICATOR
925.50	926.20		0.70	1P16FB29		CALL OUT (FLAPS UP)
903.00				140003	ALTITUDE CHANGE PROC	
913.00				140003	ALTITUDE CHANGE PROC	
923.00				140003	ALTITUDE CHANGE PROC	
940.00				140003	ALTITUDE CHANGE PROC	
960.00				180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
960.00	970.00		10.00	2K	14	MON MAP VIDEO
960.00	970.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
960.00	970.00		10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
960.00	970.00		10.00	2J	05	MON FLT PATH ANGLE INDIC
960.00	970.00		10.00	2J	04	MON FLT PATH ACCEL INDIC
960.00	970.00		10.00	2J	01	MON ROLL ATT INDIC
960.00	970.00		10.00	2J	19	MON PITCH REF INDIC
960.00	970.00		10.00	3A	10	MONITOR AIRSPEED INDIC
970.00				090048	FLIGHT INSTRUMENT SCAN -A2	
970.00				180073	FLIGHT INSTRUMENT SCAN -A1, COPILOT	
970.00	980.00		10.00	2K	14	MON MAP VIDEO
970.00	980.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
970.00	980.00		10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
970.00	980.00		10.00	2J	05	MON FLT PATH ANGLE INDIC
970.00	980.00		10.00	2J	04	MON FLT PATH ACCEL INDIC
970.00	980.00		10.00	2J	01	MON ROLL ATT INDIC

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
970.00	980.00	10.00	2J	19	MON PITCH REF INDIC
970.00	980.00	10.00	3A	10	MONITOR AIRSPEED INDIC
980.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
980.00	990.00	10.00	2K	14	MON MAP VIDEO
980.00	990.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
980.00	990.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
980.00	990.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
980.00	990.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
980.00	990.00	10.00	2J	01	MON ROLL ATT INDIC
980.00	990.00	10.00	2J	19	MON PITCH REF INDIC
980.00	990.00	10.00	3A	10	MONITOR AIRSPEED INDIC
990.00			180073		FLIGHT INSTRUMENT SCAN -A1, COPILOT
990.00	1000.00	10.00	2K	14	MON MAP VIDEO
990.00	1000.00	10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
990.00	1000.00	10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
990.00	1000.00	10.00	2J	05	MON FLT PATH ANGLE INDIC
990.00	1000.00	10.00	2J	04	MON FLT PATH ACCEL INDIC
990.00	1000.00	10.00	2J	01	MON ROLL ATT INDIC
990.00	1000.00	10.00	2J	19	MON PITCH REF INDIC
990.00	1000.00	10.00	3A	10	MONITOR AIRSPEED INDIC

B.13 TCAS ENCOUNTER—CONVENTIONAL FLIGHT DECK

Flying Pilot

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK
195.00			160091 HANDOFF TO AT[illegible]NAL APPROACH CONT.[illegible]AER
195.00	207.00	12.00	1P16XX91 N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT.CONTACT ATL APPR ON 127.25.
200.00			140007 HEADING CHANGE PROC.
200.00	210.00	10.00	3S 01 MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
200.00	210.00	10.00	4A 28 ACT FLT CONTROL TO CHANGE HDG
200.00	210.00	10.00	3L 02 MON VERTICAL SPEED INDIC
200.00	204.92	4.92	3S 11 SET COURSE DIGITS AND POINTER ON CI USING COURSE CURSOR CONT
205.00	215.00	10.00	3R 58 MON A/C ATTITUDE RELATIVE TO ROLL COMMAND ON FDI
200.00			16BL02 BEGIN TURN TO DOWN-WIND LEG
210.00			16BL03 DESCEND THRU 11000.
215.00			16AA01 ADJUST THRUST AND PITCH TO MAINTAIN A 900 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BAHRR AT 5000 FT.
215.00	217.73	2.73	4B 07 MAKE MINOR THRUST ADJUSTMENT
215.00	220.00	5.00	4A 64 MANUALLY CONTROL A/C
219.00			160092 TUNE ATL APPROACH ON 127.25
226.00			160093 CONTACT ATL APPROACH ON 127.25
231.90	235.90	4.00	1P16YY90 NASA 515,ATL APPR, ROGER.
220.00			090003 FLIGHT INSTRUMENT SCAN - A

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SINCE MISSION BEGINNING START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
220.00	230.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
220.00	230.00	10.00	3L	02	MON VERTICAL SPEED INDIC
220.00	230.00	10.00	3A	10	MONITOR AIRSPEED INDIC
220.00	230.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
230.00			090003		FLIGHT INSTRUMENT SCAN - A
230.00	240.00	10.00	3R	10	MON PITCH ATTITUDE INDIC ON FDI
230.00	240.00	10.00	3L	02	MON VERTICAL SPEED INDIC
230.00	240.00	10.00	3A	10	MONITOR AIRSPEED INDIC
230.00	240.00	10.00	3S	01	MONITOR A/C HEADING RELATIVE TO SELECTED HDG ON CI
240.00			16TC01		TCAS ENCOUNTER
240.00	241.80	1.80	1D16XX10		MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
240.00	241.00	1.00	1D16XX03		MON MASTER CAUTION VISUAL ALERT-AMBER
241.80	243.00	1.40	1TC00001		MON VISUAL ALERT DISPLAY - AMBER [TCAS ALERT]
244.00	255.00	11.00	1TC00003		PILOT VISUAL SEARCH FOR TRAFFIC
244.00	255.00	11.00	1TC00015		MONITOR TRAFFIC DISPLAY
244.00	247.00	3.00	1TC00017		MON CALL OUT-[TRAFFIC AT 1-OCLOCK, 1200 FEET BELOW, AND CLIMBING]
252.00	255.00	3.00	1TC00023		MON CALL OUT-[TRAFFIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING]
255.00	255.75	0.75	1D16XX04		MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00	1.00	1D16XX05		MON MASTER WARNING VISUAL ALERT - RED
255.80	257.50	1.70	1TC00006		RESOLUTION ADVISORY VOICE ALERT, [TCAS CLIMB,CLIMB,CLIMB]
255.80	263.40	7.60	1TC00021		PILOT EVALUATES SITUATION AND DECIDES TO RESPOND TO R. A.
255.00	275.00	20.00	1TC00007		MON TIME CRITICAL VISUAL ALERT DISPLAY [IVSI RED EYEBROWS] CLIMB INDICATION
259.00	263.00	4.00	1TC00015		MONITOR TRAFFIC DISPLAY
259.00	262.00	3.00	1TC00025		MON CALL OUT-[TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
262.40	263.40	1.00	3R	64	PRESS AUTOPILOT DISENGAGE SWITCH ON CONTROL WHEEL
263.00	268.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
263.00	268.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
263.40	283.40	20.00	4A	29	ACT FLT CONTROL TO CHANGE ALT

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
263.40	266.22	2.82	4B	03	ACTUATE BOTH THROTTLES
265.00	269.00	4.00	1TC00026		CALL OUT-[OK, WE ARE CLIMBING.KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
265.90	266.34	0.44	7F	25	MON ENG NO 1 EPR IND
265.90	266.34	0.44	7F	30	MON ENG NO 2 EPR IND
268.90	273.90	5.00	8A	10	PILOT EXTERNAL VISION SCAN
268.90	273.90	5.00	8A	10	PILOT EXTERNAL VISION SCAN
270.00	273.00	3.00	1TC00029		MON CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
275.00	277.40	2.40	1TC00016		MON CALL OUT [CLEAR OF CONFLICT ING TRAFFIC]
275.00	280.00	5.00	8A	10	PILOT EXTERNAL VISION SCAN
279.00	299.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
279.00	299.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
277.00	279.82	2.82	4B	03	ACTUATE BOTH THROTTLES
277.00	279.05	2.05	3R	10	MON PITCH ATTITUDE INDIC ON FDI
279.00	279.44	0.44	7F	25	MON ENG NO 1 EPR IND
279.00	279.44	0.44	7F	30	MON ENG NO 2 EPR IND
280.00	282.03	2.03	3L	01	MON VERTICAL SPEED INDIC
283.40	298.40	15.00	4A	28	ACT FLT CONTROL TO CHANGE ALT
288.00	295.00	7.00	1TC00020		[ROGER 515,RADAR SHOWS NEGATIVE TRAF FIC.CONTINUE DESCENT AS CLEARED.
298.00			16TC02		RE-ENGAGE AUTOPILOT PITCH AND ROLL CHANNELS IN MAN CWS
298.00	300.00	2.00	3R	65	ACTUATE AUTOPILOT PITCH AND ROLL CHANNEL SWITCHES
295.00			00EV09		C/P EXT VIS SCAN
310.00			090019		FLIGHT INSTRUMENT SCAN - D
310.00	370.00	60.00	3R	56	MON PITCH ATTITUDE INDIC ON FDI
310.00	370.00	60.00	3L	02	MON VERTICAL SPEED INDIC
310.00	370.00	60.00	3A	10	MONITOR AIRSPEED INDIC
310.00	370.00	60.00	3S	15	MONITOR A/C HEADING RELATIVE TO SELECTED

B.14 TCAS ENCOUNTER–CONVENTIONAL FLIGHT DECK

Nonflying Pilot

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
195.00			160091	HANDOFF TO AT' ~INAL APPROACH CONT. .ER
195.00	207.00	12.00	1P16XX91	N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25	ACTUATE COMM 2 PUSH-TO-TALK SW
207.00	214.00	7.00	1P16YY91	515,ROGER,HDG 270, MAINTAIN 6000,APPR ON 127.25.
200.00			140007	HEADING CHANGE PROC.
200.00			16BL02	BEGIN TURN TO DOWN-WIND LEG
210.00			16BL03	DESCEND THRU 11000.
215.00			16AA01	ADJUST THRUST AND PITCH TO MAINTAIN A 800 FPM DESCENT AT 250 KCAS USING PITCH CWS MODE OF A.P. PILOT HAS DETERMINED THAT THIS SHOULD PERMIT DECEL TO 210 FOR CROSSING BANRR AT 5000 FT.
219.00			160092	TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B 01	MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02	SET VHF-2L FREQ-WHOLE NO.S
221.88	223.86	1.98	1B 03	SET VHF-2L FREQ - FRACTIONS
226.00			160093	CONTACT ATL APPROACH ON 127.25
226.00	227.49	1.49	1B 05	SET VHF-2 COMM TFR SW TO LEFT
228.40	231.90	3.50	1A 10	ACT PUSH-TO-TALK SW
228.40	231.90	3.50	1P16XX93	ATL APPR,NASA 515 DESCENDING TO 6000.
231.90	235.90	4.00	1P16YY90	NASA 515,ATL APPR, ROGER.

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SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
220.00				090003	FLIGHT INSTRUMENT SCAN - A
230.00				090003	FLIGHT INSTRUMENT SCAN - A
240.00				16TC01	TCAS ENCOUNTER
240.00	241.60		1.60	1D16XX10	MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
240.00	241.00		1.00	1D16XX03	MON MASTER CAUTION VISUAL ALERT-AMBER
240.00	295.00		55.00	8A 12	PILOT EXTERNAL VISION SCAN
241.60	243.00		1.40	1TC00018	PRESS MASTER CAUTION SWITCH
241.60	243.00		1.40	1TC00001	MON VISUAL ALERT DISPLAY - AMBER [TCAS ALERT]
244.00	247.00		3.00	1TC00002	CALL OUT-[TRAFFIC AT 1 O-CLOCK, 1200 FT BELOW,AND CLIMBING]
244.00	255.00		11.00	1TC00004	MONITOR TCAS TRAFFIC DISPLAY
252.00	255.00		3.00	1TC00022	CALL OUT-[TRAFFIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING]
255.00	255.75		0.75	1D16XX04	MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00		1.00	1D16XX05	MON MASTER WARNING VISUAL ALERT - RED
255.80	257.50		1.70	1TC00006	RESOLUTION ADVISORY VOICE ALERT, [TCAS CLIMB,CLIMB,CLIMB]
255.00	275.00		20.00	1TC00007	MON TIME CRITICAL VISUAL ALERT DISPLAY [IVSI RED EYEBROWS] CLIMB INDICATION
257.50	258.90		1.40	1TC00019	PRESS MASTER WARNING SWITCH
259.00	262.00		3.00	1TC00024	CALL OUT-[TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
259.00	275.00		16.00	1TC00004	MONITOR TCAS TRAFFIC DISPLAY
265.00	269.00		4.00	1TC00027	MON CALL OUT-[OK, WE ARE CLIMBING.KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
270.00	273.00		3.00	1TC00028	CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
278.00	288.00		10.00	1TC00009	CALL ATC, [ATL APPR, NASA 515 LEVEL AT 10,000 DUE TO TCAS RA, PLEASE ADVISE]
275.00	277.40		2.40	1TC00011	CALL OUT - [CLEAR OF CONFLICTING TRAFFIC]
277.00	277.77		0.77	3H 02	MON CORR BARO ALT INDIC
288.00	295.00		7.00	1TC00020	[ROGER 515,RADAR SHOWS NEGATIVE TRAF FIC.CONTINUE DESCENT AS CLEARED.
299.00				18TC02	RE-ENGAGE AUTOPILOT PITCH AND ROLL CHANNELS IN MAN CWS
295.00				00EV09	C/P EXT VIS SCAN
295.00	340.00		45.00	8A 12	PILOT EXTERNAL VISION SCAN

B.15 TCAS ENCOUNTER—ADVANCED FLIGHT DECK

Flying Pilot

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
195.00				180091		HANDOFF TO AT' 'INAL APPROACH CON' .LER
195.00	207.00		12.00	1P16XX91		N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT.CONTACT ATL APPR ON 127.25.
200.00				180081		ENTER/ARM NEW ALT IN MCP
200.00	202.47		2.47	2H	33	ROTATE ALT ENG KNOB
200.00	200.78		0.78	2H	31	MON ALT ENG MODE LT BLUE - ALT ENG MODE PRESELECTED
201.40	202.46		1.06	2H	34	READ ALT ENG VALUE ON DIGITAL INDIC
202.50	203.92		1.42	2H	28	PRESS ALT ENG MODE S SW
203.90	204.68		0.78	2H	30	MON ALT ENG MODE LT ORANGE - ALT ENG MODE ARMED
200.00				16BL02		BEGIN TURN TO DOWN-WIND LEG
205.00				180082		ENTER NEW HEADNG IN MCP
205.00	207.50		2.50	2H	19	ROTATE TKA SEL KNOB
205.00	206.11		1.11	2H	20	READ TKA SEL VALUE ON DIGITAL INDIC
207.50	208.27		0.77	2H	15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
210.00				16BL03		DESCEND THRU 11000.
210.00				090051		FLIGHT INSTRUMENT SCAN -A1
210.00	220.00		10.00	2J	02	MON PITCH ATTITUDE INDIC
210.00	220.00		10.00	3L	02	MON VERTICAL SPEED INDIC
210.00	220.00		10.00	3A	10	MONITOR AIRSPEED INDIC
210.00	220.00		10.00	2K	14	MON MAP VIDEO
210.00	220.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
210.00	220.00		10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
219.00				180092		TUNE ATL APPROACH ON 127.25
226.00				180093		CONTACT ATL APPROACH ON 127.25
231.90	235.90		4.00	1P16YY90		NASA 515,ATL APPR, ROGER.
220.00				090051		FLIGHT INSTRUMENT SCAN -A1
220.00	230.00		10.00	2J	02	MON PITCH ATTITUDE INDIC
220.00	230.00		10.00	3L	02	MON VERTICAL SPEED INDIC
220.00	230.00		10.00	3A	10	MONITOR AIRSPEED INDIC
220.00	230.00		10.00	2K	14	MON MAP VIDEO
220.00	230.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
220.00	230.00		10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS
230.00				090051		FLIGHT INSTRUMENT SCAN -A1
230.00	240.00		10.00	2J	02	MON PITCH ATTITUDE INDIC
230.00	240.00		10.00	3L	02	MON VERTICAL SPEED INDIC
230.00	240.00		10.00	3A	10	MONITOR AIRSPEED INDIC
230.00	240.00		10.00	2K	14	MON MAP VIDEO
230.00	240.00		10.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
230.00	240.00		10.00	2K	33	MON CURVED TREND VECTOR SYMBOLS

SINCE MISSION BEGINNING	START	END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
240.00				16TC01	TCAS ENCOUNTER
240.00	241.60		1.60	1D16XX10	MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
240.00	241.00		1.00	1D16XX03	MON MASTER CAUTION VISUAL ALERT-AMBER
241.60	243.00		1.40	1TC00001	MON VISUAL ALERT DISPLAY - AMBER [TCAS ALERT]
244.00	255.00		11.00	1TC00003	PILOT VISUAL SEARCH FOR TRAFFIC
244.00	255.00		11.00	1TC00015	MONITOR TRAFFIC DISPLAY
244.00	247.00		3.00	1TC00017	MON CALL OUT-[TRAFFIC AT 1-OCLOCK, 1200 FEET BELOW, AND CLIMBING]
252.00	255.00		3.00	1TC00023	MON CALL OUT-[TRAFFIC AT 1 O-CLOCK, 800 FEET BELOW, AND CLIMBING]
255.00	255.75		0.75	1D16XX04	MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00		1.00	1D16XX05	MON MASTER WARNING VISUAL ALERT - RED
255.80	257.50		1.70	1TC00006	RESOLUTION ADVISORY VOICE ALERT. [TCAS CLIMB,CLIMB,CLIMB]
255.80	263.40		7.60	1TC00021	PILOT EVALUATES SITUATION AND DECIDES TO RESPOND TO R. A.
255.00	275.00		20.00	1TC00007	MON TIME CRITICAL VISUAL ALERT DISPLAY [IVSI RED EYEBROWS] CLIMB INDICATION
259.00	263.00		4.00	1TC00015	MONITOR TRAFFIC DISPLAY
259.00	262.00		3.00	1TC00025	MON CALL OUT-[TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
262.40	263.40		1.00	3R 04	PRESS AUTOPILOT DISENGAGE SWITCH ON CONTROL WHEEL
263.00	268.00		5.00	8A 10	PILOT EXTERNAL VISION SCAN
263.00	268.00		5.00	8A 10	PILOT EXTERNAL VISION SCAN
263.40	263.40		20.00	4A 29	ACT FLT CONTROL TO CHANGE ALT
263.40	266.22		2.82	4B 03	ACTUATE BOTH THROTTLES
265.00	269.00		4.00	1TC00028	CALL OUT-[OK, WE ARE CLIMBING.KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
265.90	266.34		0.44	7F 25	MON ENG NO 1 EPR IND
265.90	266.34		0.44	7F 30	MON ENG NO 2 EPR IND
268.90	273.90		5.00	8A 10	PILOT EXTERNAL VISION SCAN
268.90	273.90		5.00	8A 10	PILOT EXTERNAL VISION SCAN
270.00	273.00		3.00	1TC00029	MON CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
275.00	277.40		2.40	1TC00016	MON CALL OUT [CLEAR OF CONFLICTING TRAFFIC]
275.00	280.00		5.00	8A 10	PILOT EXTERNAL VISION SCAN
279.00	299.00		20.00	8A 10	PILOT EXTERNAL VISION SCAN

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SINCE MISSION START BEGINNING	END	ACTIVITY TIME	EVENT/PROCEDURE TASK		
279.00	299.00	20.00	8A	10	PILOT EXTERNAL VISION SCAN
277.00	279.82	2.82	4B	03	ACTUATE BOTH THROTTLES
277.00	279.05	2.05	3R	10	MON PITCH ATTITUDE INDIC ON FDI
279.00	279.44	0.44	7F	25	MON ENG NO 1 EPR IND
279.00	279.44	0.44	7F	30	MON ENG NO 2 EPR IND
280.00	282.03	2.03	3L	01	MON VERTICAL SPEED INDIC
283.40	298.40	15.00	4A	29	ACT FLT CONTROL TO CHANGE ALT
288.00	295.00	7.00	1TC00020		(ROGER 515,RADAR SHOWS NEGATIVE TRAF FIC.CONTINUE DESCENT AS CLEARED.
298.00			18TC02		RE-ENGAGE AUTOPILOT IN PREVIOUSLY SELEC-TED AUTO-FLIGHT MODES (FPA,TKA,CAS)
298.00	299.42	1.42	2H	07	PRESS AUTO MODE SW
299.40	300.17	0.77	2H	15	MON TKA SEL MODE LT GREEN - TKA SEL MODE ENGAGED
299.40	300.17	0.77	2H	22	MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
300.20	302.65	2.45	2H	26	ROTATE FPA SEL KNOB
300.20	300.97	0.77	2H	24	MONITOR FPA SEL MODE LT BLUE - FPA SEL MODE PRESELECTED
301.60	302.68	1.08	2H	27	READ FPA SEL VALUE ON DIGITAL INDIC
302.70	304.70	2.00	2K	32	MON ALT/RNG SYMBOLS
304.70	306.10	1.40	2H	21	PRESS FPA SEL MODE SW
306.10	306.87	0.77	2H	22	MONITOR FPA SEL MODE LT GREEN - FPA SEL MODE ENGAGED
310.00			090048		FLIGHT INSTRUMENT SCAN -A2
310.00	340.00	30.00	2J	02	MON PITCH ATTITUDE INDIC
310.00	340.00	30.00	3L	02	MON VERTICAL SPEED INDIC
310.00	340.00	30.00	3A	10	MONITOR AIRSPEED INDIC
310.00	340.00	30.00	2K	14	MON MAP VIDEO
310.00	340.00	30.00	2K	46	MON STRAIGHT TREND VECTOR SYMBOL
310.00	340.00	30.00	2K	33	MON CURVED TREND

B.16 TCAS ENCOUNTER—ADVANCED FLIGHT DECK

Nonflying Pilot

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
195.00			160091	HANDOFF TO AT INAL APPROACH CON LER
195.00	207.00	12.00	1P16XX91	N 515,TURN RT HDG270 DESCND AND MAINTAIN 6000 FT,CONTACT ATL APPR ON 127.25.
207.00	214.00	7.00	1A 25	ACTUATE COMM 2 PUSH-TO-TALK SW
207.00	214.00	7.00	1P16YY91	515,ROGER,HDG 270, MAINTAIN 6000,APPR ON 127.25.
200.00			160081	ENTER/ARM NEW ALT IN MCP
200.00			16BL02	BEGIN TURN TO DOWN-WIND LEG
205.00			160082	ENTER NEW HEADNG IN MCP
210.00			16BL03	DESCEND THRU 11000.
210.00			090051	FLIGHT INSTRUMENT SCAN -A1
219.00			160092	TUNE ATL APPROACH ON 127.25
219.00	223.88	4.88	1B 01	MON VHF-2L FREQ IND
219.00	221.90	2.90	1B 02	SET VHF-2L FREQ-WHOLE NO.S
221.88	223.86	1.98	1B 03	SET VHF-2L FREQ - FRACTIONS
226.00			160093	CONTACT ATL APPROACH ON 127.25
226.00	227.49	1.49	1B 05	SET VHF-2 COMM TFR SW TO LEFT
226.40	231.90	3.50	1A 10	ACT PUSH-TO-TALK SW
226.40	231.90	3.50	1P16XX93	ATL APPR,NASA 515 DESCENDING TO 6000.
231.90	235.90	4.00	1P16YY90	NASA 515,ATL APPR, ROGER.
220.00			090051	FLIGHT INSTRUMENT SCAN -A1
230.00			090051	FLIGHT INSTRUMENT SCAN -A1
240.00			16TC01	TCAS ENCOUNTER
240.00	241.60	1.60	1D16XX10	MON MASTER CAUTION AURAL ALERT 2 CONCURRENT TONES 300-1500 HZ.
240.00	241.00	1.00	1D16XX03	MON MASTER CAUTION VISUAL ALERT-AMBER
240.00	295.00	55.00	8A 12	PILOT EXTERNAL VISION SCAN
241.60	243.00	1.40	1TC00018	PRESS MASTER CAUTION SWITCH
241.60	243.00	1.40	1TC00001	MON VISUAL ALERT DISPLAY - AMBER (TCAS ALERT)
244.00	247.00	3.00	1TC00002	CALL OUT-(TRAFFIC AT 1 O-CLOCK, 1200 FT BELOW,AND CLIMBING)
244.00	255.00	11.00	1TC00004	MONITOR TCAS TRAFFIC DISPLAY
252.00	255.00	3.00	1TC00022	CALL OUT-(TRAFFIC AT 1 O-CLOCK, 900 FEET BELOW, AND CLIMBING)
255.00	255.75	0.75	1D16XX04	MON MASTER WARNING AURAL ALERT 2 ALTERNATING TONES 400 TO 1000 HZ.
255.00	256.00	1.00	1D16XX05	MON MASTER WARNING VISUAL ALERT - RED
255.80	257.50	1.70	1TC00006	RESOLUTION ADVISORY VOICE ALERT. (TCAS CLIMB,CLIMB,CLIMB)
255.00	275.00	20.00	1TC00007	MON TIME CRITICAL VISUAL ALERT DISPLAY (IVSI RED EYEBROWS) CLIMB INDICATION

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SINCE MISSION BEGINNING	START END	ACTIVITY TIME	EVENT/PROCEDURE TASK	
257.50	258.90	1.40	1TC00019	PRESS MASTER WARNING SWITCH
259.00	262.00	3.00	1TC00024	CALL OUT-[TRAFFIC AT 1 O-CLOCK, 700 FEET BELOW, AND CLIMBING]
259.00	275.00	16.00	1TC00004	MONITOR TCAS TRAFFIC DISPLAY
265.00	269.00	4.00	1TC00027	MON CALL OUT-[OK, WE ARE CLIMBING.KEEP AN EYE ON THAT GUY AND CALL APPROACH.]
270.00	273.00	3.00	1TC00028	CALL OUT-[OK, HE IS STILL AT 700 FEET BELOW US]
278.00	288.00	10.00	1TC00009	CALL ATC, [ATL APPR, NASA 515 LEVEL AT 10,800 DUE TO TCAS RA, PLEASE ADVISE]
275.00	277.40	2.40	1TC00011	CALL OUT - [CLEAR OF CONFLICTING TRAFFIC]
277.00	277.77	0.77	3H 02	MON CORR BARO ALT INDIC
288.00	295.00	7.00	1TC00020	[ROGER 515,RADAR SHOWS NEGATIVE TRAFFIC.CONTINUE DESCENT AS CLEARED.
298.00			18TC02	RE-ENGAGE AUTOPILOT IN PREVIOUSLY SELECTED AUTO-FLIGHT MODES (FPA,TKA,CAS)
310.00			090048	FLIGHT INSTRUMENT SCAN -A2
340.00			090048	FLIGHT INSTRUMENT SCAN -A2
295.00			00EV08	C/P EXT VIS SCAN
295.00	340.00	45.00	6A 12	PILOT EXTERNAL

APPENDIX C

TIMELINE ANALYSIS DETAILED RESULTS

APPENDIX C

Results are presented for all the scenarios in terms of histograms defining the time history of relevant activity channels, as well as summary tables to aid in comparative analysis.

The summary tables are shown in Tables C-1 through C-16, and describe the average tasking for all activity channels for each crew member and scenario. The tasking is in terms of percent channel utilization and is averaged over the entire scenario. The averages for VHF voice and data link scenarios are shown, and then the relative impacts due to data link are indicated. Note that a percent increase is additive in these comparisons. These summary tables are placed at the end of this appendix.

The histograms are illustrated in Figures C-1 through C-92, and are also placed at the end of this appendix. The horizontal time axis in these figures correlates with the time reference in Appendix B for the detailed mission scenarios, so that significant tasking impacts can be correlated with the corresponding scenario events.

C.1 NORMAL ILS APPROACH

C.1.1 Conventional Flight Deck Crew Tasking

This section presents TLA results for both crew members in a conventional flight deck operating in both a current NAS and a data link environment.

Significant results are that the nonflying pilot (copilot in the right seat) crew tasking is more substantially affected by data link implementation than is the flying pilot (pilot in the left seat).

Data link increases in internal vision are 9% greater for copilot than pilot. Data link decreases in auditory tasking are 5% greater for copilot than pilot. Other channel variations combine to produce negligible changes in the overall weighted average tasking for both pilot and copilot.

C.1.1.1 Flying Pilot

The pilot tasking channels impacted significantly by data link implementation, when channel activity is averaged over the entire scenario, are internal vision and auditory channels. As seen in Table C-1, the 1.55% increase in internal vision is largely balanced by the 1.90% decrease in auditory tasking. As a result, the weighted channel average tasking is not significantly affected. To gain insight into why increases and decreases have occurred, channel tasking is analyzed as a function of scenario elapsed time, allowing correlation with specific procedures and tasks. The cognitive channel is also investigated to see if any effects are masked by the averaging process in Table C-1.

C.1.1.1.1 Internal Vision Channel

Figure C-1 indicates internal vision channel task loading for both current NAS and data link environments. As shown, the use of data link results in tasking increases during the following key scenario events.

1. ATC vector to downwind heading
2. ATC altitude stepdown clearance
3. Monitor ATIS

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4. ATC vector to base heading

5. ATC ILS approach clearance

6. Handoff to ATL tower and landing clearance

7. Handoff to ATL ground control

8. Taxi clearance

The time for these events can be used to identify specific procedures causing the channel increases. The detailed mission scenario, Appendix B, indicates that task 1D16XX02 is the cause of each channel increase. This task is labeled "Monitor Communication Management Display [Mode-S Uplink Pending] Amber."

C.1.1.1.2 Cognitive Channel

Figure C-2 compares cognitive channel tasking for current NAS and data link concepts. Key scenario events and their effects are as follows.

9. Handoff from ATL center—slight decrease

10. Handoff to ATL final approach—slight decrease

11. Monitor ATIS—decrease

12. Landing clearance—slight increase

13. Taxi clearance—slight increase

It can be seen by reference to the detailed mission scenario that the slight tasking decreases are due to the pilot not having to monitor ATC audio with the data link concept. Similarly, the slight tasking increases are due to pilot monitoring of the communication management display annunciating "UP-LINK PENDING" as in the previous internal vision channel tasking discussion. The somewhat greater tasking decrease is due to the pilot not having to listen to the ATIS audio with the data link concept.

C.1.1.1.3 Auditory Channel

Pilot auditory channel tasking is impacted the most by data link implementation, as shown by Figure C-3. As could be expected, the largest tasking decrease is due to the ATIS monitoring scenario event. The data link concept eliminates approximately 30 sec of audio monitoring. This tasking decrease is predicated on an assumption that the copilot deemed it unnecessary to relay any information to the pilot, an assumption that would certainly not always be correct.

The handoff from ATL center correlates with a tasking decrease due to the nature of a data link handoff requiring only the copilot to select the new VHF comm frequency for monitoring. The other tasking effects are largely due to shifting the pilot auditory monitoring from listening to ATC on the VHF radio to listening to the copilot read out loud the uplink as he reads it on the CDU.

C.1.1.1.4 Weighted Channel Average

Figure C-4 illustrates the combined effect of the individual channel tasking variations due to data link implementation. Scenario events associated with ATC handoffs correlate with slight tasking decreases, while events associated with ATC clearances correlate with slight tasking increases. The ATIS monitoring event correlates with a more significant tasking decrease.

C.1.1.2 Nonflying Pilot

The nonflying pilot (copilot) tasking is more extensively impacted by data link implementation than is the flying pilot tasking. Table C-2 shows a 1.94% decrease in external vision, a 10.57% increase in internal vision, a 3.49% increase in left hand, a 4.79% decrease in right hand, a 0.06% increase in cognitive, a 7.34% decrease in auditory, a 1.08% increase in verbal, and a 0.53% increase in weighted channel average values of activity.

C.1.1.2.1 External Vision

Figure C-5 indicates external vision channel task loading for both current NAS and data link environments. The use of data link results in a tasking decrease during the ATIS monitoring event. This decrease results from the requirement to not exceed 100% total vision (internal + external) during a time when the internal vision channel is heavily loaded. Normally, a reduction in task loading is considered advantageous. In this case, however, an outside visual scan is an important monitoring task and a reduction in scan would be undesirable. It should be noted, however, that due to programming limitations the amount of external vision tasking reduction is probably unrealistically high. Another slight tasking decrease occurs during the taxi clearance scenario event. This coincides with an internal vision tasking increase due to the copilot reading the uplinked taxi clearance.

C.1.1.2.2 Internal Vision

Figure C-6 indicates internal vision channel loading for current NAS and data link environments. Significant tasking increases occur during all but the first of the key scenario events. The highest tasking increase is correlated with the ATC ILS approach clearance event. This is due to the longer and more complicated uplink message requiring more time for the copilot to read. The ATIS and landing clearance events, which require reading lengthy messages, also correlate with large tasking increases.

C.1.1.2.3 Left Hand

Figure C-7 shows the increased left hand channel loading due to data link implementation. A tasking increase is indicated for every scenario key event. The detailed mission scenario shows two copilot left hand channel interactions for each data link transaction; initially to select the pending uplink (Task 1X160001) for display, and then to send the confirming downlink (Task 1X160041). The two highest tasking increases occur during handoff events to ATL approach and to ATL ground control. These events are distinguished from the other key scenario events in that the left hand channel is utilized to select a new frequency on the VHF comm radio panel, in addition to the other data link tasks.

C.1.1.2.4 Right Hand

Figure C-8 indicates the tasking effects due to data link implementation. Right hand tasking is decreased during all the key scenario events except the ATIS event which does not involve that channel. The right hand channel is utilized in VHF voice communications to key the microphone using the control wheel push-to talk switch while transmitting. The data link concept eliminates the need for this

task, producing the tasking decreases. Note that if the pilot (sitting in the left seat) were handling communications, this tasking decrease would be applied to the left hand channel.

C.1.1.2.5 Cognitive

Figure C-9 illustrates the cognitive channel loading effects due to data link implementation. The tasking is decreased for the scenario events involving ATC handoffs, since there is no requirement to call the new ATC facility using data link. Tasking is increased during ATC clearance events, reflecting the procedure where the copilot reads the uplink message out loud to the pilot.

C.1.1.2.6 Auditory

Figure C-10 shows the expected data link effect of significant auditory tasking decreases during all the key scenario events. The ATIS and ILS approach clearance events correlate with the highest tasking decreases since the ATC messages are the longest.

C.1.1.2.7 Verbal

Figure C-11 indicates an unexpected verbal tasking effect of data link implementation. The ATC vector, ILS approach clearance, landing clearance, and taxi clearance events correlate with verbal tasking increases. Examination of the detailed mission scenario reveals that the copilot is spending more time reading the uplink message out loud to the pilot than he saves by not having to read back the clearance to ATC on the VHF radio. This is particularly evident during the ILS approach clearance event. Tasking decreases are indicated during ATC handoffs, as expected.

C.1.1.2.8 Weighted Channel Average

Figure C-12 illustrates the combined effect of the individual channel tasking variations due to data link implementation. As was the case for the pilot, tasking decreases correlate with ATC handoffs and the ATIS scenario event. Tasking increases correlate with ATC clearances. Overall, the magnitude of the tasking increases and decreases is greater than that for the pilot tasking comparisons.

C.1.2 Advanced Flight Deck

This section presents TLA results for both crew members in an advanced flight deck operating in both a current NAS and a data link environment.

It may be significant to note that results for the advanced flight deck closely parallel those for the conventional flight deck.

C.1.2.1 Flying Pilot

TLA results for the flying pilot in the advanced flight deck are similar to those for the conventional flight deck. Taking into account the overall tasking reductions due to increased automation in the advanced flight deck, the channel tasking impact due to data link implementation is very similar to the trends noted for the conventional flight deck. As listed in Table C-3, when averaged over the entire scenario, the only channels significantly affected by data link are internal vision and auditory. As shown, the 1.71% increase in internal vision tasking is largely balanced by the 1.91% decrease in auditory tasking, resulting in an insignificant change in the weighted channel average tasking.

C.1.2.1.1 Internal Vision

Figure C-13 indicates comparative internal vision task loading for current NAS and data link environments. The advanced flight deck results indicate tasking increases during the same key scenario events as in the conventional flight deck analysis. The detailed mission scenario indicates that the task "Monitor Information Management Display [Mode-S Uplink Pending] Amber" is the cause of each tasking increase. Note that Figure C-1 shows a peak tasking of 100% for the conventional flight deck, while Figure C-13 indicates an 80% tasking level during that same event. This event, "Handoff to ATL tower and landing clearance," coincides with crossing the outer marker and intercepting the glideslope. The lower task loading at this point in the advanced flight deck scenario is due to the advanced guidance and display technology utilized.

C.1.2.1.2 Auditory

Pilot auditory tasking in the advanced flight deck is affected by data link implementation in the same way that auditory tasking is affected in the conventional flight deck. As shown in Figure C-14, which is very similar to Figure C-3 for the conventional flight deck, the largest tasking decrease is due to the ATIS monitoring event. The ATL center handoff correlates with another tasking decrease, as in the case of the conventional flight deck.

C.1.2.1.3 Weighted Channel Average

Figure C-15 illustrates that the net effect on pilot tasking is similar to that for the conventional flight deck. ATC handoffs correlate with slight tasking decreases, while ATC clearances correlate with slight tasking increases. The ATIS scenario event correlates with a more significant tasking decrease.

C.1.2.2 Nonflying Pilot

Nonflying pilot (copilot) tasking effects in the advanced flight deck due to data link are very similar to the effects noted for the conventional flight deck. Table C-4 indicates a 1.94% decrease in external vision, a 10.57% increase in internal vision, a 3.49% increase in left hand, a 4.79% decrease in right hand, a 0.06% increase in cognitive, a 7.35% decrease in auditory, a 1.08% increase in verbal, and a 0.53% increase in weighted channel average values of activity.

C.1.2.2.1 External Vision

External vision tasking effects due to data link implementation are similar to those for the conventional flight deck, as shown in Figure C-16. The tasking reductions are slightly less than for the conventional flight deck, due to minor differences in the current NAS tasking.

C.1.2.2.2 Internal Vision

Figure C-17 shows that internal vision tasking effects are very similar to the conventional flight deck, except for the portion correlated with the handoff to ATL ground control and the taxi clearance. The advanced flight deck required a higher level of tasking during these events in the current NAS. This was due to copilot monitoring of the EADI and TV video during touchdown and rollout, while the AGCS performed an autoland. When combined with the increased loading due to the data link handoff to ATL ground and the taxi clearance, the internal vision channel reached a peak loading of approximately 130%.

C.1.2.2.3 Left Hand

Figure C-18 shows that the tasking for this channel is identical to those for the conventional flight deck. This is expected since the data link concept for the copilot operates in a manner independent of whether it is an advanced or conventional flight deck.

C.1.2.2.4 Right Hand

Figure C-19 indicates that the tasking effects due to data link are identical to those for the conventional flight deck, as in the case of left hand channel tasking.

C.1.2.2.5 Cognitive

Figure C-20 indicates that tasking effects are similar to those for the conventional flight deck.

C.1.2.2.6 Auditory

Figure C-21 shows tasking effects identical to those for the conventional flight deck.

C.1.2.2.7 Verbal

Figure C-22 shows tasking effects identical to those for the conventional flight deck.

C.1.2.2.8 Weighted Channel Average

Figure C-23 indicates tasking effects similar to those for the conventional flight deck.

C.2 ILS APPROACH WITH WEATHER DEVIATION

C.2.1 Conventional Flight Deck

C.2.1.1 Flying Pilot

The pilot tasking channels impacted significantly by data link implementation, when channel activity is averaged over the entire scenario, are internal vision and auditory channels. As seen in Table C-5, the 1.75% increase in internal vision is balanced by the 1.94% decrease in auditory tasking. As a result, the weighted average tasking is not significantly affected. These results are similar to the normal ILS approach scenario.

C.2.1.1.1 Internal Vision Channel

The data link implementation had a slightly more adverse impact on internal vision when the overall mission complexity was increased with a weather deviation. As shown in Figure C-24, the key scenario event of requesting a new heading from ATC corresponds with a tasking increase due to data link. This is due to the communications management display monitoring task imposed by the data link system. Other internal vision tasking increases are similar to the normal ILS scenario.

C.2.1.1.2 Auditory Channel

Data link impact on auditory tasking, as shown in Figure C-25, is similar to that for the normal ILS scenario. The addition of the weather deviation tasks resulted in no net change in tasking decrease due

to data link, since the elimination of pilot monitoring of ATC is replaced with pilot monitoring of the copilot.

C.2.1.1.3 Weighted Channel Average

Figure C-26 indicates that the weighted channel increases (resulting from internal vision tasking increases) are largely balanced by the weighted channel decreases (resulting from the auditive tasking decreases).

C.2.1.2 Nonflying Pilot

The data link impact on copilot tasking in the weather deviation scenario is similar but more pronounced than that in the normal ILS scenario. Table C-6 lists the average values of channel tasking for the weather deviation scenario. Comparison with Table C-2 for the normal ILS approach shows that the increased mission complexity resulted in data link implementation more adversely affecting internal vision (approximately 3% greater increase), left hand (approximately 1.5% greater increase), and the weighted channel average (0.3% greater increase). Other channels were more favorably impacted by data link implementation due to increased mission complexity. The right hand average tasking decrease was 1.4% greater, while the average auditory tasking decrease was 1.2% greater in the weather deviation scenario.

C.2.1.2.1 Internal Vision

Figure C-27 indicates internal vision task loading for both current NAS and data link implementation. As shown, the task loading is identical to that of Figure C-6 for the normal ILS scenario except for the key scenario events associated with the weather deviation. A large increase in internal vision tasking is evident at that time, due to the copilot interacting with the CDU to read uplinks and send downlinks.

C.2.1.2.2 Left Hand

Figure C-28 indicates the left hand tasking increases due to data link implementation. Comparison with Figure C-7 indicates a slight tasking increase corresponding to the weather deviation event that does not appear in the normal ILS scenario. This is due to the extra CDU key pushes required to request a new heading around the weather.

C.2.1.2.3 Right Hand

Figure C-29 indicates the right hand tasking decreases due to data link. Comparison with Figure C-8 indicates that the extra ATC communications in the weather deviation scenario requiring right hand activity to key the microphone is eliminated by data link implementation.

C.2.1.2.4 Cognitive

Figure C-30 indicates data link impact on cognitive tasking. Slight tasking increases are balanced by slight tasking decreases during the weather deviation event.

C.2.1.2.5 Auditory

Figure C-31 indicates the auditory tasking decreases due to data link. The tasking reductions shown during the weather deviation event are similar to those for other ATC clearances.

C.2.1.2.6 Verbal

Figure C-32 indicates the verbal tasking decreases due to data link. The weather deviation corresponds with a slight tasking decrease as shown.

C.2.1.2.7 Weighted Channel Average

Figure C-33 indicates the weighted channel average tasking impact due to data link. The weather deviation corresponds with an initial tasking increase due to increased visual tasking, followed by a tasking decrease due to reduced auditive tasking. A minor net change to the weighted average tasking is the result.

C.2.2 Advanced Flight Deck

C.2.2.1 Flying Pilot

Advanced flight deck pilot tasking channels impacted by data link implementation in the weather deviation scenario were similar to those impacts noted in the normal ILS scenario, with the addition of a cognitive tasking increase due to data link. When channel activity is averaged over the entire scenario, as shown in Table C-7, internal vision (3.5% increase) and cognitive (1.6% increase) tasking were increased due to data link. Auditory tasking was decreased by 1.95%. As a result, weighted channel average tasking increased by 0.8%.

C.2.2.1.1 Internal Vision Channel

Figure C-34 indicates comparative internal vision tasking for current NAS and data link environments in the ILS weather deviation scenario. As shown, the scenario events associated with the weather deviation correlate with a 40% overload of the internal vision channel in the data link implementation case. Study of the detailed mission scenario, Appendix B, indicates that the pilot tasks contributing to this overload are Task 090048—Flight Instrument Scan, Task 18DL81—Arm New DL MCP Altitude, and Task 18DL82—Engage data linked Heading in MCP. Comparison with the mission scenario for the current NAS indicates that the instrument scan task was replaced by a shorter instrument scan at an earlier time, helping to prevent the tasking overload in the current NAS scenario.

C.2.2.1.2 Cognitive Channel

Figure C-35 indicates comparative cognitive channel tasking. A tasking increase due to data link is evident during the weather deviation events. Review of the mission scenario indicates that this is due to the instrument scan coinciding with the heading and altitude select tasks on the mode control panel.

C.2.2.1.3 Right Hand Channel

Figure C-36 indicates comparative right hand tasking. A slight tasking decrease due to data link is shown during scenario events which correspond to pilot interaction with the mode control panel.

C.2.2.1.4 Auditory

Figure C-37 indicates auditory comparisons. As shown, the trend established in the normal ILS scenario is continued where the initial tasking decrease is compensated by a similar tasking increase, due to replacing pilot monitoring of ATC with pilot monitoring of the copilot.

C.2.2.1.5 Weighted Channel Average

Figure C-38 illustrates the comparative weighted channel average tasking for the weather deviation scenario. As shown, a significant tasking increase is indicated for the initial portion of the weather deviation.

C.2.2.2 Nonflying Pilot

Advanced flight deck copilot tasking channels were impacted by data link implementation in the weather deviation scenario in a manner very similar to that for the conventional flight deck, as discussed in Section 7.2.1.2. When channel activity is averaged over the entire scenario, as shown in Table C-8, the most significant tasking impacts are in internal vision (13.33% increase), left hand (5.07% increase), right hand (6.17% decrease), auditory (8.55% decrease), and a weighted average tasking increase of 1.03%.

Comparison with data from Table C-4 for the advanced flight deck copilot tasking in the normal ILS scenario indicates that the increased mission complexity of the weather deviation scenario served to amplify the impact of data link. Internal vision and left hand tasking was more adversely affected by data link in the weather deviation scenario. Conversely, right hand and auditory tasking was more favorably impacted. These trends are identical to those described in section C.2.1.2.

C.2.2.2.1 Internal Vision

Figure C-39 indicates internal vision tasking comparisons for the weather deviation scenario. As shown, tasking increases due to data link are identical to those of Figure C-17 for the normal ILS scenario, except for the key scenario events associated with the weather deviation. A large increase in internal vision tasking is evident at that time, coinciding with copilot interaction with the CDU to read uplinks and send downlinks.

C.2.2.2.2 Left Hand

Figure C-40 indicates left hand tasking comparisons. Comparison with Figure C-7 for the normal ILS scenario shows identical tasking increases due to data link except for weather deviation events. CDU key pushes due to uplink acknowledgments and downlink requests are responsible for this. This situation is similar to that for the conventional flight deck copilot tasking.

C.2.2.2.3 Right Hand

Figure C-41 compares data link and current NAS right hand tasking in the weather deviation scenario. A tasking reduction coinciding with weather deviation communications is due to the elimination of microphone keying tasks with data link.

C.2.2.2.4 Auditory

Figure C-42 indicates auditory tasking decreases coinciding with weather deviation events. The extra communications required for weather deviation produces a corresponding task reduction for data link implementation, as compared to the tasking comparisons in Figure C-21 for the normal ILS scenario.

C.2.2.2.5 Weighted Channel Average

As in the conventional flight deck case for the weather deviation scenario, an initial tasking increase due to increased visual tasking is followed by a tasking decrease due to reduced auditive tasking. A minor net increase in the weighted average tasking is the result. This is shown in Figure C-43.

C.3 ILS MISSED APPROACH WITH REROUTE

This section presents TLA results based on a higher level of mission complexity than that achieved for the normal ILS scenario. This more complex scenario incorporates a pilot initiated missed approach and a rerouting to a holding fix.

Crew tasking analysis for this scenario was done for both current NAS (VHF voice) and data link communications. In the current NAS case, the flying pilot calls ATC requesting clearance to hold for 15 min. The nonflying pilot is retracting flaps and landing gear, and making callouts to the pilot during this time. In the data link case, the copilot (nonflying pilot) utilizes the data link to request holding. He does this at the same time as airplane reconfiguration and callouts are accomplished.

C.3.1 Conventional Flight Deck

This section presents TLA results for both crew members in a conventional flight deck operating in both a current NAS and a data link environment. Significant results are that data link implementation reduces pilot auditory and verbal tasking and that copilot verbal, left hand, and internal vision tasking are increased.

C.3.1.1 Flying Pilot

The pilot tasking channels impacted significantly by data link implementation, when channel activity is averaged over the entire scenario, are internal vision (1.22% increase), auditory (3.25% decrease), and verbal (2.7% decrease). These changes, as seen in Table C-9, combine to produce a net weighted average tasking decrease of 1.46%.

C.3.1.1.1 Internal Vision

Figure C-44 indicates comparative internal vision task loading for current NAS and data link environments. As seen in the detailed mission scenario, Appendix B, the missed approach scenario is identical to the normal ILS scenario up to approximately 865 sec elapsed time. As seen in Figure C-44, the use of data link results in two internal vision pilot tasking increases associated with the missed approach. The first tasking increase is due to the visual annunciation of a pending uplink (Task 1D16XX09). This uplink is read aloud by the copilot and advises that the preceding airplane encountered extreme windshear. The second tasking increase is due to visual annunciation of another uplink pending (Task 1D16XX02), which is read aloud by the copilot and provides clearance to a holding fix.

C.3.1.1.2 Auditory

Figure C-45 indicates comparative auditory task loading for current NAS and data link environments. An initial tasking decrease is followed by a tasking increase due to data link implementation causing the copilot to read the windshear warning to the pilot. This trend is repeated when the missed approach and holding instructions are read aloud by the copilot in the data link implementation.

C.3.1.1.3 Verbal

Figure C-46 compares current NAS and data link verbal tasking. Tasking decreases are shown to correlate with data link implementation eliminating pilot communication with ATC, since the copilot assumes communication tasks in the data link scenario. Tasking decreases correlate with the request for missed approach (Task 1P16FB16) and the holding request.

C.3.1.1.4 Weighted Channel Average

Figure C-47 compares current NAS and data link weighted channel average tasking. Verbal and auditory tasking decreases are seen to outweigh internal vision increases, producing a net tasking decrease during the missed approach segment of the scenario.

C.3.1.2 Nonflying Pilot

The nonflying pilot (copilot) channels impacted significantly by data link implementation are internal vision (13.11% increase), left hand (4.52% increase), right hand (5.0% decrease), auditory (10.62% decrease), and verbal (3.22% increase). These effects, as seen in Table C-10, combine to produce a net weighted channel average tasking increase of 0.91%.

C.3.1.2.1 Internal Vision

Figure C-48 indicates internal vision tasking for data link and current NAS environments. A tasking overload condition is indicated due to data link during the initial portion of the missed approach segment of the scenario. This overload correlates with Procedure 16FB05, "Copilot Goaround Activities," and Procedure 15YL01, "Missed Approach Call and Request for Holding." Instrument scan and flap/gear monitoring overlap with downlink selection using the CDU, creating the overload. A tasking decrease is then indicated, followed by another tasking increase. This is due to a shift in copilot tasking based on reading the holding clearance on the CDU instead of writing down the clearance while listening to the VHF voice.

C.3.1.2.2 Left Hand

A significant tasking increase due to data link is evident in Figure C-49. This increase correlates with the copilot selecting and sending downlink messages advising of a missed approach and requesting holding.

C.3.1.2.3 Right Hand

Figure C-50 indicates comparative tasking effects for data link and VHF voice. A right hand tasking decrease due to data link is correlated with elimination of the task of writing down the ATC clearance on paper.

C.3.1.2.4 Auditory

Figure C-51 indicates comparative auditory tasking for data link and VHF voice. A significant auditory tasking decrease is evident where the ATC clearance to the holding fix is uplinked on data link rather than by VHF voice.

C.3.1.2.5 Verbal

A verbal tasking increase is indicated where the copilot reads the uplinked message out loud to the pilot in the data link implementation, as seen in Figure C-52. The significant tasking increase for the copilot using data link is primarily because the pilot handles the missed approach communications in the VHF voice case.

C.3.1.2.6 Weighted Channel Average

Figure C-53 shows the overall impact of the individual tasking effects. Internal vision and left hand increases initially combine to produce an increase in the weighted channel average. Internal vision, right hand, and auditory decreases then combine to produce a decrease in the average. Internal vision and verbal tasking increases then combine to again increase the weighted channel average.

C.3.2 Advanced Flight Deck

This section presents TLA results for both crew members in an advanced flight deck operating in both a current NAS and a data link environment. Significant results are that data link implementation reduces pilot left hand and right hand, auditory, and verbal channel tasking and increases pilot internal vision tasking. Data link impact on copilot tasking is primarily a tasking reduction for right hand and auditory channels, with some tasking increase for internal vision, left hand, cognition, and verbal channels.

C.3.2.1 Flying Pilot

As shown in Table C-11, significant tasking impacts based on average scenario values due to data link are in internal vision (2.62% increase), left hand (4.95% decrease), right hand (2.11% decrease), auditory (2.92% decrease), and verbal (2.53% decrease). When combined in a weighted channel average, a 1.24% net tasking decrease is indicated.

C.3.2.1.1 Internal Vision

Figure C-54 indicates comparative internal vision task loading in the advanced flight deck for current NAS and data link environments. The first two tasking increases correlate with monitoring of the information management display, Task 1D16XX09, which annunciates the uplinked windshear advisory and clearance to the holding fix. The remaining tasking increases correlate with monitoring of the FMC route update on the map display of the EHSI.

C.3.2.1.2 Left Hand

Figure C-55 indicates a significant reduction in pilot left hand tasking due to data link. Examination of the mission scenario, Appendix B, reveals that the new route to the holding fix must be manually input into the FMC by the copilot in the current NAS case, while the data link implementation allows the new route to be automatically transferred into the FMC. The decreased time needed to engage the new route in the FMC means less manual flight tasking for the pilot, producing this tasking decrease.

C.3.2.1.3 Right Hand

Figure C-56 indicates a tasking decrease for the right hand which is of a similar nature to that for the left hand tasking previously discussed. The lesser magnitude of tasking is indicative of throttle control for the right hand, as opposed to left hand for the control wheel.

C.3.2.1.4 Auditory

The alternating auditory decreases and increases shown in Figure C-57 are due to data link implementation shifting the pilot's auditive tasking from monitoring ATC on VHF voice to monitoring the copilot callouts of the uplinks.

C.3.2.1.5 Verbal

Figure C-58 indicates verbal tasking decreases provided by data link, shifting the task of calling ATC from the pilot using voice to the copilot using the data link CDU.

C.3.2.1.6 Weighted Channel Average

Figure C-59 indicates data link impact on weighted channel average tasking. Auditory and verbal tasking decreases outweigh internal vision tasking increases in the initial portion of the missed approach segment, producing a net weighted channel decrease. Left and right hand tasking decreases in the latter portion of the scenario continue the net tasking decrease.

C.3.2.2 Nonflying Pilot

As shown in Table C-12, significant tasking impacts due to data link, based on average scenario values, are in internal vision (8.9% increase), left hand (4.2% increase), right hand (10.3% decrease), cognition (2.0% increase), auditory (9.95% decrease), and verbal (3.15% increase). When combined in a weighted channel average, a net 0.29% tasking increase is indicated.

C.3.2.2.1 Internal Vision

Figure C-60 indicates comparative internal vision task loading in the advanced flight deck for current NAS and data link environments. A tasking overload condition is indicated due to data link during the initial portion of the missed approach segment of the scenario. As in the comparative task loading for the conventional flight deck, this overload correlates with Procedure 16FB05, "Copilot Goaround Activities," and Procedure 16YL01, "Missed Approach Call and Request for Holding." Instrument scan and flap/gear monitoring overlap with downlink selection using the CDU, creating the overload. A tasking decrease is then indicated, correlating with the elimination of the copilot writing down the clearance on paper. A second tasking decrease is then indicated, correlating with the automatic transfer of the new route clearance to the FMC. The data link implementation thus eliminates the copilot tasks of creating and entering a DIRECT-TO waypoint with the FMC CDU.

C.3.2.2.2 Left Hand

Figure C-61 indicates a significant tasking increase due to data link, which correlates with the copilot selecting and sending downlink messages advising of a missed approach and requesting holding. This effect is similar to that for the conventional flight deck.

C.3.2.2.3 Right Hand

Figure C-62 indicates a significant tasking decrease due to data link implementation. This tasking decrease is greater than that for the conventional flight deck which has no capability for lateral navigation without an FMC. The advanced flight deck in the VHF voice implementation incorporates a current technology type of FMC requiring manual route modifications via the CDU keypad. The data link implementation in the advanced flight deck, however, permits route modifications to be automatically

transferred from the data link system to the FMC, eliminating manual crew interface with the CDU. This produces the significant right hand tasking decrease as shown.

C.3.2.2.4 Cognition

Figure C-63 indicates comparative cognitive task loading. A large tasking increase is indicated due to data link at the end of the scenario. This is due to the fact that the VHF voice implementation requires the copilot to enter data into the CDU to modify the route. In the data link implementation, this task is eliminated, opening up a time window for the copilot to resume a scan of the instrument panel. The detailed mission scenario, Appendix B, shows that Procedure 180073, "Flight Instrument Scan," is tasked for the last 40 sec of the scenario in the advanced flight deck. This scan is at a higher level of cognitive loading than the CDU data entry in the conventional flight deck, producing a somewhat arbitrary tasking increase for the data link implementation.

C.3.2.2.5 Auditory

Figure C-64 indicates comparative auditory tasking. A significant tasking decrease, similar to that for the conventional flight deck, is evident where the windshear advisory and clearance to the holding fix is uplinked on data link instead of by VHF voice.

C.3.2.2.6 Verbal

Figure C-65 shows comparative verbal tasking for data link and VHF voice. As in the conventional flight deck case, two significant verbal tasking increases occur due to data link implementation requiring the copilot to read the uplinked messages to the pilot. The first increase correlates with the windshear advisory uplink and the second increase with the clearance to the holding fix.

C.3.2.2.7 Weighted Channel Average

Figure C-66 shows the overall impact of the individual tasking effects. Internal vision, left hand, and verbal tasking increases outweigh auditory tasking decreases to produce a net tasking decrease during the initial portion of the missed approach segment of the scenario. Internal vision, right hand, and auditory tasking decreases then combine to produce a net tasking decrease. A smaller net tasking increase is then produced primarily by increased verbal tasking, followed by a net decrease and then a net increase due to right hand and cognitive effects, respectively.

C.4 ILS APPROACH WITH TCAS ENCOUNTER

This section compares crew tasking based on a scenario having an evasive collision avoidance maneuver to crew tasking based on a normal ILS approach. The TLA results previously discussed in section C.1 are utilized as the baseline for comparison to the TCAS encounter tasking results. The rationale for this comparison is that previous TCAS research has disclosed the probability of a significant false alarm rate. Were such a false alarm to occur, the actual crew tasking increase would be in relation to the nominal crew tasking resulting from a scenario without any ATC intervention or other abnormalities. It should be noted that both scenarios utilize VHF voice communications, since TCAS implementation does not require a data link for pilot/controller communication.

C.4.1 Conventional Flight Deck

This section presents TLA results for both crew members in two conventional flight deck implementations; one which includes TCAS and one which excludes TCAS. The pilot tasking results which are most

significantly increased due to TCAS implementation are external vision, left hand, and auditory channels. Significant copilot tasking results increased due to TCAS are internal vision, cognition, and verbal channels.

C.4.1.1 Flying Pilot

As shown in Table C-13, tasking effects due to TCAS, which are based on average scenario values, are in external vision (2.3% increase), internal vision (0.85% increase), left hand (3.5% increase), right hand (1.5% increase), cognition (0.82% increase), and auditory (2.5% increase) tasking. When combined as a weighted channel average, a 2.03% tasking increase is indicated.

C.4.1.1.1 External Vision

Figure C-67 indicates comparative external vision tasking for a nominal ILS approach and a TCAS encounter. As seen in the figure and by reference to the detailed mission scenario in Appendix B, a large tasking increase is correlated with a pilot external vision scan. This scan begins after the TCAS caution alert which annunciates a traffic advisory, and continues through the resolution advisory until clear of traffic.

C.4.1.1.2 Internal Vision

Figure C-68 indicates comparative internal vision tasking for the nominal ILS approach and the TCAS encounter. This increase begins with the master caution visual alert annunciating the TCAS traffic advisory. Pilot monitoring of the TCAS traffic display then dominates the internal vision channel until annunciation of the resolution advisory, at which time the time critical climb warning on the IVSI is monitored.

C.4.1.1.3 Left Hand

Figure C-69 indicates the left hand tasking effects due to TCAS. The tasking increase shown correlates with Task 4A 29, "Actuate Flight Controls to Change Altitude," which occurs shortly after annunciation of the resolution advisory and continues until clear of traffic and the autopilot is re-engaged.

C.4.1.1.4 Right Hand

Figure C-70 indicates right hand tasking effects due to TCAS. Right hand tasking increases coincide with left hand increases due to Task 4A 29, although at a lower level. Task 4B 03, "Actuate Both Throttles," also contributes to this loading.

C.4.1.1.5 Cognitive

Figure C-71 indicates cognitive tasking effects due to TCAS. The tasking increase shown correlates with the TCAS resolution advisory and a pilot judgment task where the decision is made to respond to the resolution advisory. IVSI monitoring and TCAS traffic display monitoring also contribute to this tasking.

C.4.1.1.6 Auditory

Figure C-72 indicates auditory tasking increases due to TCAS. The highest tasking increase occurs near the resolution advisory when several copilot callouts are monitored as the copilot advises of the intruder's relative bearing and altitude. Other tasking increases correlate with a copilot callout when clear of traffic and when ATC advises to continue descent.

C.4.1.1.7 Weighted Channel Average

Figure C-73 indicates the combined effect of the individual channel increases. The peak tasking increase occurs about 5 sec after beginning to respond to the TCAS time critical climb warning, while actuating the flight controls, monitoring the IVSI, visually scanning outside, and monitoring the copilot callouts.

C.4.1.2 Nonflying Pilot

As shown in Table C-14, tasking effects due to TCAS averaged over the entire scenario are in internal vision (2.25% increase), right hand (0.87% increase), cognition (1.86% increase), auditory (1.46% increase), verbal (2.37% increase), and weighted channel average (2.13% increase).

C.4.1.2.1 Internal Vision

Figure C-74 indicates a significant tasking increase due to TCAS which continues throughout the TCAS encounter. Primary tasks contributing to this tasking increase are Task 1TC00004, "Monitoring TCAS Traffic Display," and Task 1TC00007, "Monitoring Time Critical IVSI Display." Monitoring caution and warning visual alerts and the visual alert display also contribute to this tasking increase.

C.4.1.2.2 Right Hand

Figure C-75 indicates right hand tasking increases due to TCAS. This increase correlates with the copilot calling ATC to advise of the TCAS evasive maneuver.

C.4.1.2.3 Cognitive

Figure C-76 indicates a cognitive tasking increase due to TCAS which continues throughout the TCAS encounter. Primary tasks contributing to this increase are TCAS traffic display and IVSI monitoring, as in the internal vision channel.

C.4.1.2.4 Auditory

Figure C-77 indicates the auditive tasking increases due to TCAS. Aural alert and pilot callout monitoring as well as ATC monitoring creates this increase.

C.4.1.2.5 Verbal

Figure C-78 indicates verbal tasking increases due to TCAS. Callouts of intruder bearing and altitude, as well as communication with ATC, create this tasking increase.

C.4.1.2.6 Weighted Channel Average

Figure C-79 indicates the combined effect of the individual channel increases. The peak tasking increase occurs approximately 5 sec after the evasive maneuver is begun, while monitoring the TCAS traffic display, making callouts, and monitoring the IVSI.

C.4.2 Advanced Flight Deck

This section presents TLA results for both crew members in two advanced flight deck implementations; one which includes TCAS and one which excludes TCAS.

C.4.2.1 Flying Pilot

Figure C-80 through Figure C-86 indicate pilot tasking effects due to TCAS. Note that each channel tasking increase is very similar to the results of section C.4.1.1 for the conventional flight deck. These tasking increases are summarized in Table C-15.

C.4.2.2 Nonflying Pilot

Figure C-87 through Figure C-92 indicate copilot tasking effects due to TCAS. Note that each channel tasking increase is very similar to the results of section C.4.1.2 for the conventional flight deck. These tasking increases are summarized in Table C-16.

Table C-1. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO

CONVENTIONAL FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	8.06	8.06	0.0
INTERNAL VISION	44.46	46.01	1.55
LEFT HAND	41.12	41.12	0.0
RIGHT HAND	19.10	19.10	0.0
COGNITION	50.04	50.00	-.04
AUDITORY	12.37	10.47	-1.90
VERBAL	.89	.89	0.0
WEIGHTED AVERAGE	33.63	33.53	-.10

Table C-2. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	8.20	6.26	-1.94
INTERNAL VISION	28.23	38.80	10.57
LEFT HAND	8.75	12.24	3.49
RIGHT HAND	6.88	2.09	-4.79
COGNITION	16.25	16.31	.06
AUDITORY	9.82	2.48	-7.34
VERBAL	7.96	9.04	1.08
WEIGHTED AVERAGE	18.59	19.12	.53

Table C-3. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO

ADVANCED FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	3.03	3.03	0.0
INTERNAL VISION	48.67	50.38	1.71
LEFT HAND	1.07	1.07	0.0
RIGHT HAND	2.92	2.85	-.07
COGNITION	44.79	44.70	-.09
AUDITORY	12.30	10.39	-1.91
VERBAL	.75	.75	0.0
WEIGHTED AVERAGE	27.63	27.56	-.07

Table C-4. Impact On Average Channel Activity Due To Data Link Implementation

NORMAL ILS APPROACH SCENARIO

ADVANCED FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	7.35	5.90	-1.45
INTERNAL VISION	28.00	38.57	10.57
LEFT HAND	8.75	12.24	3.49
RIGHT HAND	6.88	2.09	-4.79
COGNITION	15.54	15.70	.16
AUDITORY	9.63	2.28	-7.35
VERBAL	7.86	8.94	1.08
WEIGHTED AVERAGE	18.07	18.74	.67

Table C-5. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION

CONVENTIONAL FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	8.18	8.18	0.0
INTERNAL VISION	43.63	45.38	1.75
LEFT HAND	42.09	42.09	0.0
RIGHT HAND	19.67	19.67	0.0
COGNITION	49.47	49.45	-.02
AUDITORY	13.73	11.79	-1.94
VERBAL	0.89	0.89	0.0
WEIGHTED AVERAGE	33.75	33.69	-.06

Table C-6. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	7.84	5.90	-1.94
INTERNAL VISION	28.40	41.73	13.33
LEFT HAND	8.75	13.82	5.07
RIGHT HAND	8.26	2.09	-6.17
COGNITION	16.52	16.66	.14
AUDITORY	11.18	2.63	-8.55
VERBAL	9.37	10.20	.83
WEIGHTED AVERAGE	19.39	20.27	.88

Table C-7. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION

ADVANCED FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	3.03	3.03	0.0
INTERNAL VISION	47.07	50.57	3.50
LEFT HAND	1.07	1.07	0.0
RIGHT HAND	2.92	2.85	-.07
COGNITION	43.22	44.85	1.63
AUDITORY	13.66	11.71	-1.95
VERBAL	.75	.75	0.0
WEIGHTED AVERAGE	27.18	27.97	.79

Table C-8. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH WEATHER DEVIATION

ADVANCED FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	6.99	5.53	-1.46
INTERNAL VISION	28.17	41.50	13.33
LEFT HAND	8.75	13.82	5.07
RIGHT HAND	8.26	2.09	-6.17
COGNITION	15.81	16.05	.24
AUDITORY	10.99	2.44	-8.55
VERBAL	9.27	10.11	.84
WEIGHTED AVERAGE	18.87	19.90	1.03

Table C-9. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE

CONVENTIONAL FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	2.76	2.73	-.03
INTERNAL VISION	42.97	44.19	1.22
LEFT HAND	40.00	39.58	-.42
RIGHT HAND	18.41	18.21	-.20
COGNITION	47.03	46.13	-.90
AUDITORY	16.36	13.11	-3.25
VERBAL	4.62	1.92	-2.70
WEIGHTED AVERAGE	32.09	30.63	-1.46

Table C-10. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	6.92	5.03	-1.89
INTERNAL VISION	30.13	43.24	13.11
LEFT HAND	10.38	14.90	4.52
RIGHT HAND	7.52	2.52	-5.00
COGNITION	15.41	15.35	-.06
AUDITORY	14.03	3.41	-10.62
VERBAL	8.73	11.95	3.22
WEIGHTED AVERAGE	19.92	20.83	.91

Table C-11. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE

ADVANCED FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	.99	.99	0.0
INTERNAL VISION	47.06	49.68	2.62
LEFT HAND	10.89	5.94	-4.95
RIGHT HAND	8.15	6.04	-2.11
COGNITION	44.04	43.68	-.36
AUDITORY	15.31	12.39	-2.92
VERBAL	4.20	1.67	-2.53
WEIGHTED AVERAGE	29.09	27.85	-1.24

Table C-12. Impact On Average Channel Activity Due To Data Link Implementation

ILS MISSED APPROACH WITH RE-ROUTE

ADVANCED FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	6.76	5.27	-1.49
INTERNAL VISION	33.06	41.97	8.91
LEFT HAND	9.76	13.99	4.23
RIGHT HAND	12.71	2.40	-10.31
COGNITION	13.66	15.71	2.05
AUDITORY	12.99	3.04	-9.95
VERBAL	8.11	11.26	3.15
WEIGHTED AVERAGE	20.05	20.34	.29

Table C-13. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER

CONVENTIONAL FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	8.06	10.39	2.33
INTERNAL VISION	44.46	45.31	.85
LEFT HAND	41.12	44.61	3.49
RIGHT HAND	19.10	20.58	1.48
COGNITION	50.04	50.86	.82
AUDITORY	12.37	14.84	2.47
VERBAL	0.89	1.28	.39
WEIGHTED AVERAGE	33.63	35.66	2.03

Table C-14. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER

CONVENTIONAL FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	8.20	8.45	.25
INTERNAL VISION	28.23	30.48	2.25
LEFT HAND	8.75	9.02	.27
RIGHT HAND	6.88	7.85	.97
COGNITION	16.25	18.11	1.86
AUDITORY	9.82	11.28	1.46
VERBAL	7.96	10.33	2.37
WEIGHTED AVERAGE	18.59	20.72	2.13

Table C-15. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER

ADVANCED FLIGHT DECK

FLYING PILOT
(LEFT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	3.03	5.36	2.33
INTERNAL VISION	48.67	49.52	.85
LEFT HAND	1.07	4.57	3.50
RIGHT HAND	2.92	4.72	1.80
COGNITION	44.79	45.61	.82
AUDITORY	12.30	14.77	2.47
VERBAL	.75	1.14	.39
WEIGHTED AVERAGE	27.63	29.68	2.05

Table C-16. Impact On Average Channel Activity Due To Data Link Implementation

ILS APPROACH WITH TCAS ENCOUNTER

ADVANCED FLIGHT DECK

NON-FLYING PILOT
(RIGHT SEAT)

CHANNEL	PERCENT TASKING AVERAGED OVER ENTIRE SCENARIO		PERCENT INCREASE (DECREASE)
	CURRENT NAS VHF VOICE	MODE-S DATA LINK	
EXTERNAL VISION	7.35	7.60	.25
INTERNAL VISION	28.00	30.25	2.25
LEFT HAND	8.75	9.02	.27
RIGHT HAND	6.88	7.85	.97
COGNITION	15.54	17.41	1.87
AUDITORY	9.63	11.09	1.46
VERBAL	7.86	10.23	2.37
WEIGHTED AVERAGE	18.07	20.20	2.13

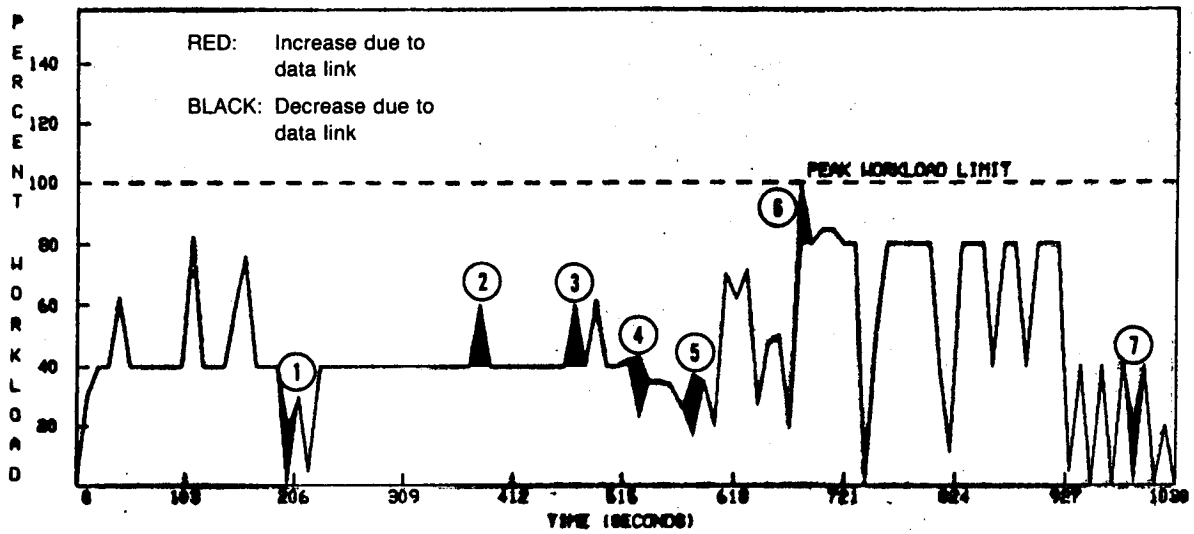

Figure C-1. Conventional Flight Deck, Pilot Tasking, Internal Vision Channel Normal ILS Approach

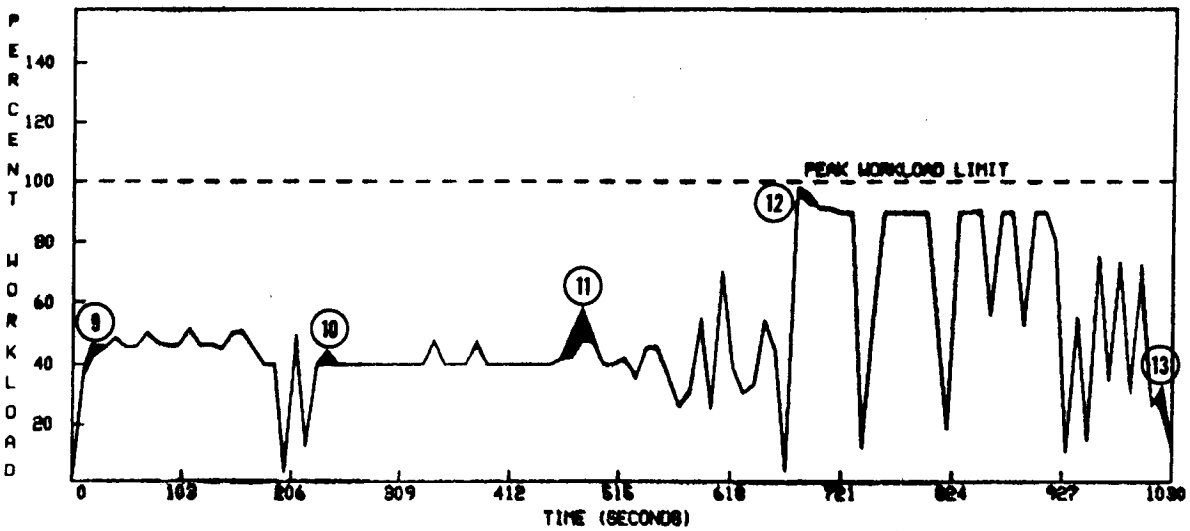

Figure C-2. Conventional Flight Deck, Pilot Tasking, Cognitive Channel Normal ILS Approach

Note: Circled numbers are referenced on pages C3 and C4.

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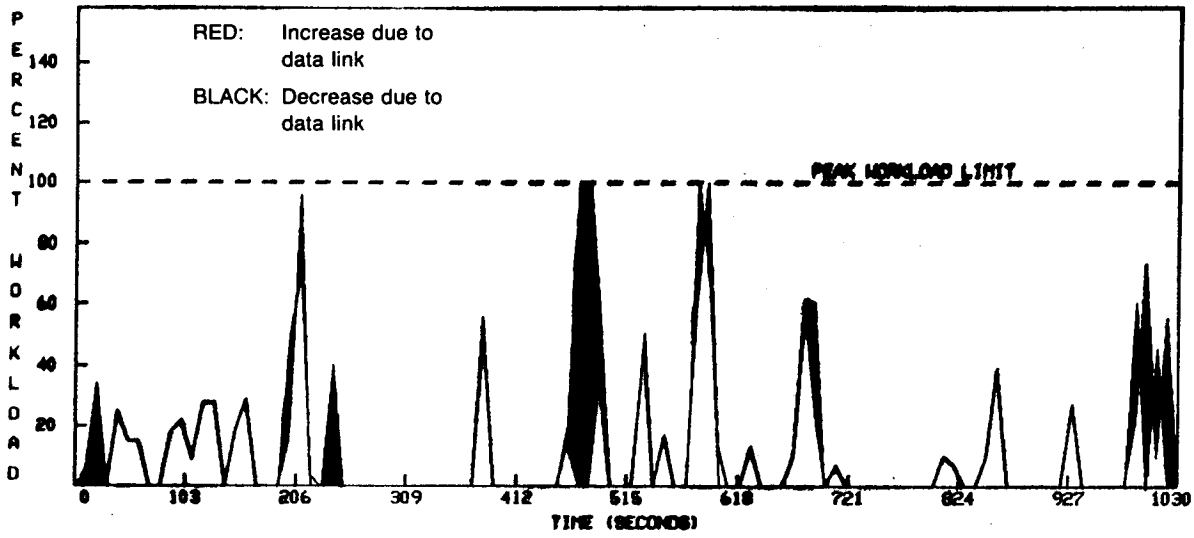

Figure C-3. Conventional Flight Deck, Pilot Tasking, Auditory Channel Normal ILS Approach

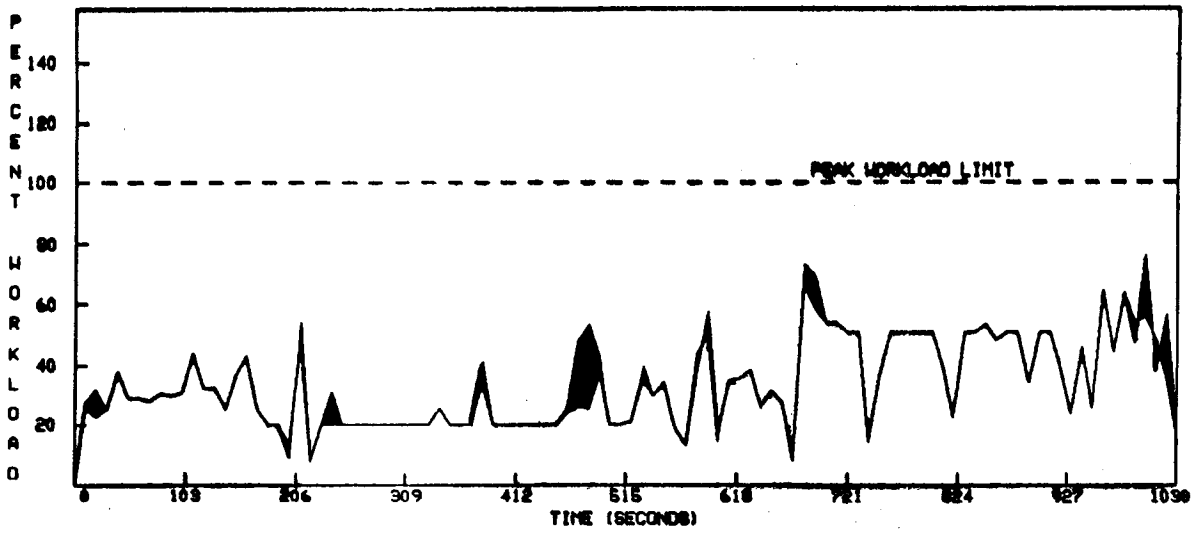

Figure C-4. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average Normal ILS Approach

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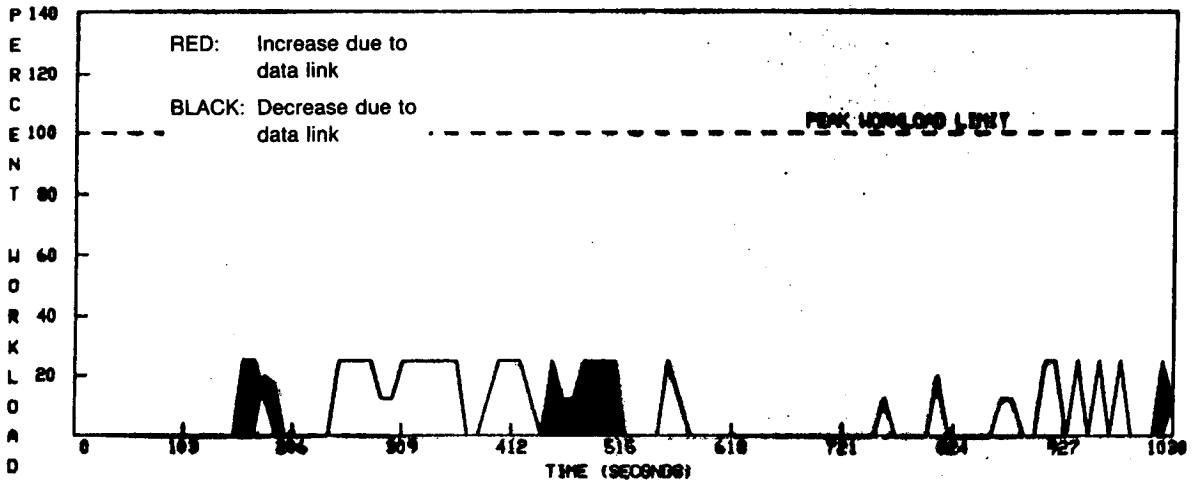

Figure C-5. Conventional Flight Deck, Copilot Tasking, External Vision Channel Normal ILS Approach

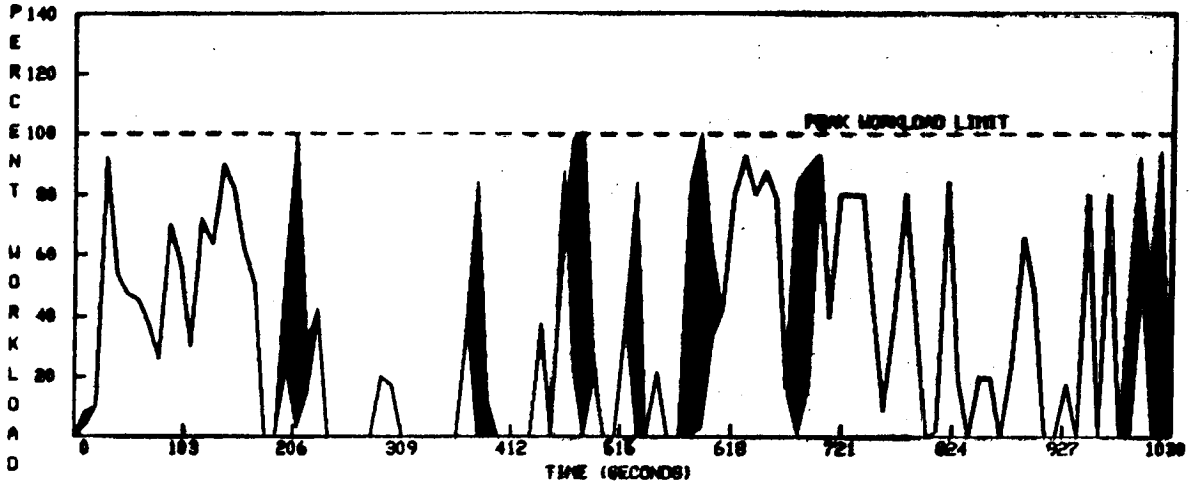

Figure C-6. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel Normal ILS Approach

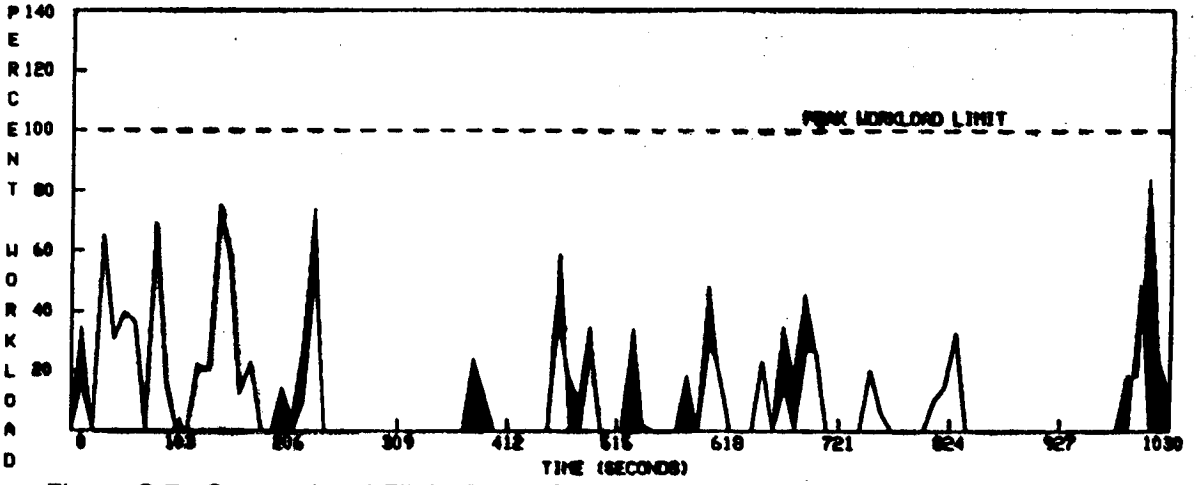

Figure C-7. Conventional Flight Deck, Copilot Tasking, Left Hand Channel Normal ILS Approach

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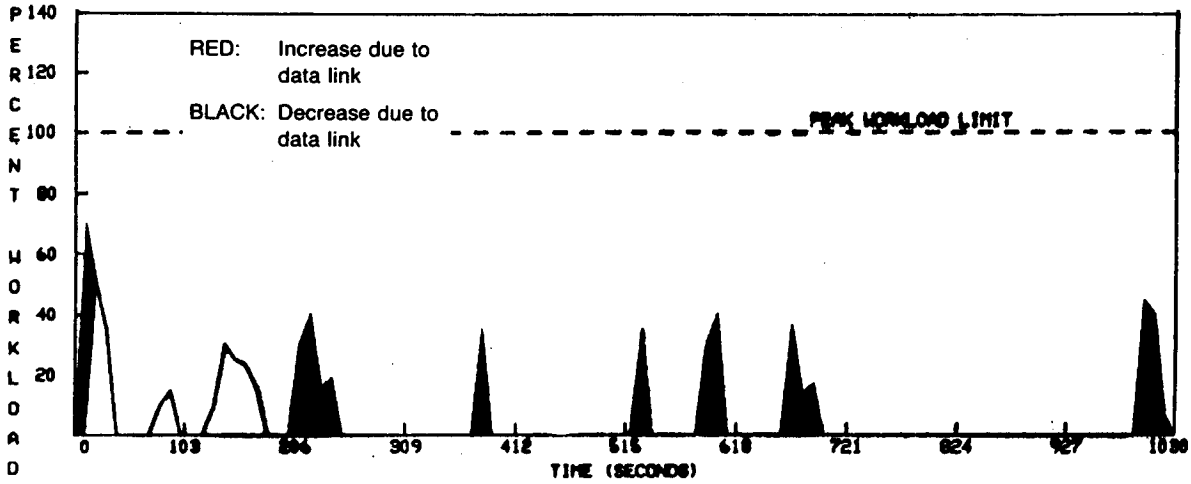

Figure C-8. Conventional Flight Deck, Copilot Tasking, Right Hand Channel Normal ILS Approach

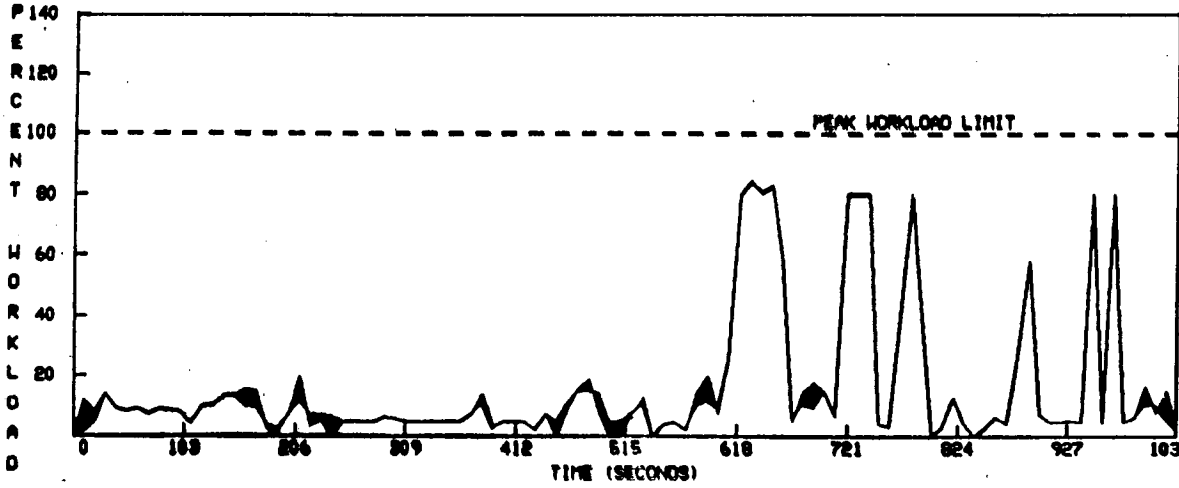

Figure C-9. Conventional Flight Deck, Copilot Tasking, Cognitive Channel Normal ILS Approach

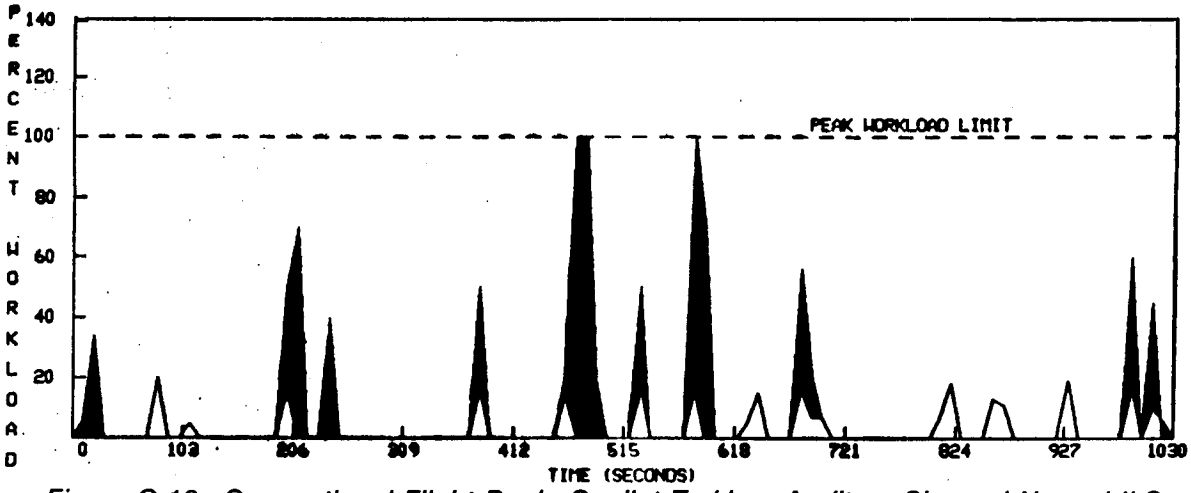

Figure C-10. Conventional Flight Deck, Copilot Tasking, Auditory Channel Normal ILS Approach

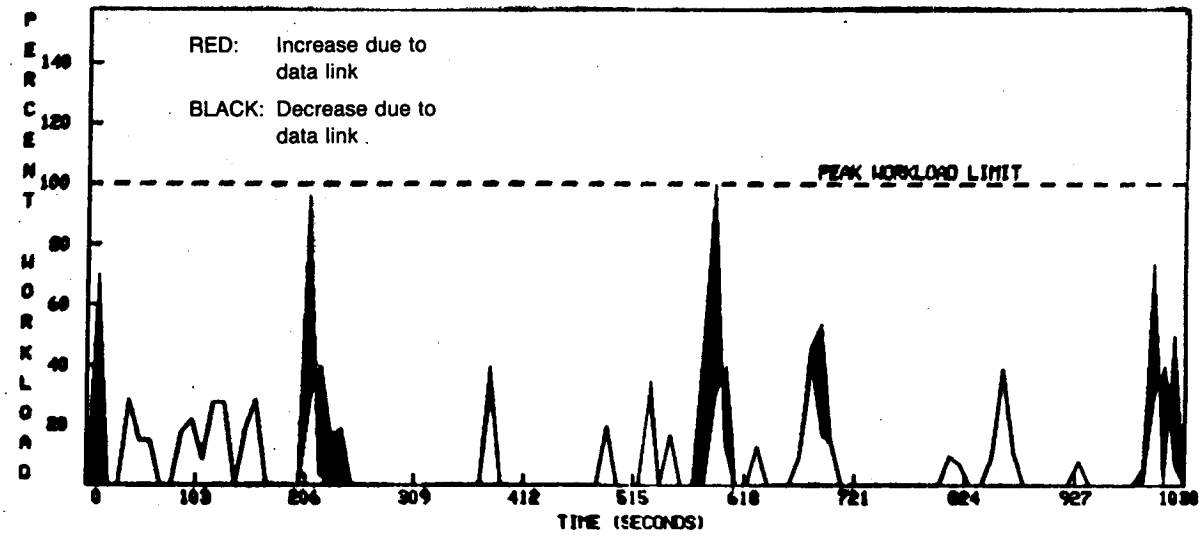

Figure C-11. Conventional Flight Deck, Copilot Tasking, Verbal Channel Normal ILS Approach

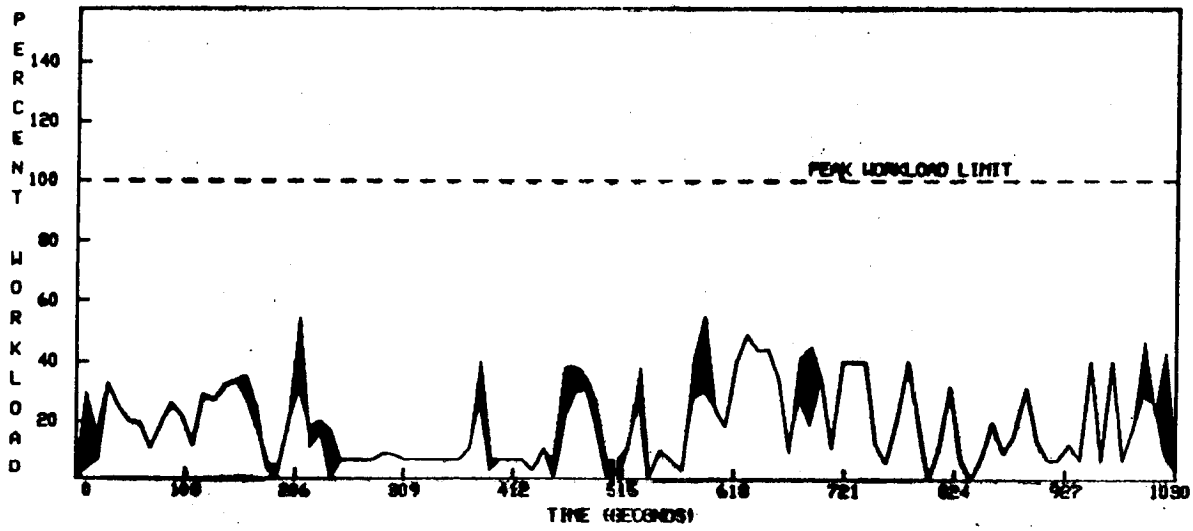

Figure C-12. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average Normal ILS Approach

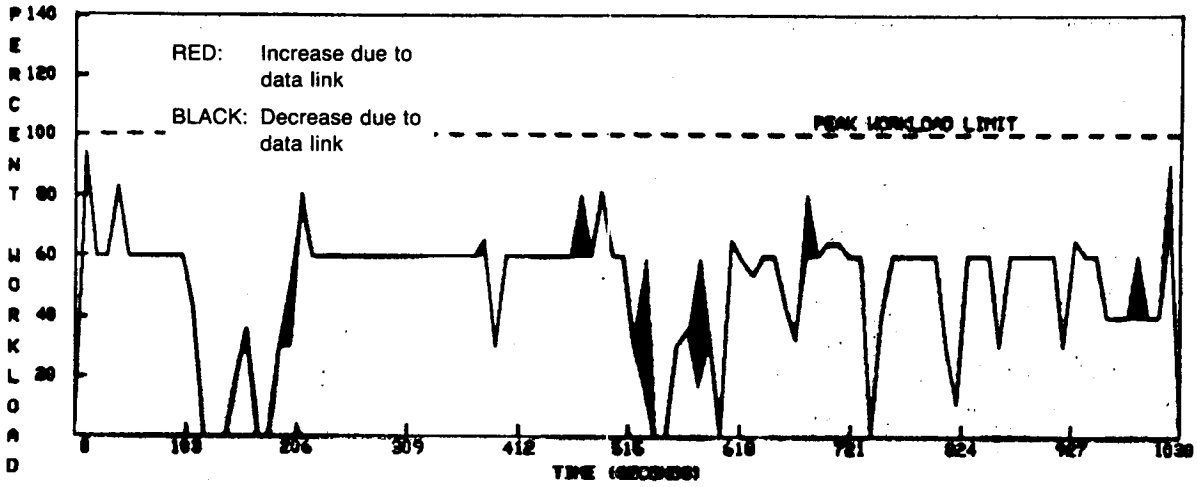

Figure C-13. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel Normal ILS Approach

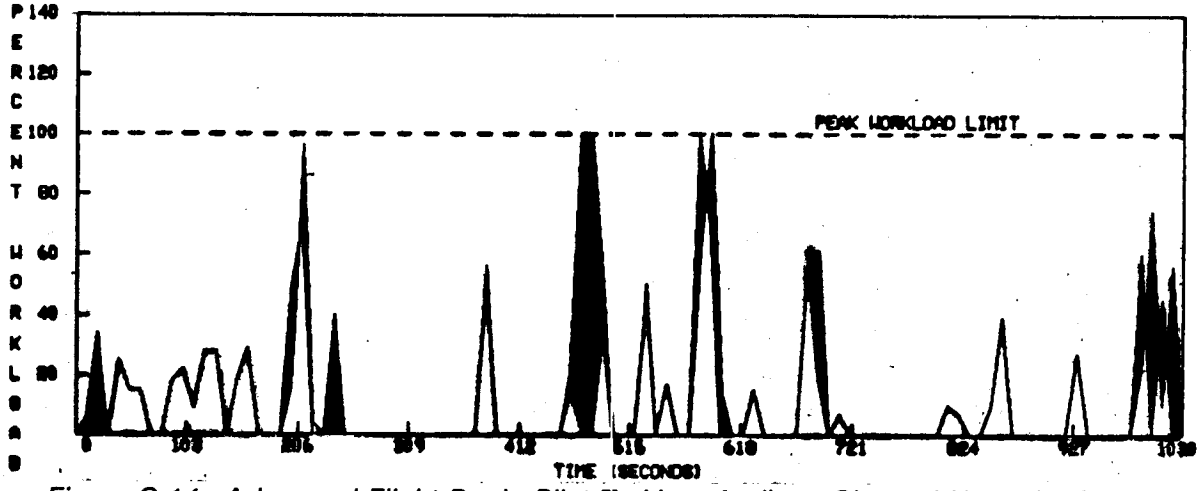

Figure C-14. Advanced Flight Deck, Pilot Tasking, Auditory Channel Normal ILS Approach

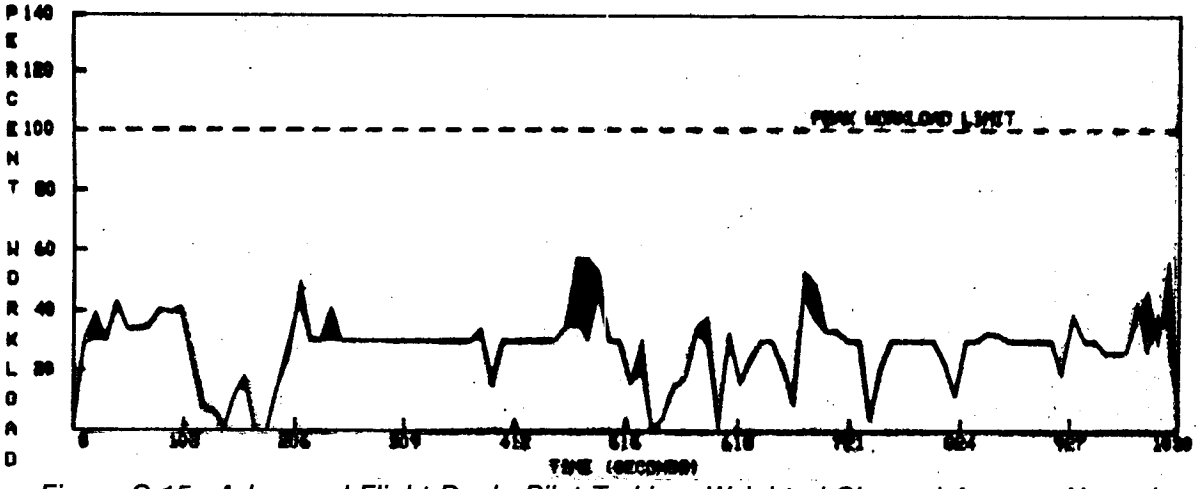

Figure C-15. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average Normal ILS Approach

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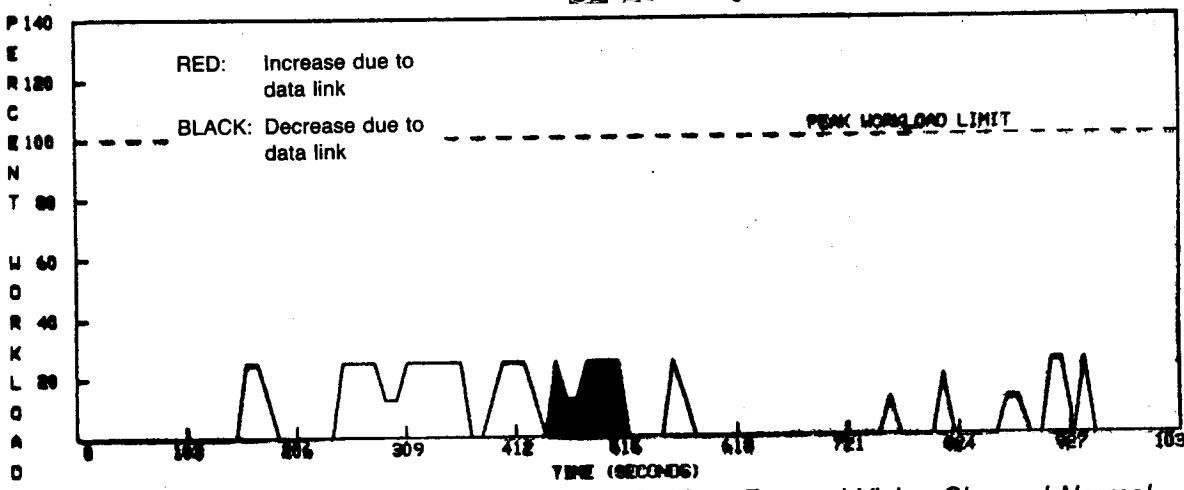

Figure C-16. Advanced Flight Deck, Copilot Tasking, External Vision Channel Normal ILS Approach

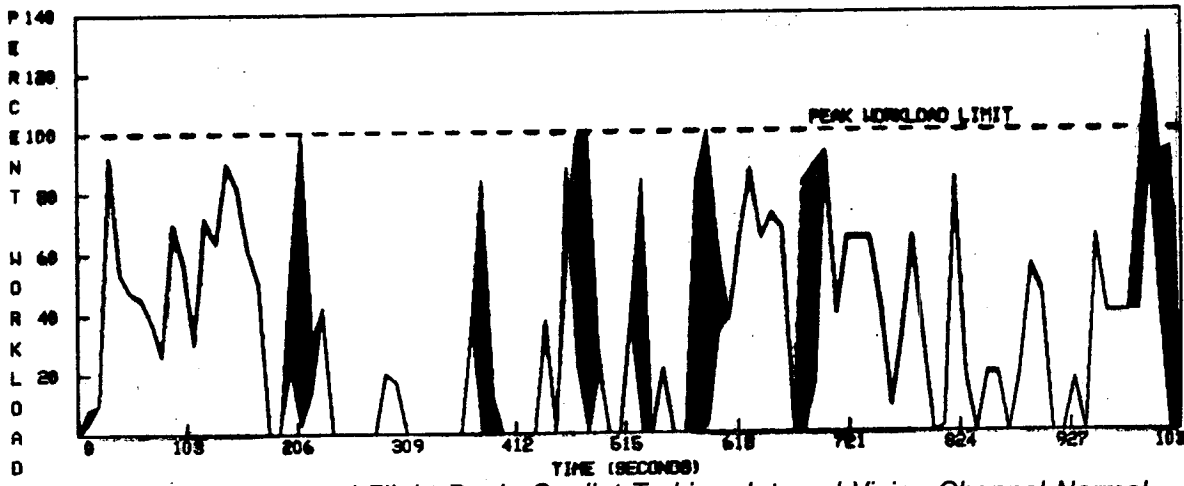

Figure C-17. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel Normal ILS Approach

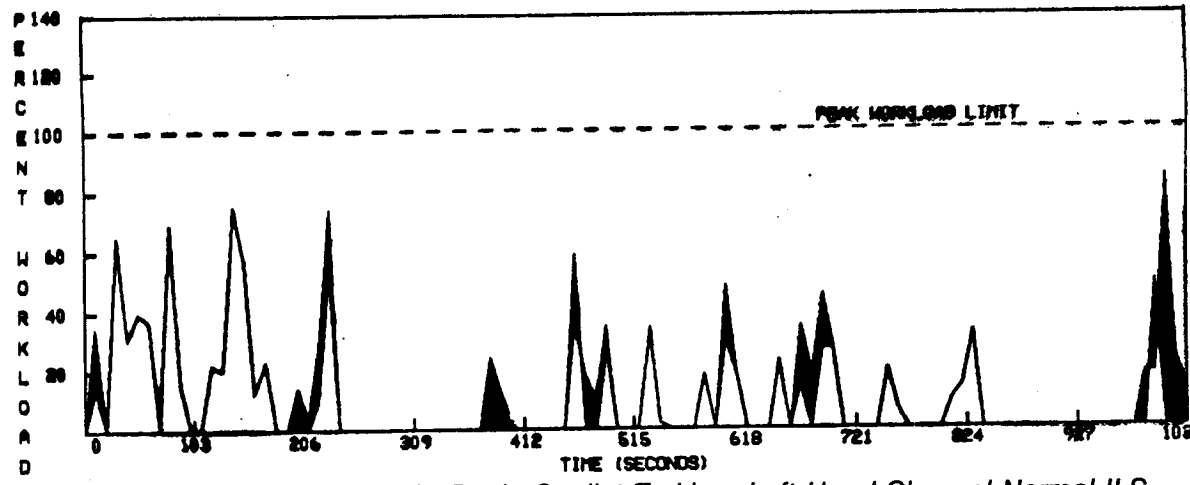

Figure C-18. Advanced Flight Deck, Copilot Tasking, Left Hand Channel Normal ILS Approach

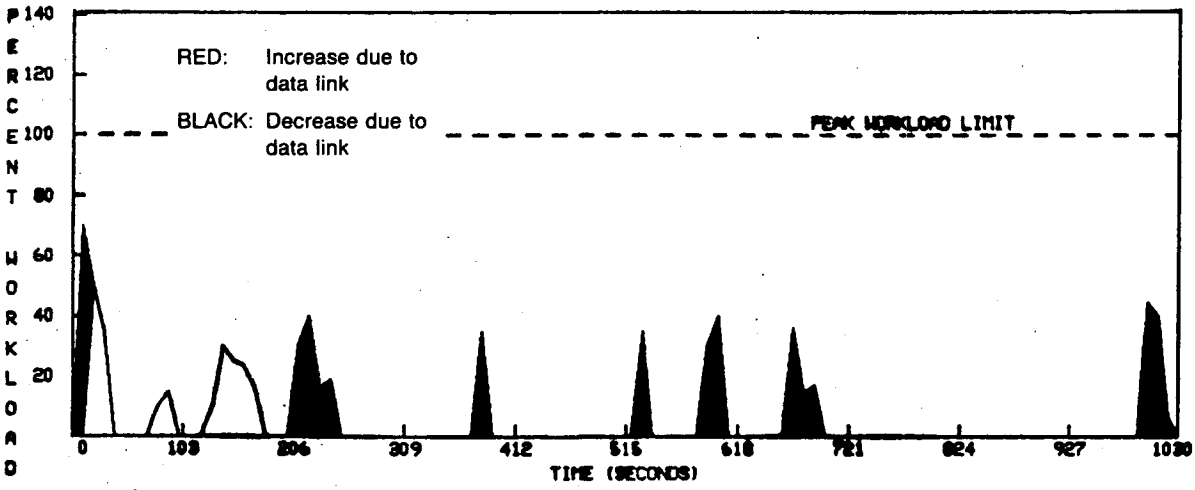

Figure C-19. Advanced Flight Deck, Copilot Tasking, Right Hand Channel Normal ILS Approach

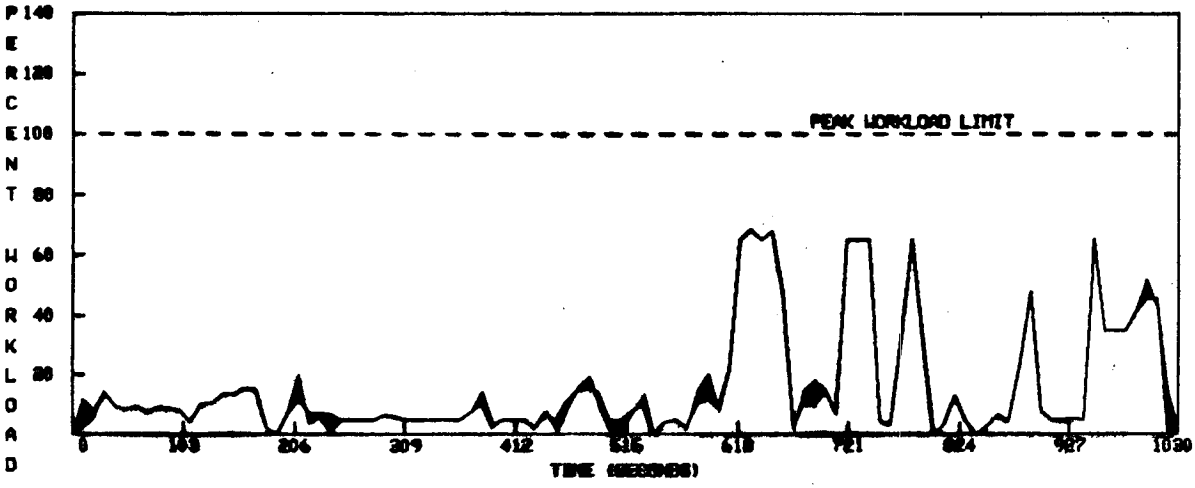

Figure C-20. Advanced Flight Deck, Copilot Tasking, Cognitive Channel Normal ILS Approach

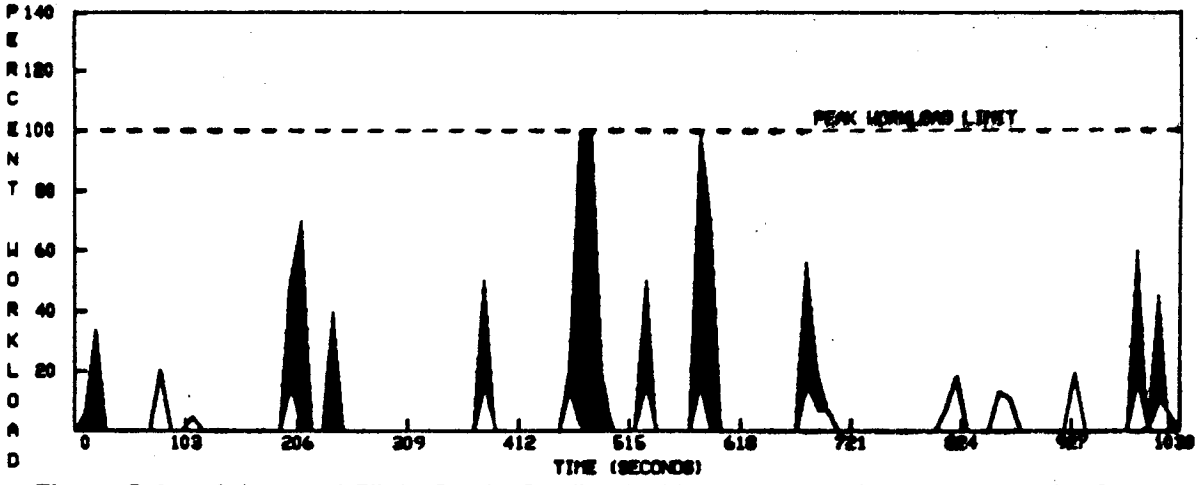

Figure C-21. Advanced Flight Deck, Copilot Tasking, Auditory Channel Normal ILS Approach

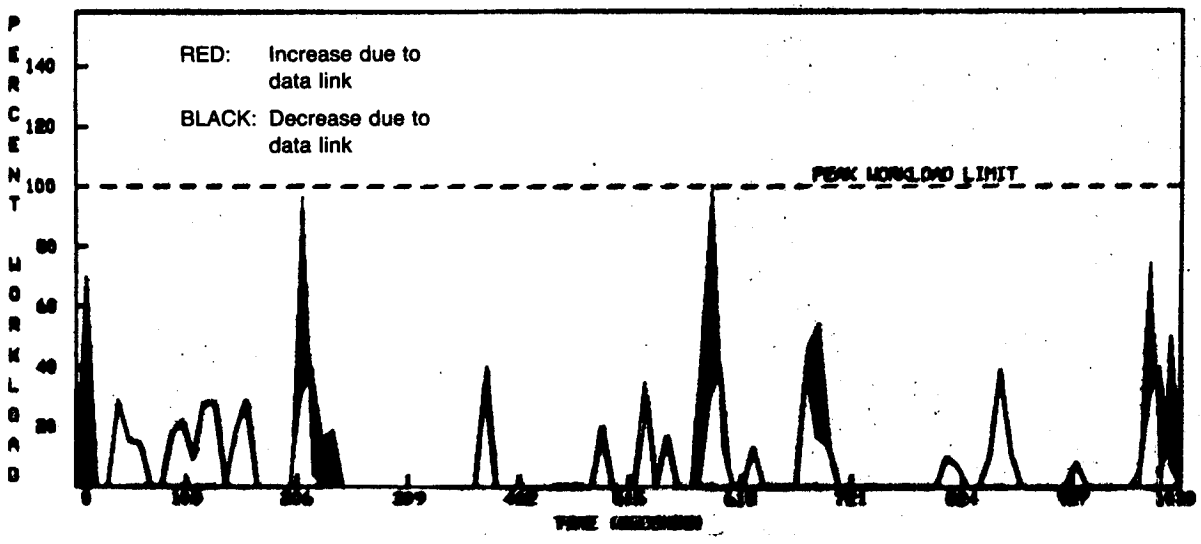

Figure C-22. Advanced Flight Deck, Copilot Tasking, Verbal Channel Normal ILS Approach

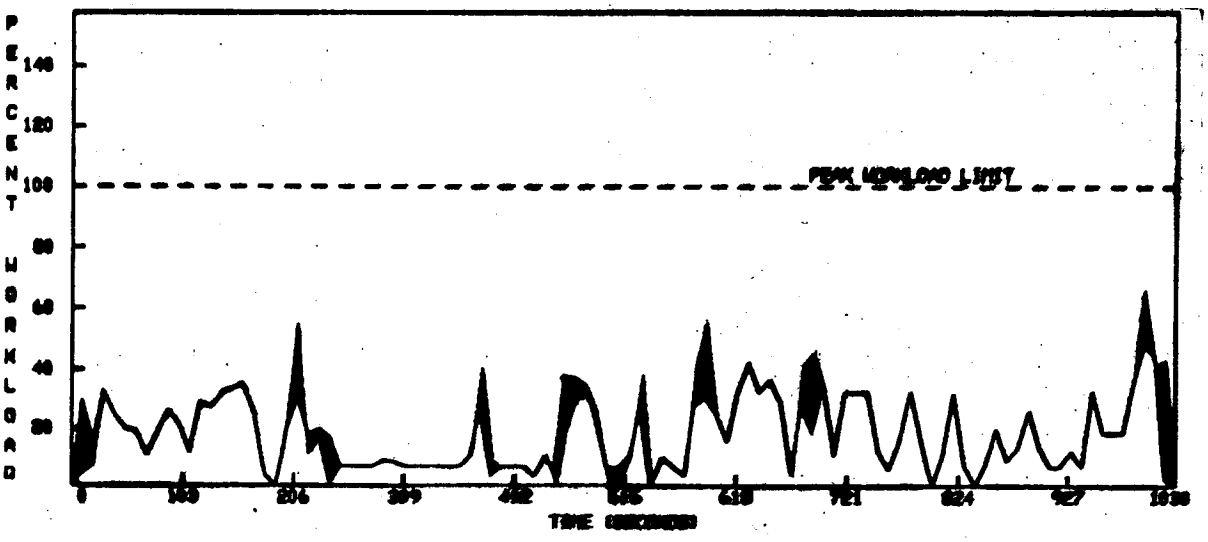

Figure C-23. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average Normal ILS Approach

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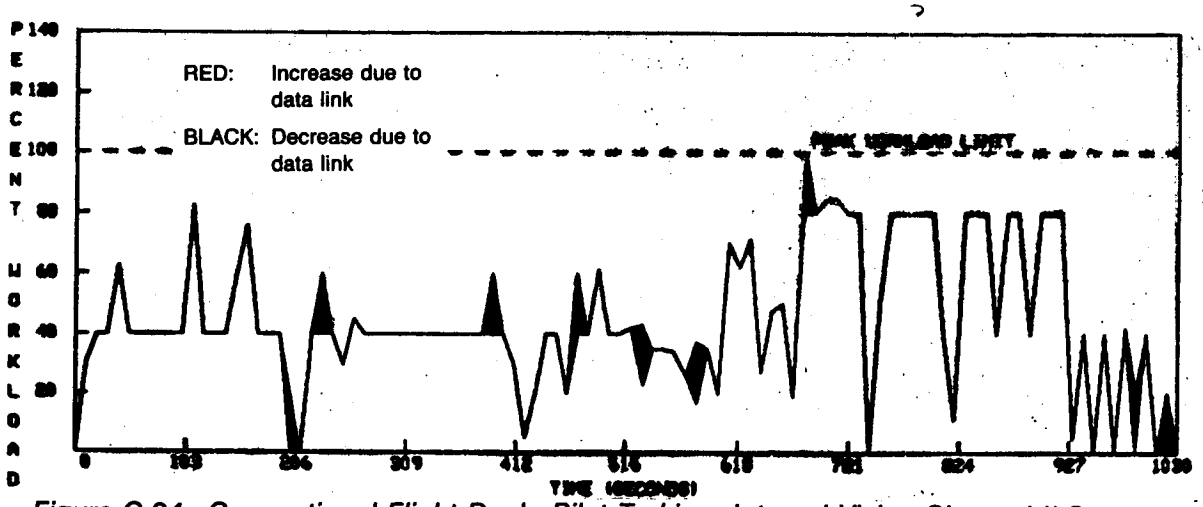

Figure C-24. Conventional Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

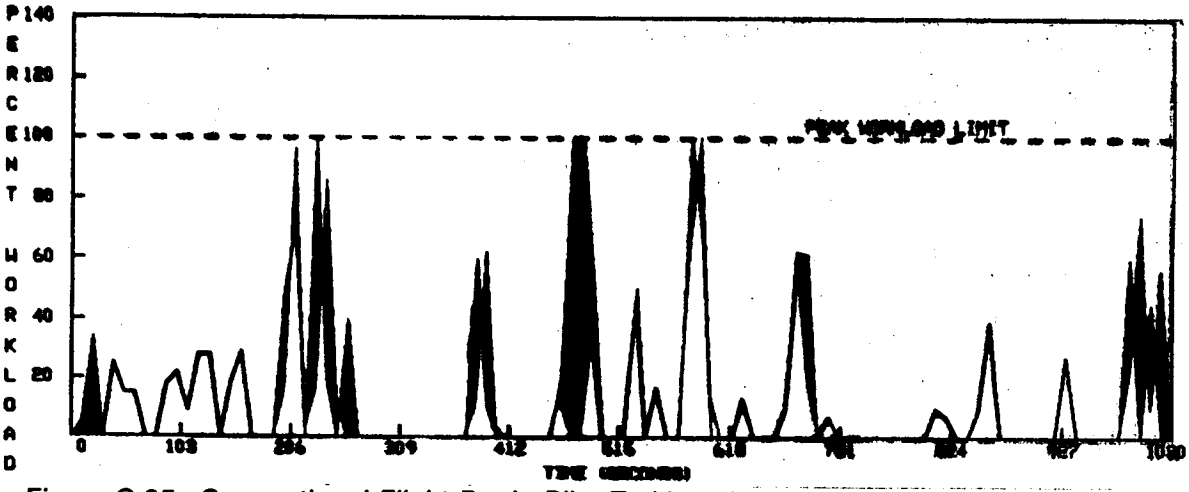

Figure C-25. Conventional Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With Weather Deviation

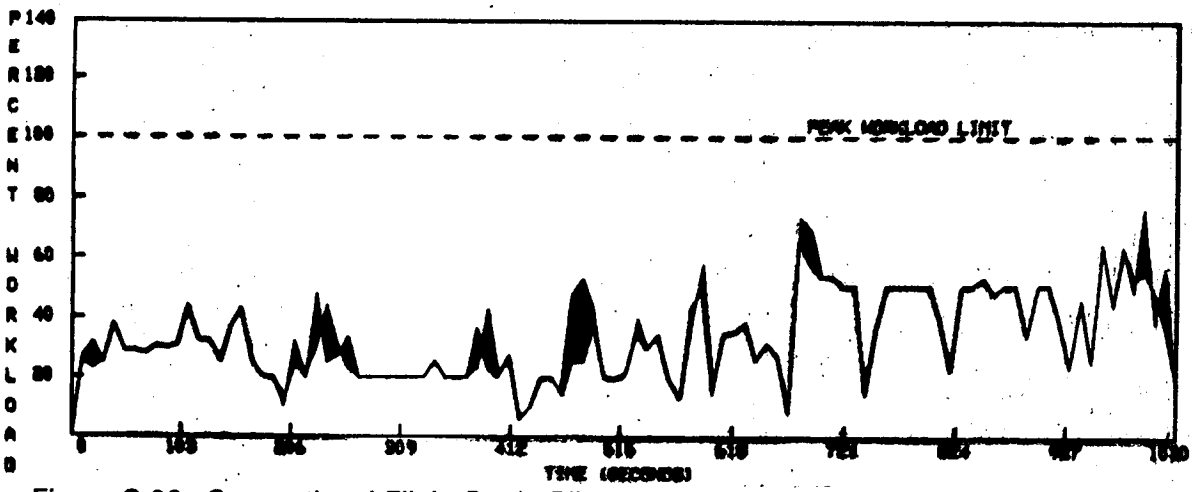

Figure C-26. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

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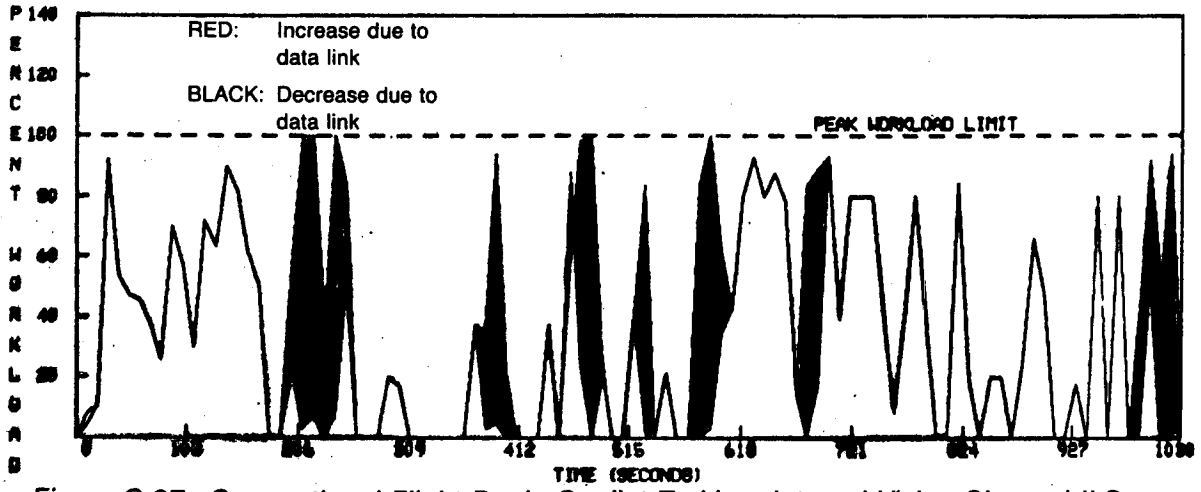

Figure C-27. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

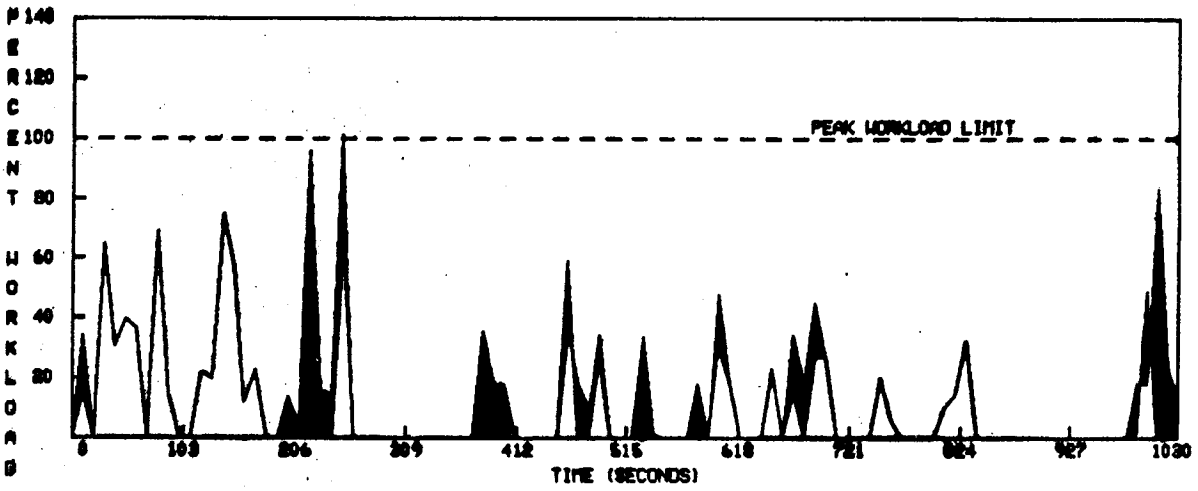

Figure C-28. Conventional Flight Deck, Copilot Tasking, Left Hand Channel ILS Approach With Weather Deviation

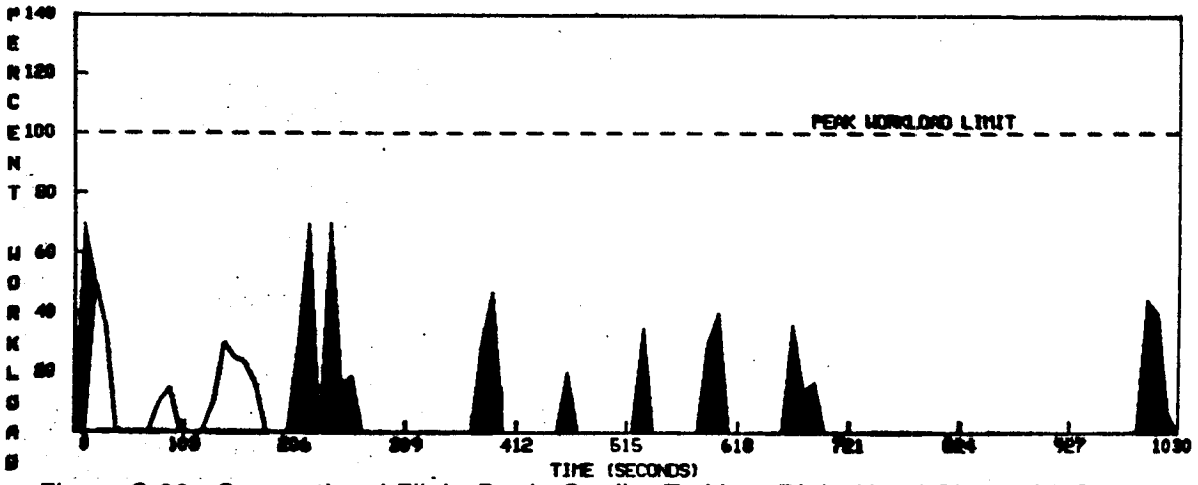

Figure C-29. Conventional Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With Weather Deviation

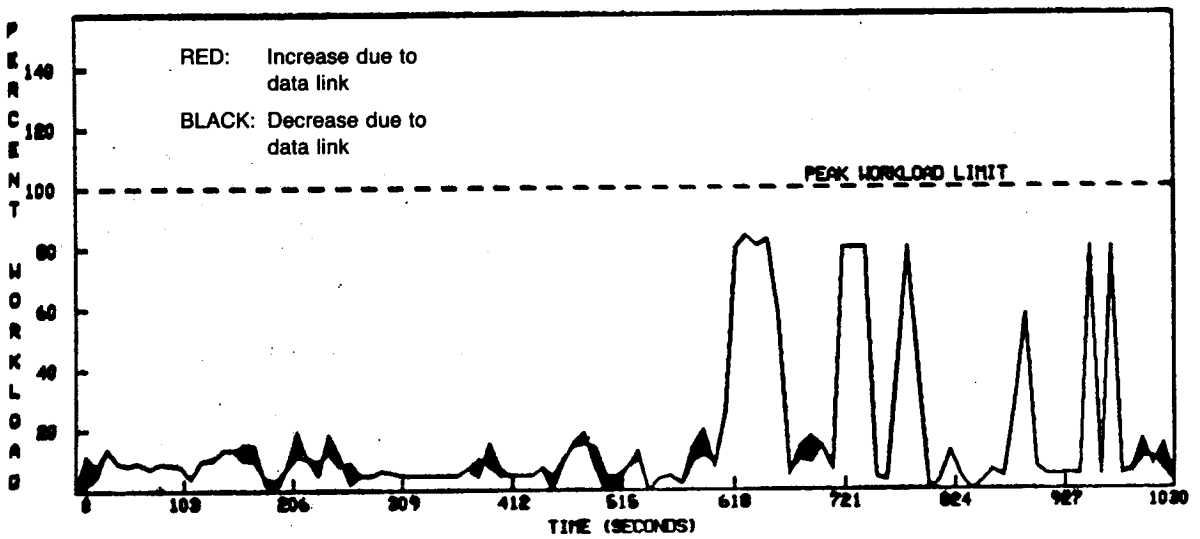

Figure C-30. Conventional Flight Deck, Copilot Tasking, Cognitive Channel ILS Approach With Weather Deviation

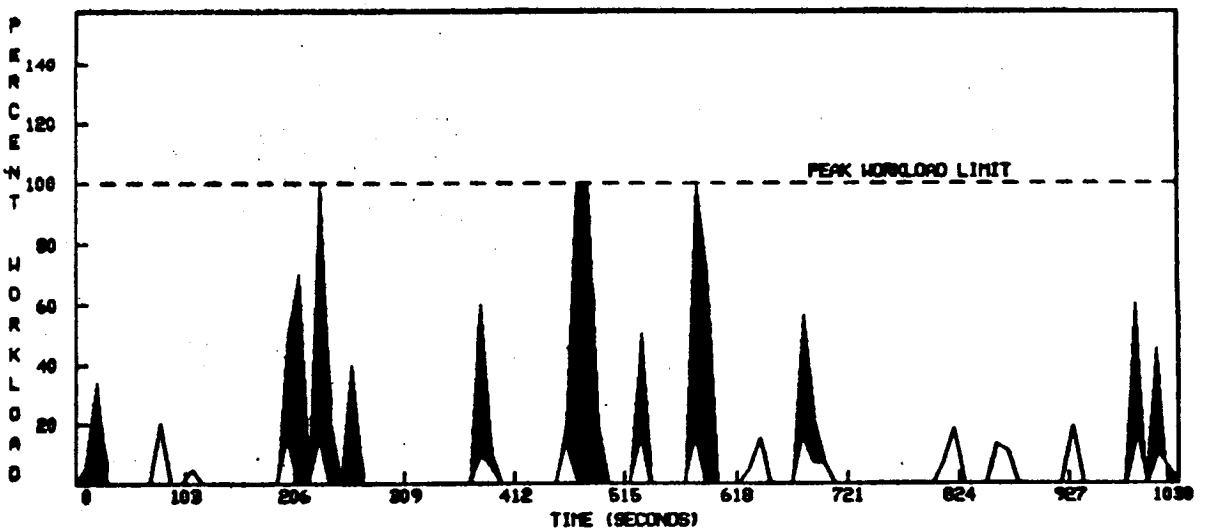

Figure C-31. Conventional Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With Weather Deviation

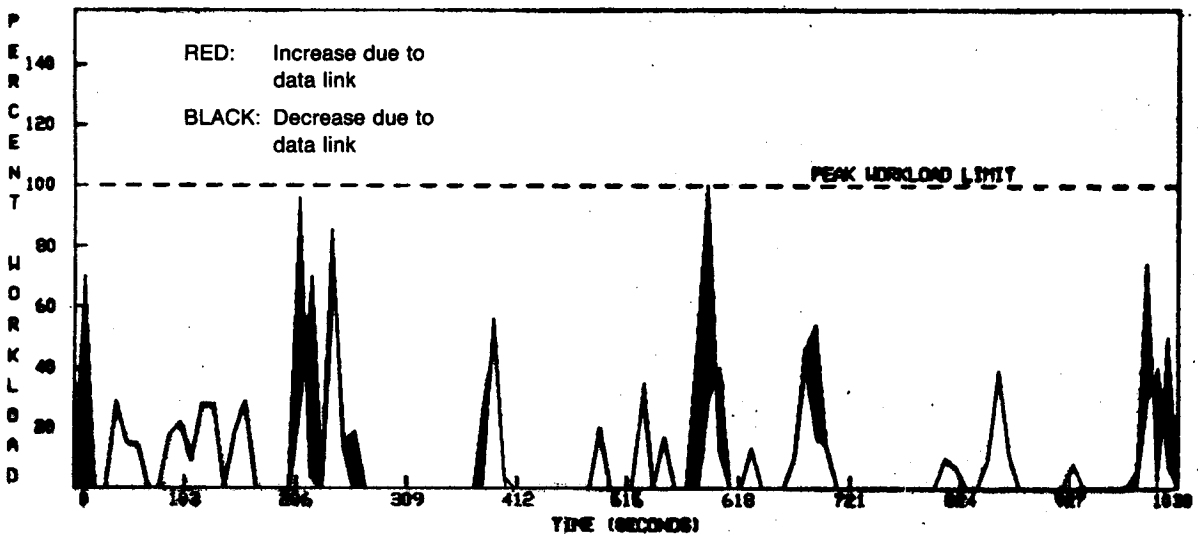

Figure C-32. Conventional Flight Deck, Copilot Tasking, Verbal Channel ILS Approach With Weather Deviation

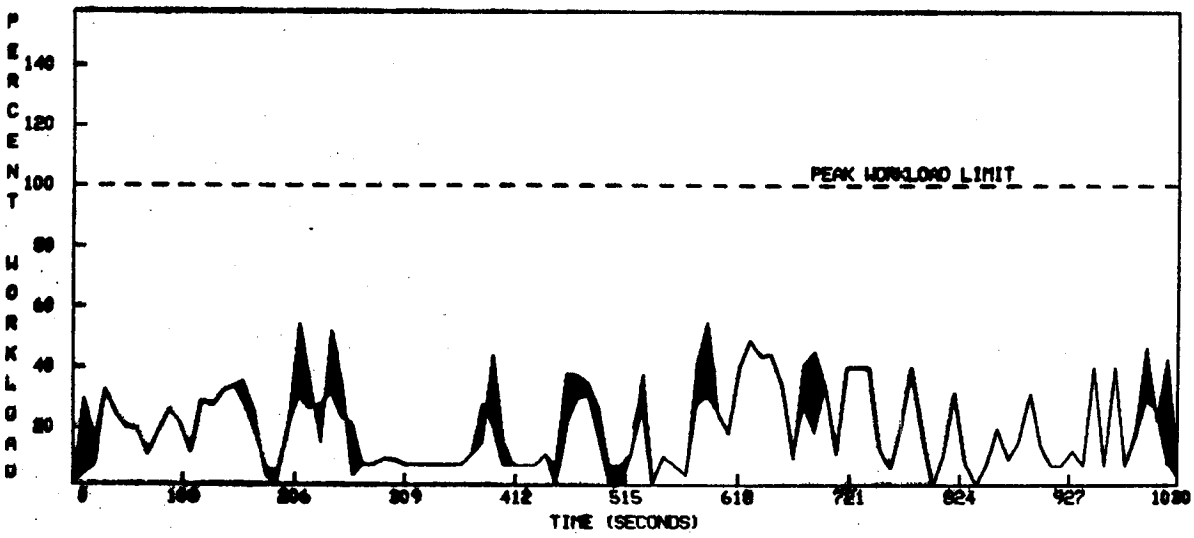

Figure C-33. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

C-4

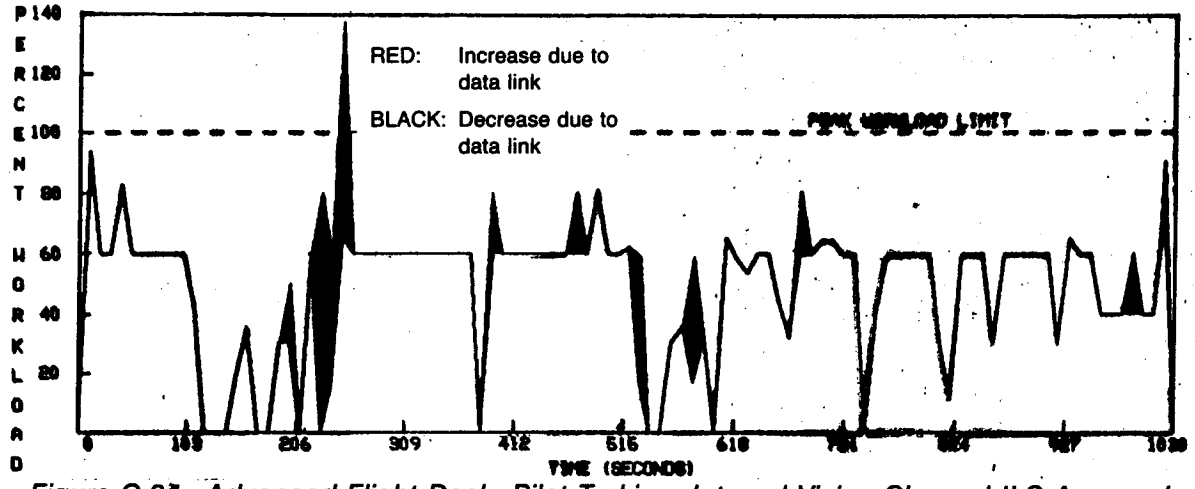

Figure C-34. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

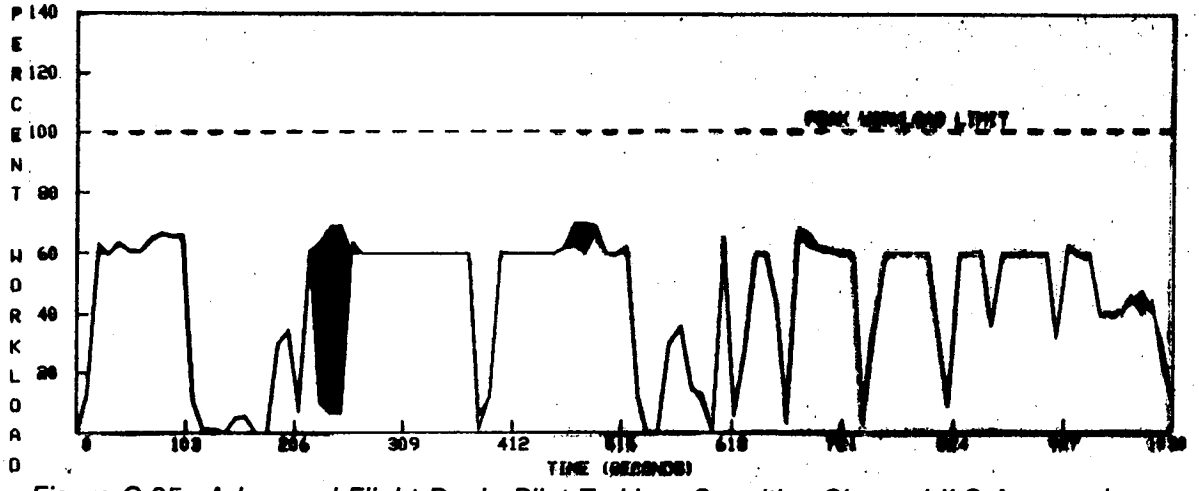

Figure C-35. Advanced Flight Deck, Pilot Tasking, Cognitive Channel ILS Approach With Weather Deviation

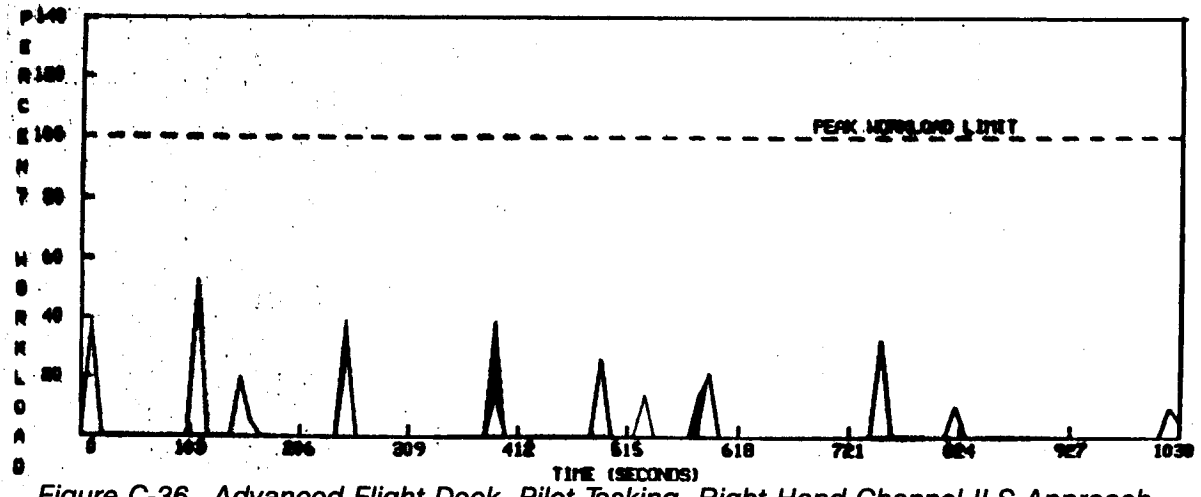

Figure C-36. Advanced Flight Deck, Pilot Tasking, Right Hand Channel ILS Approach With Weather Deviation

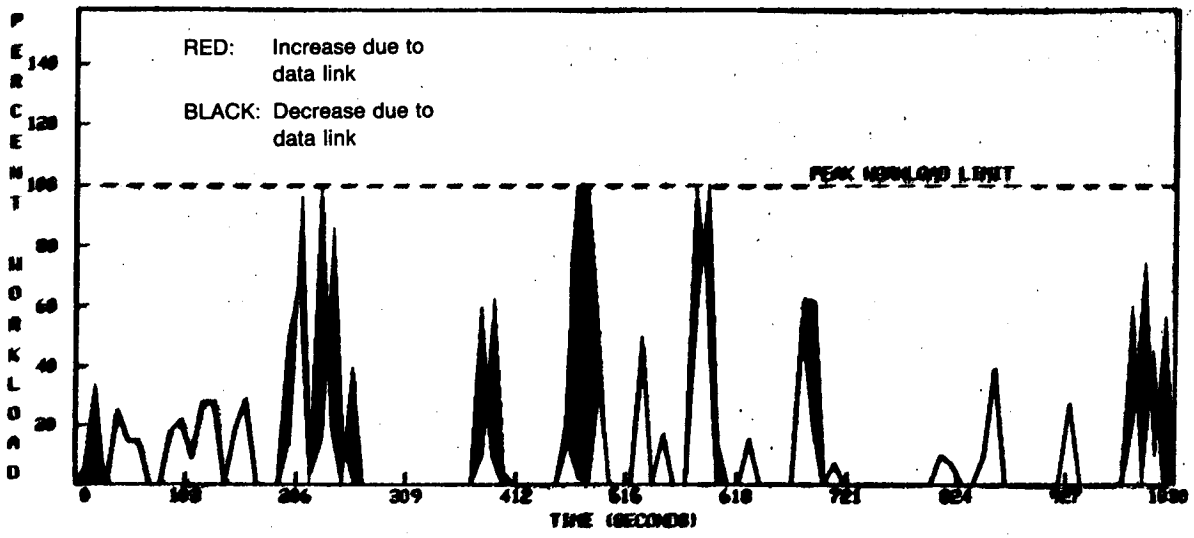

Figure C-37. Advanced Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With Weather Deviation

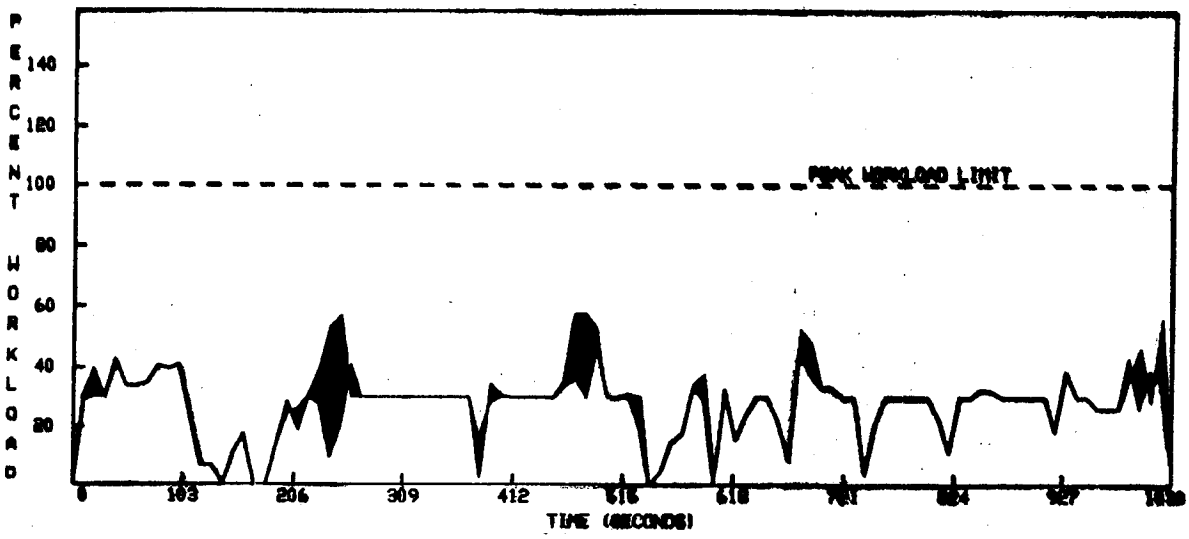

Figure C-38. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

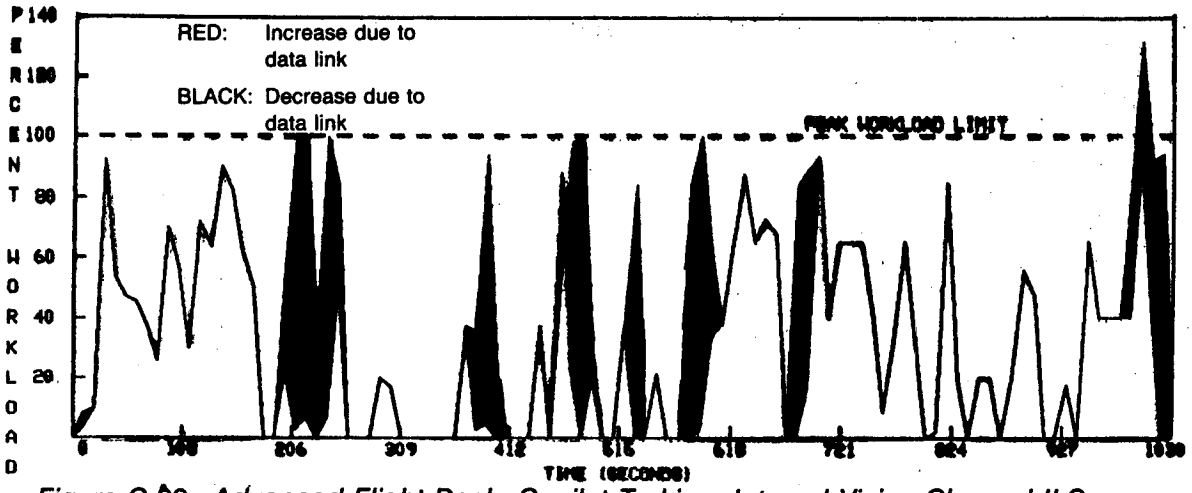

Figure C-39. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With Weather Deviation

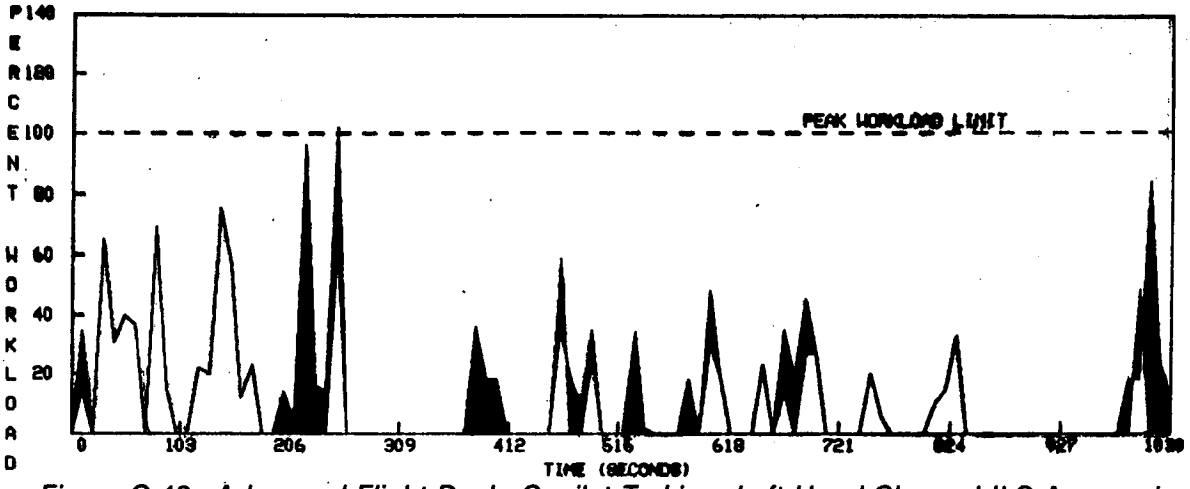

Figure C-40. Advanced Flight Deck, Copilot Tasking, Left Hand Channel ILS Approach With Weather Deviation

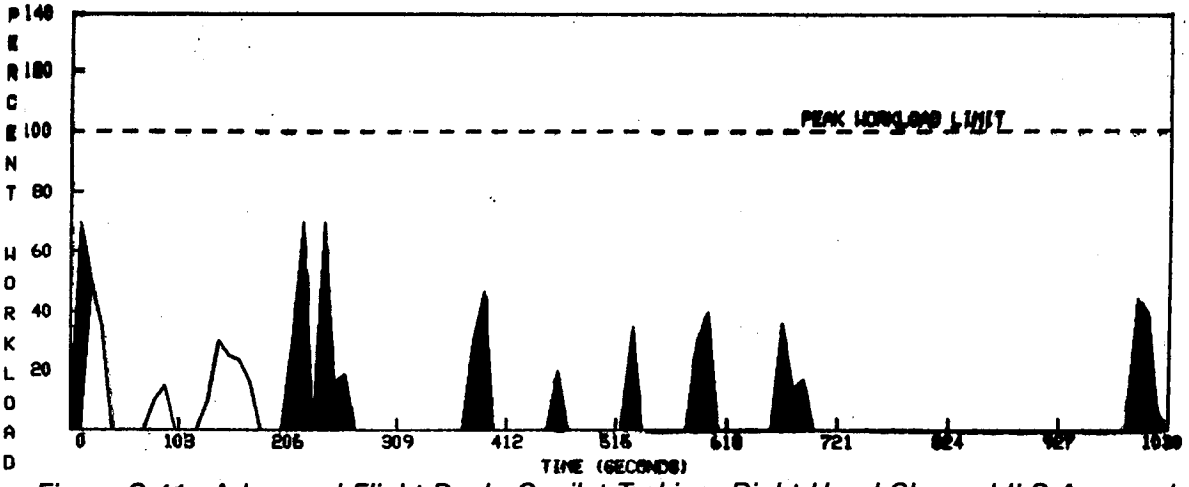

Figure C-41. Advanced Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With Weather Deviation

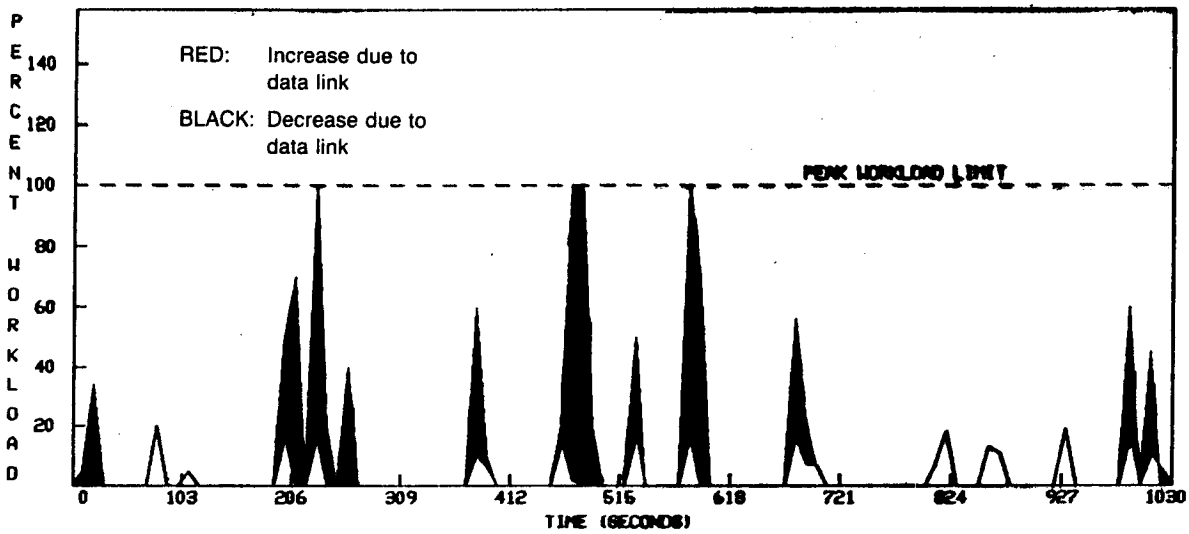

Figure C-42. Advanced Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With Weather Deviation

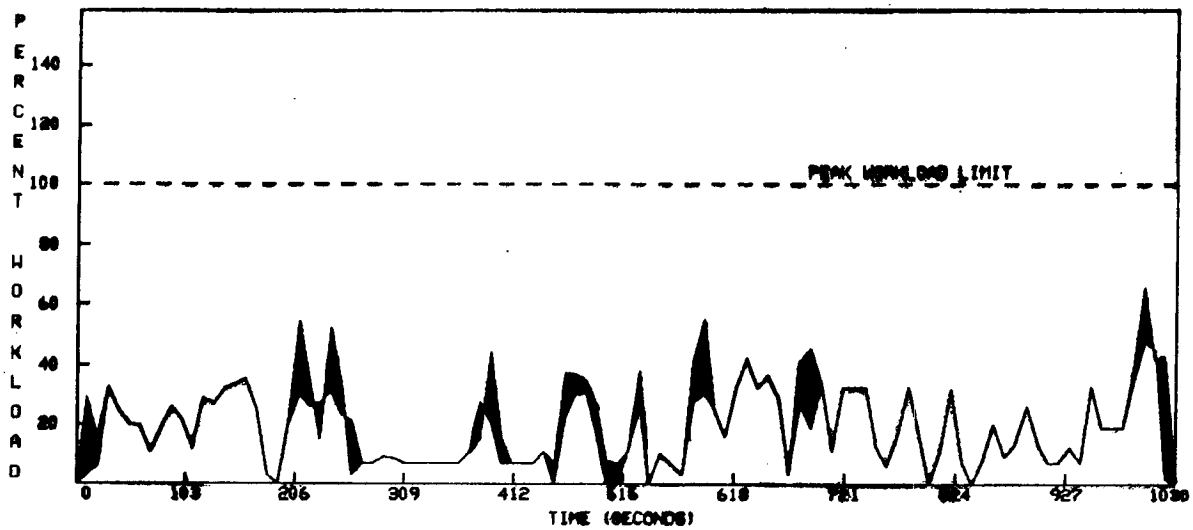

Figure C-43. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With Weather Deviation

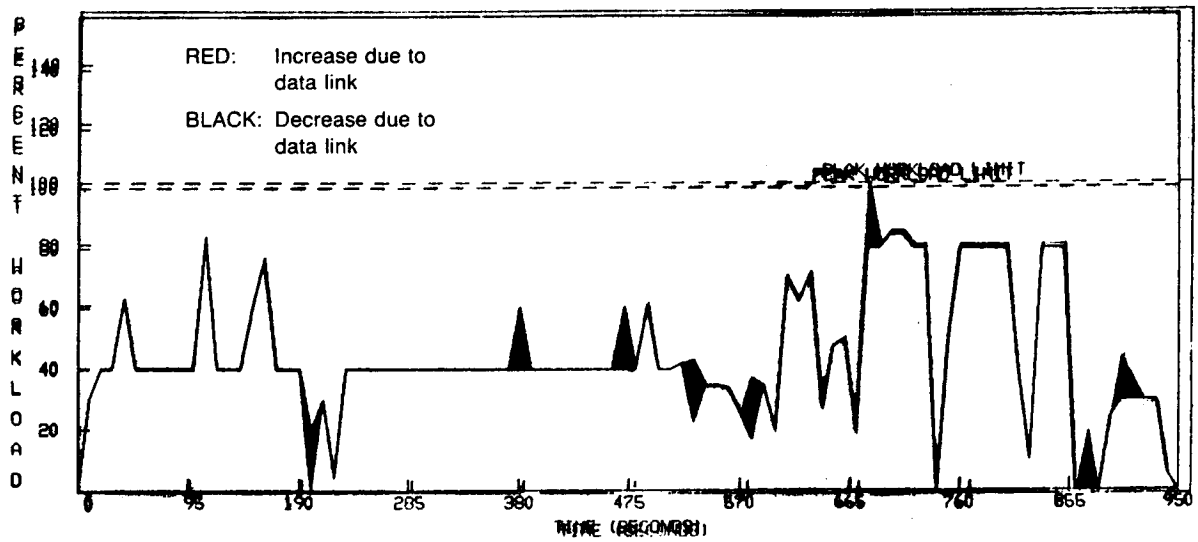

Figure C-44. Conventional Flight Deck, Pilot Tasking, Vision Internal Channel ILS Missed Approach With Reroute

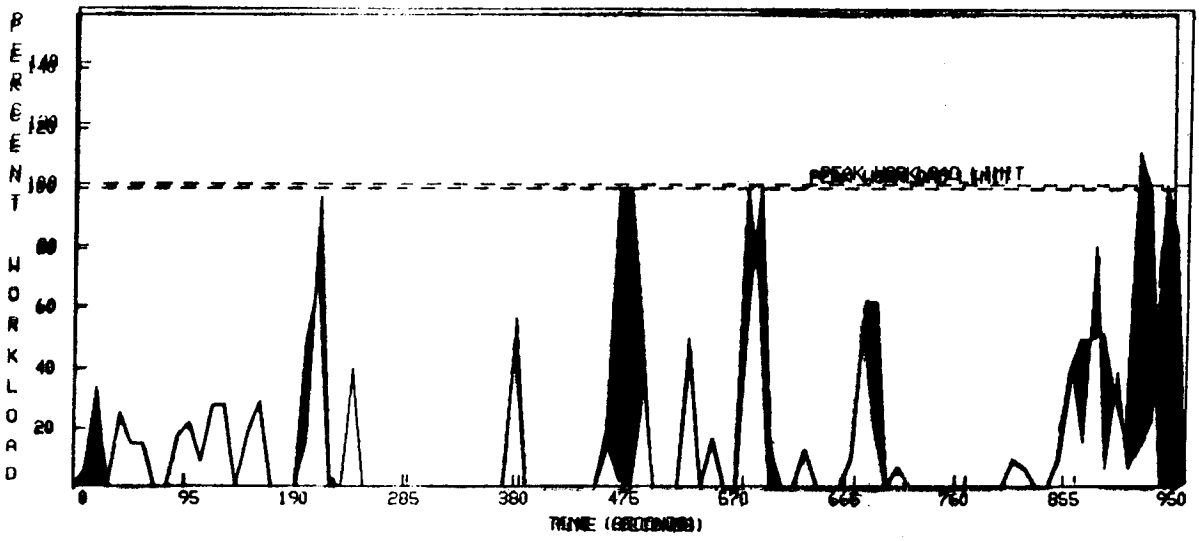

Figure C-45. Conventional Flight Deck, Pilot Tasking, Auditory Channel ILS Missed Approach With Reroute

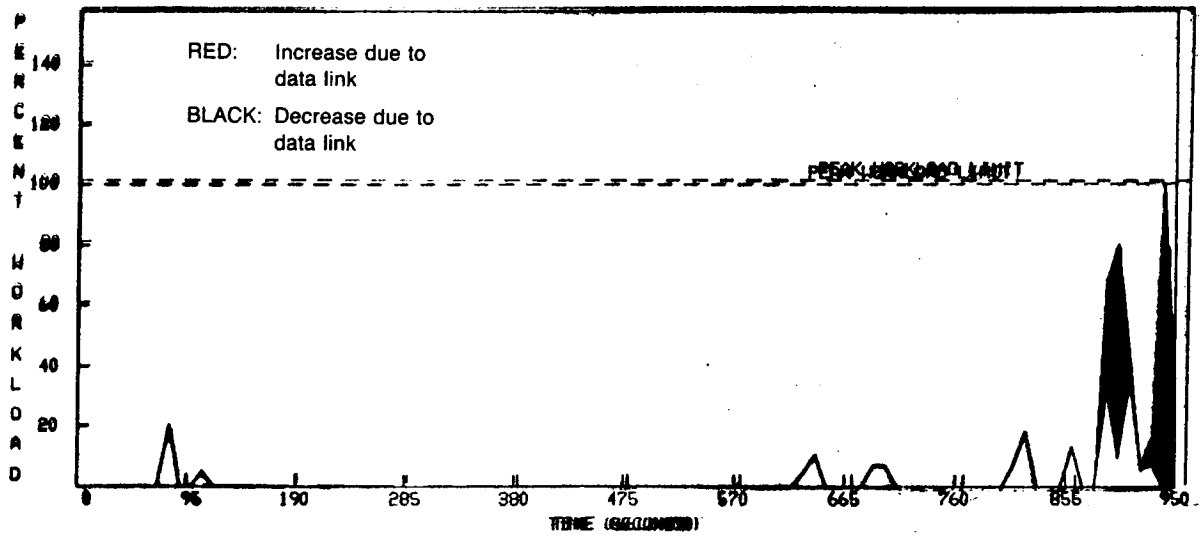

Figure C-46. Conventional Flight Deck, Pilot Tasking, Verbal Channel ILS Missed Approach With Reroute

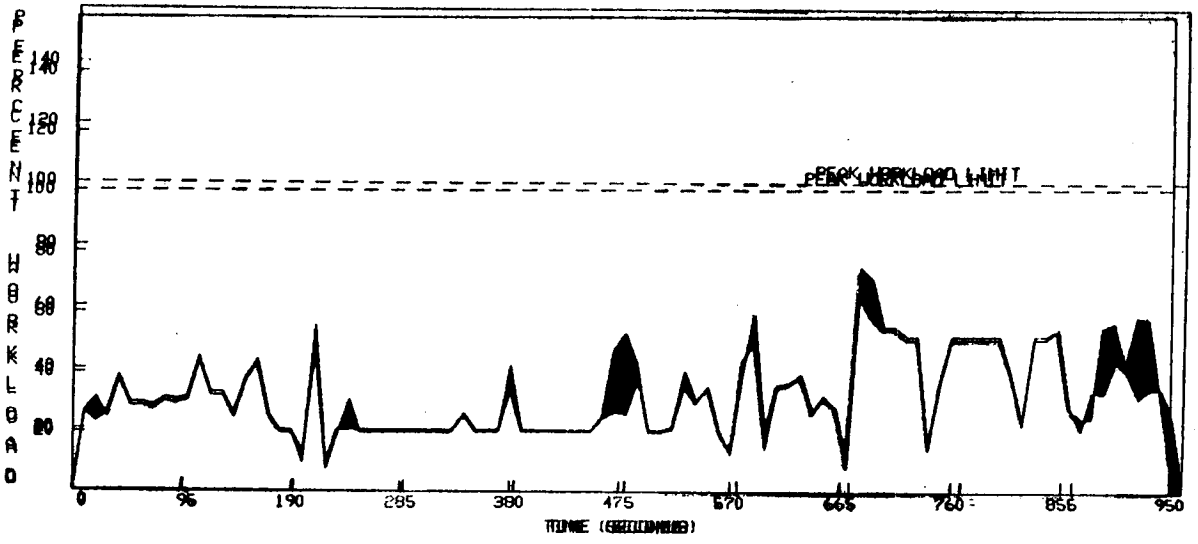

Figure C-47. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

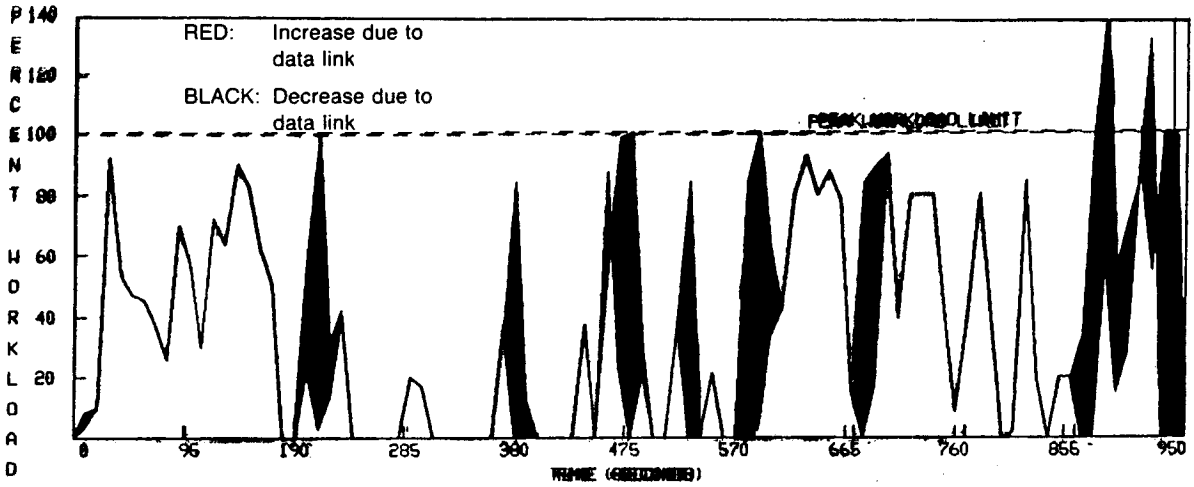

Figure C-48. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel ILS Missed Approach With Reroute

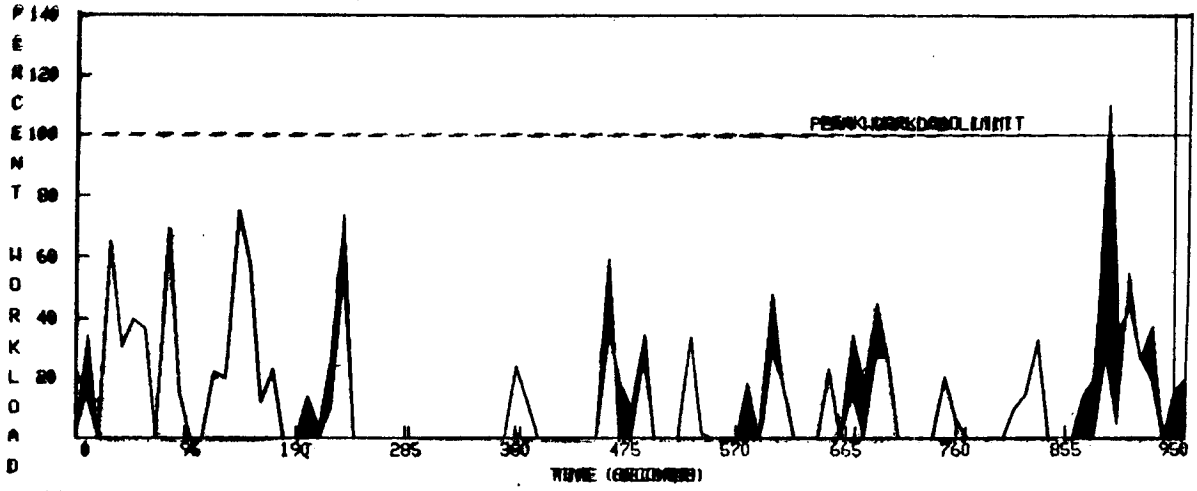

Figure C-49. Conventional Flight Deck, Copilot Tasking, Left Hand Channel ILS Missed Approach With Reroute

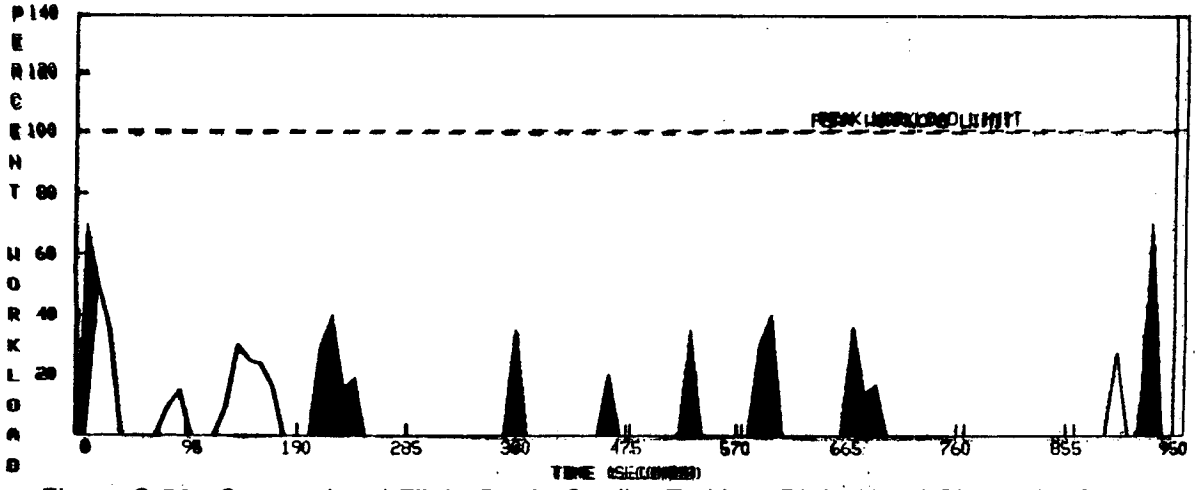

Figure C-50. Conventional Flight Deck, Copilot Tasking, Right Hand Channel ILS Missed Approach With Reroute

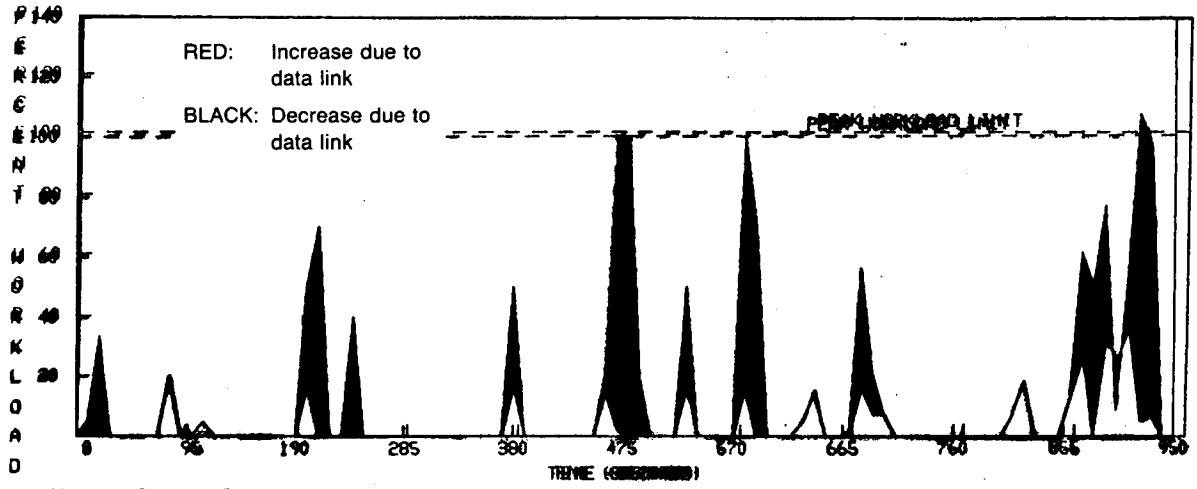

Figure C-51. Conventional Flight Deck, Copilot Tasking, Auditory Channel ILS Missed Approach With Reroute

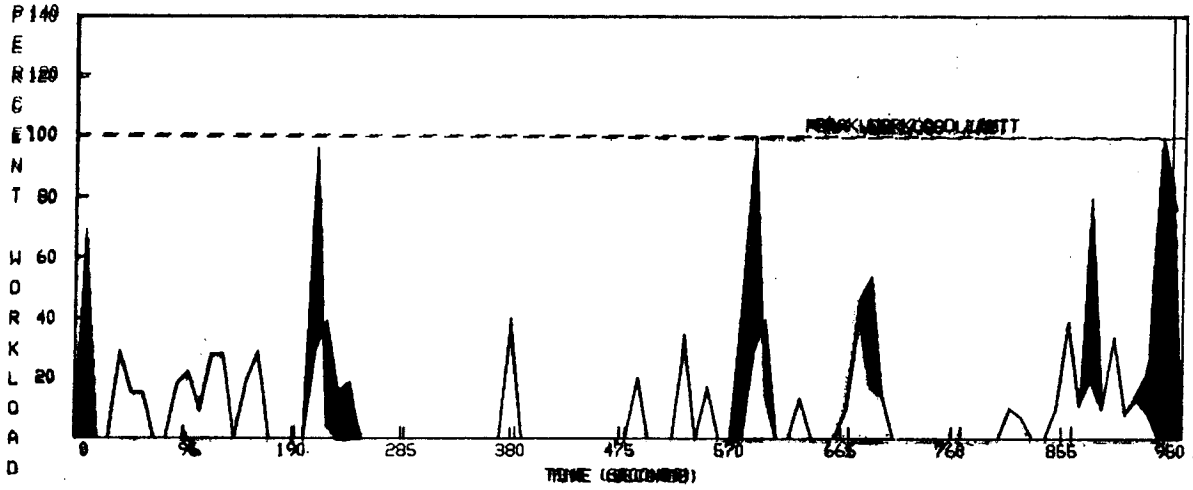

Figure C-52. Conventional Flight Deck, Copilot Tasking, Verbal Channel ILS Missed Approach With Reroute

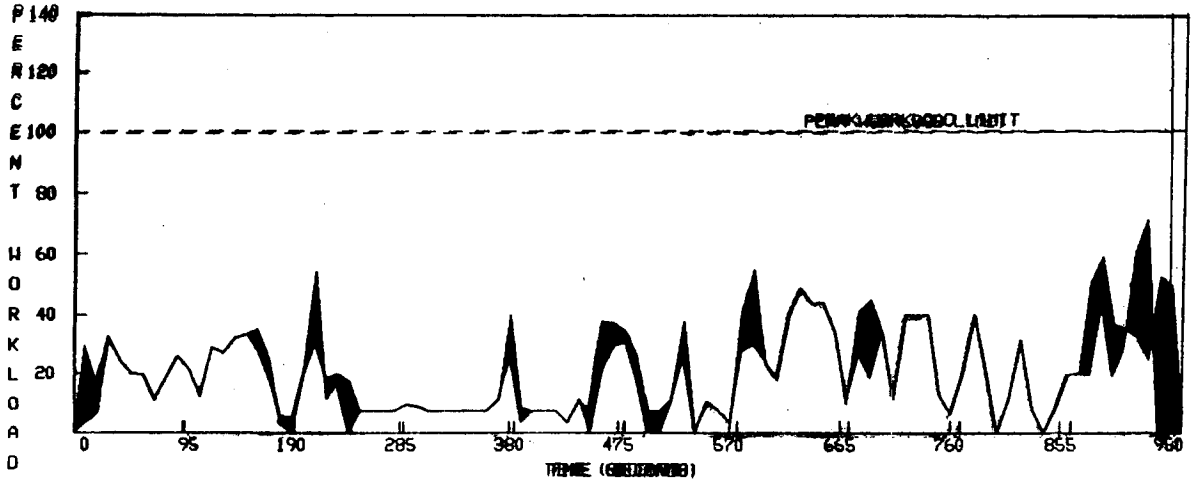

Figure C-53. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

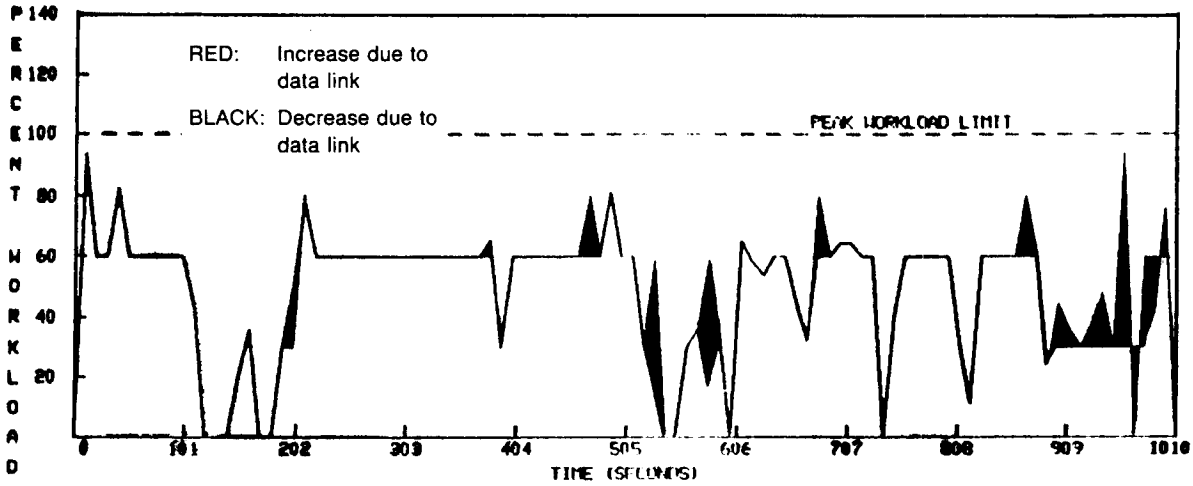

Figure C-54. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel ILS Missed Approach With Reroute

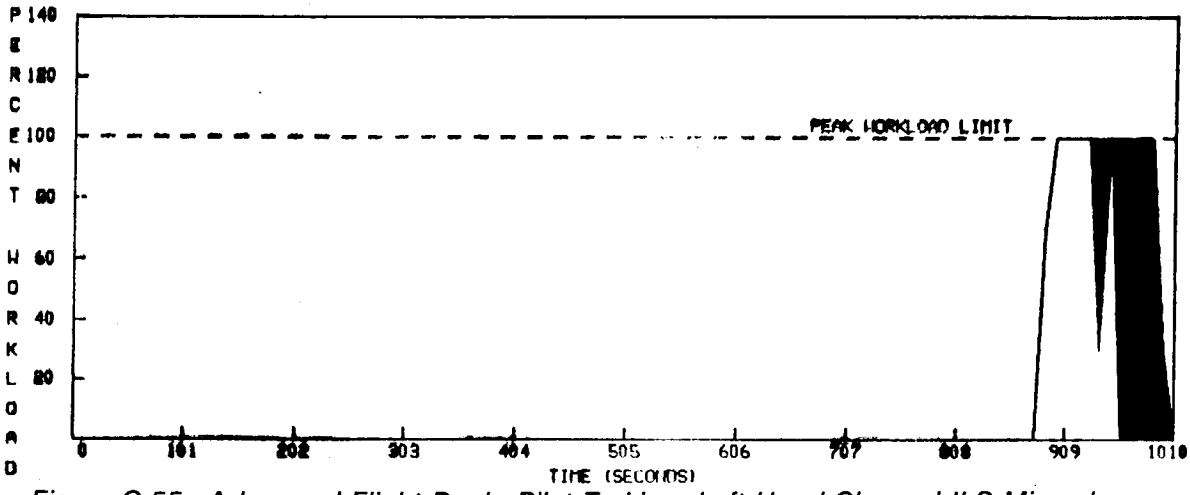

Figure C-55. Advanced Flight Deck, Pilot Tasking, Left Hand Channel ILS Missed Approach With Reroute

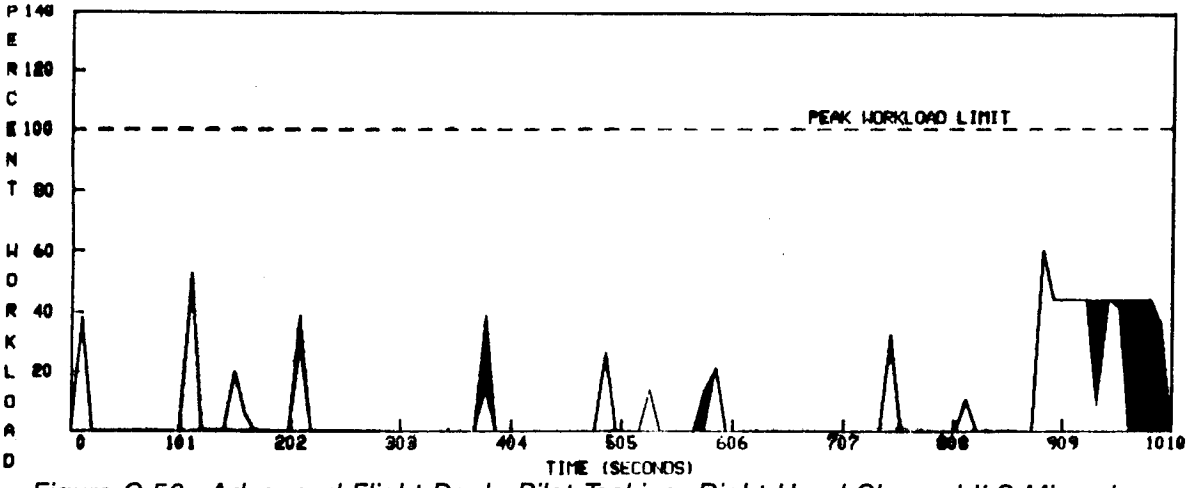

Figure C-56. Advanced Flight Deck, Pilot Tasking, Right Hand Channel ILS Missed Approach With Reroute

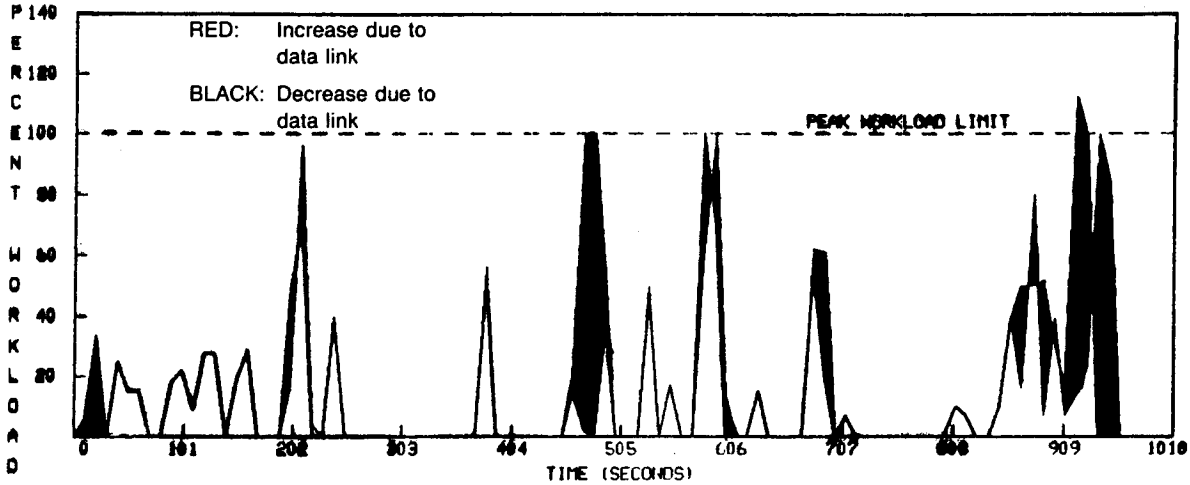

Figure C-57. Advanced Flight Deck, Pilot Tasking, Auditory Channel ILS Missed Approach With Reroute

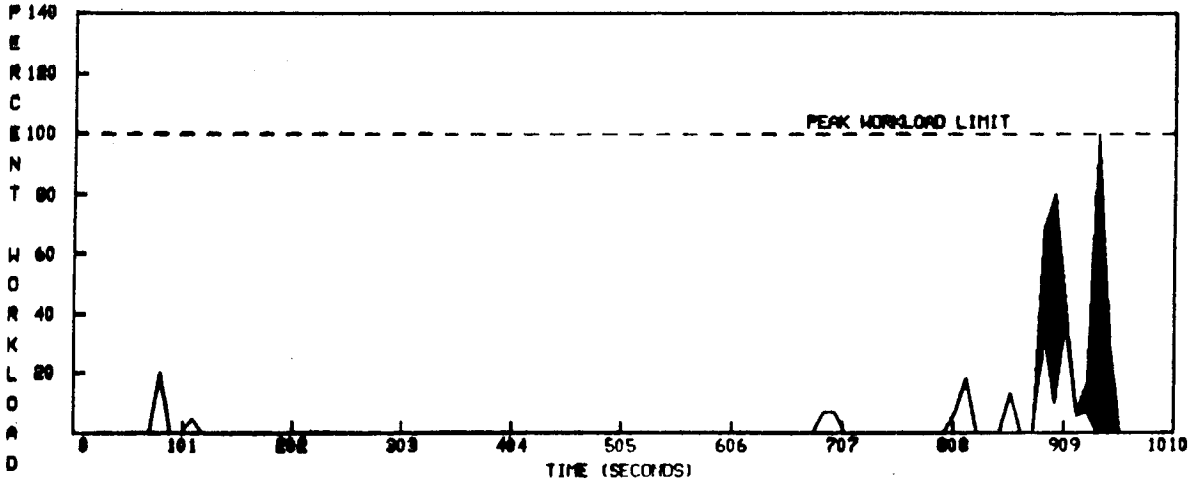

Figure C-58. Advanced Flight Deck, Pilot Tasking, Verbal Channel ILS Missed Approach With Reroute

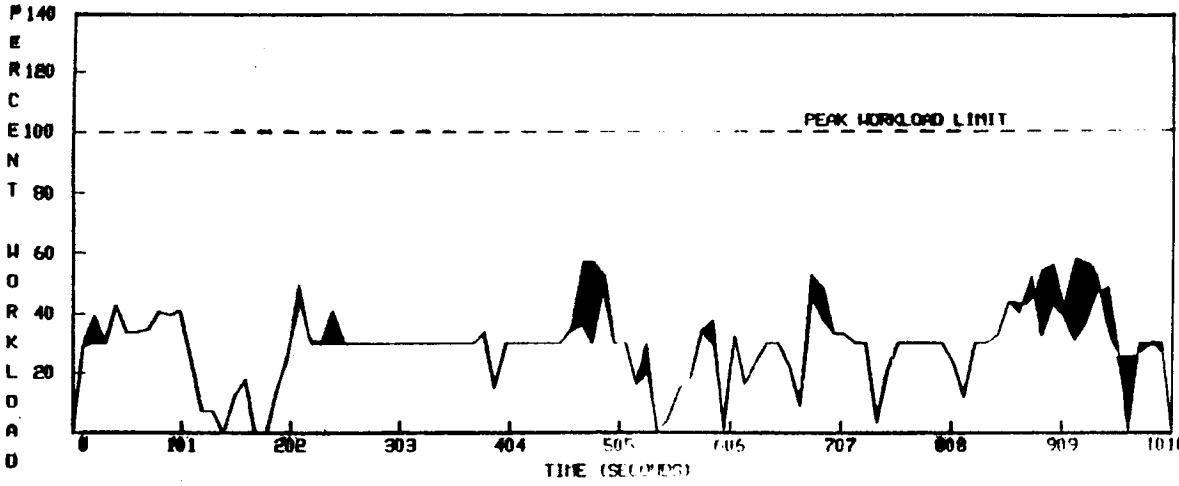

Figure C-59. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

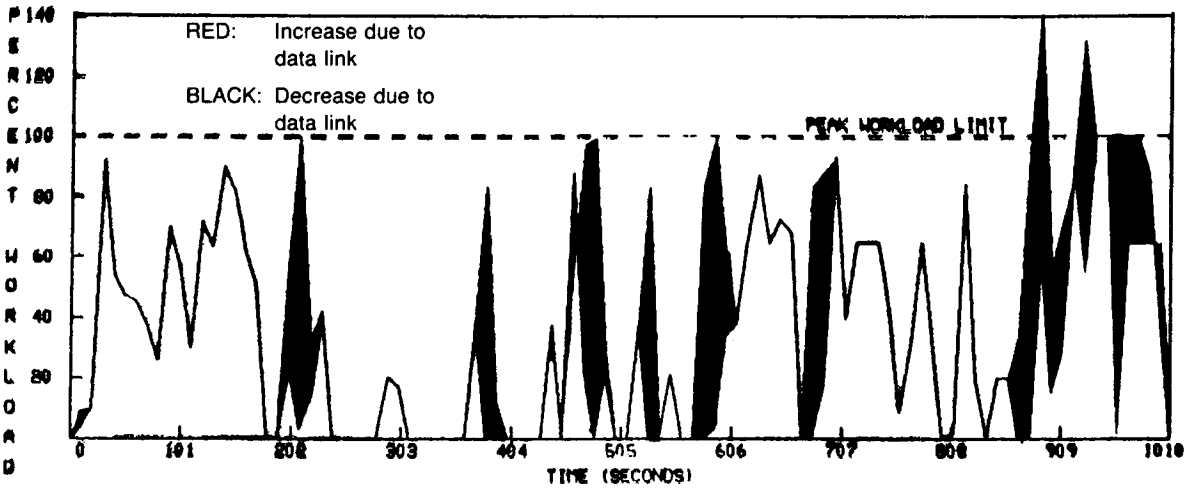

Figure C-60. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel ILS Missed Approach With Reroute

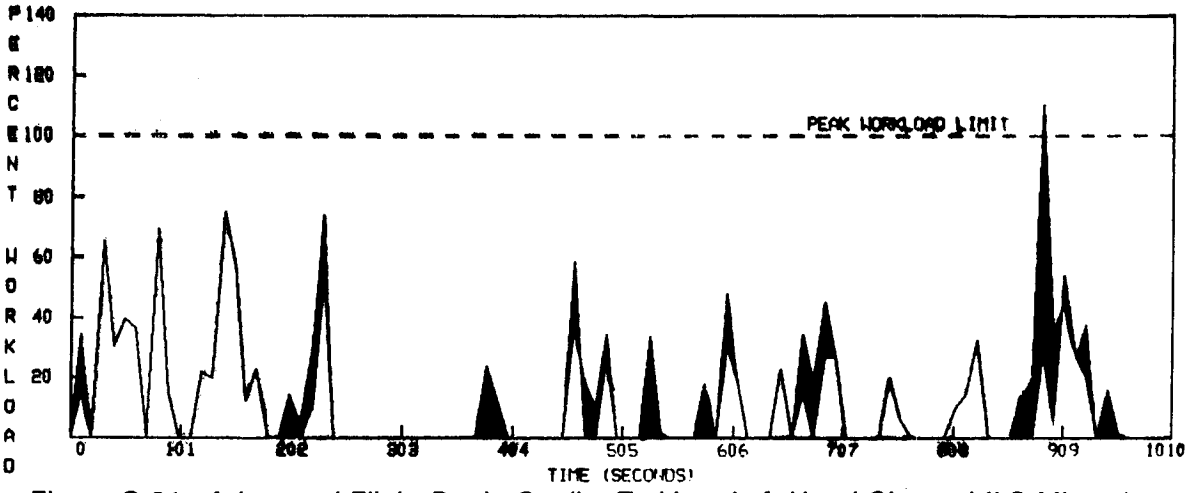

Figure C-61. Advanced Flight Deck, Copilot Tasking, Left Hand Channel ILS Missed Approach With Reroute

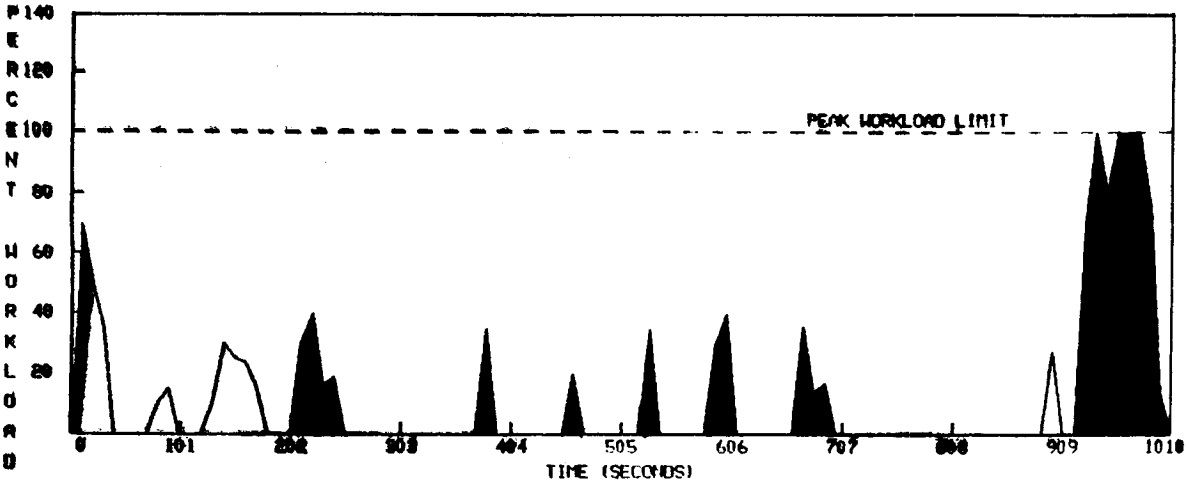

Figure C-62. Advanced Flight Deck, Copilot Tasking, Right Hand Channel ILS Missed Approach With Reroute

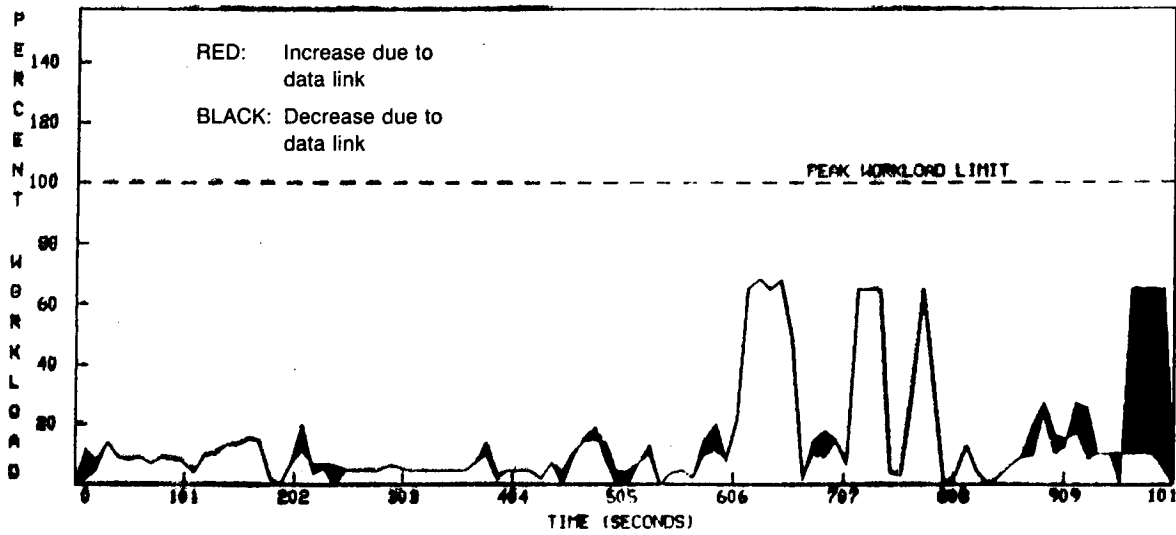

Figure C-63. Advanced Flight Deck, Copilot Tasking, Cognitive Channel ILS Missed Approach With Reroute

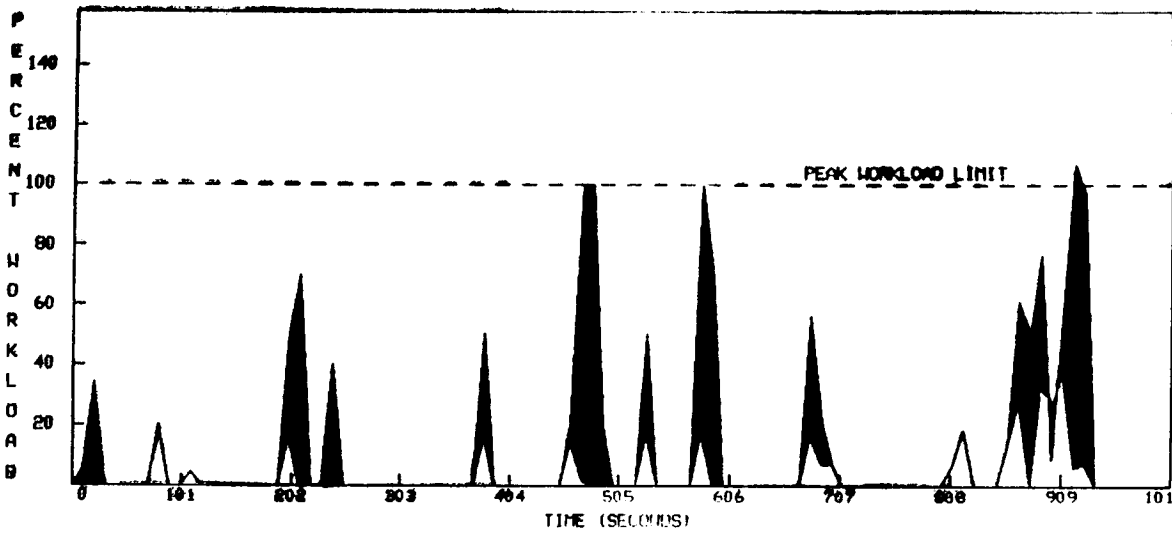

Figure C-64. Advanced Flight Deck, Copilot Tasking, Auditory Channel ILS Missed Approach With Reroute

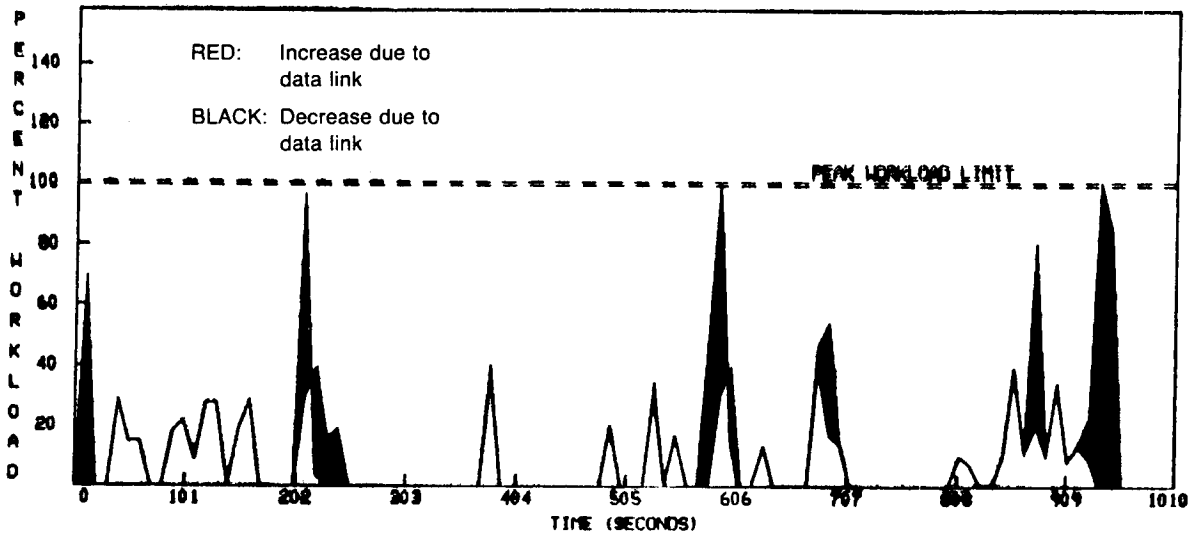

Figure C-65. Advanced Flight Deck, Copilot Tasking, Verbal Channel ILS Missed Approach With Reroute

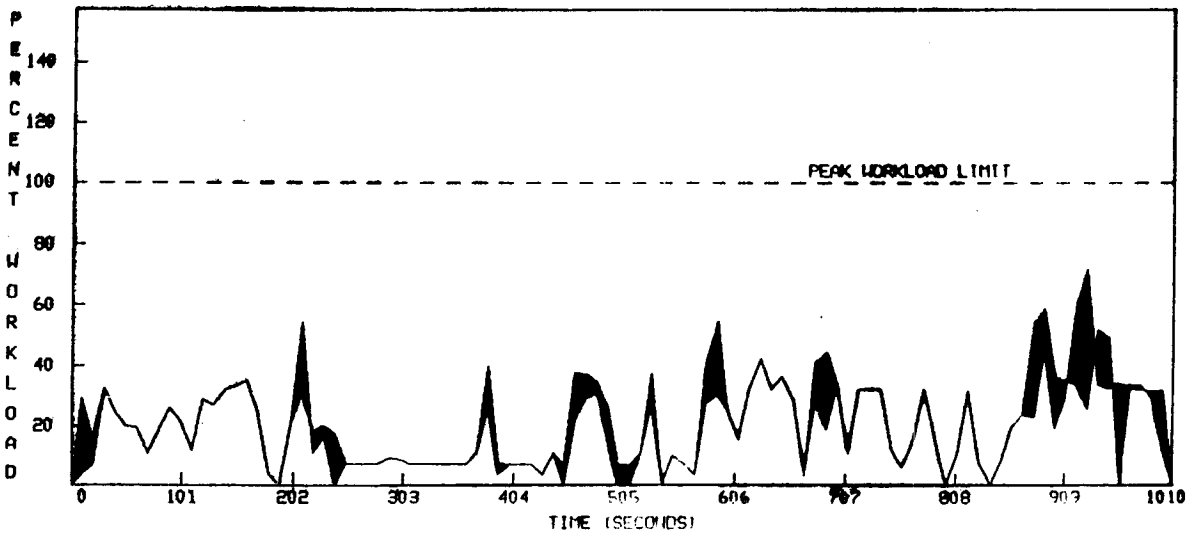

Figure C-66. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average ILS Missed Approach With Reroute

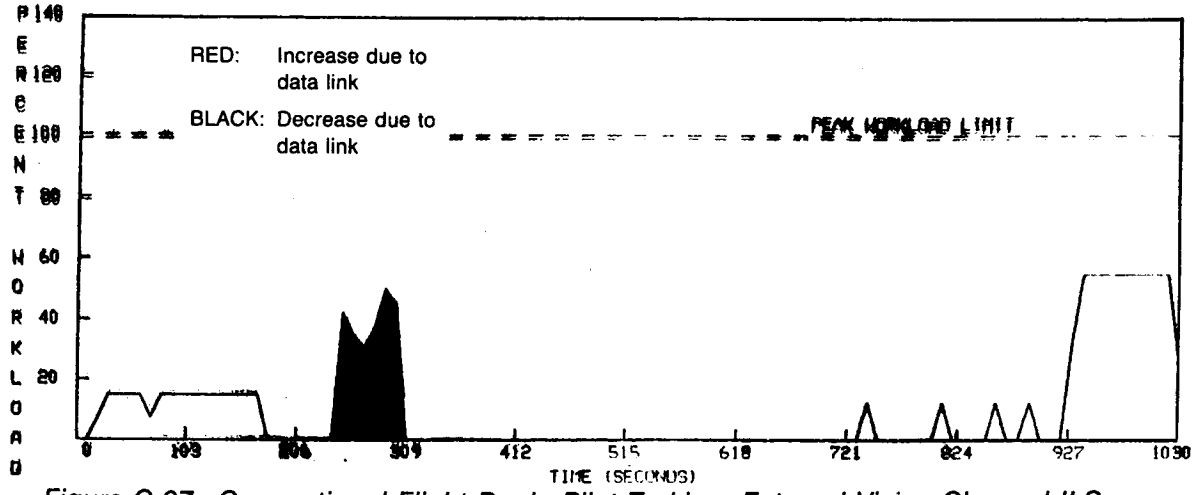

Figure C-67. Conventional Flight Deck, Pilot Tasking, External Vision Channel ILS Approach With TCAS Encounter

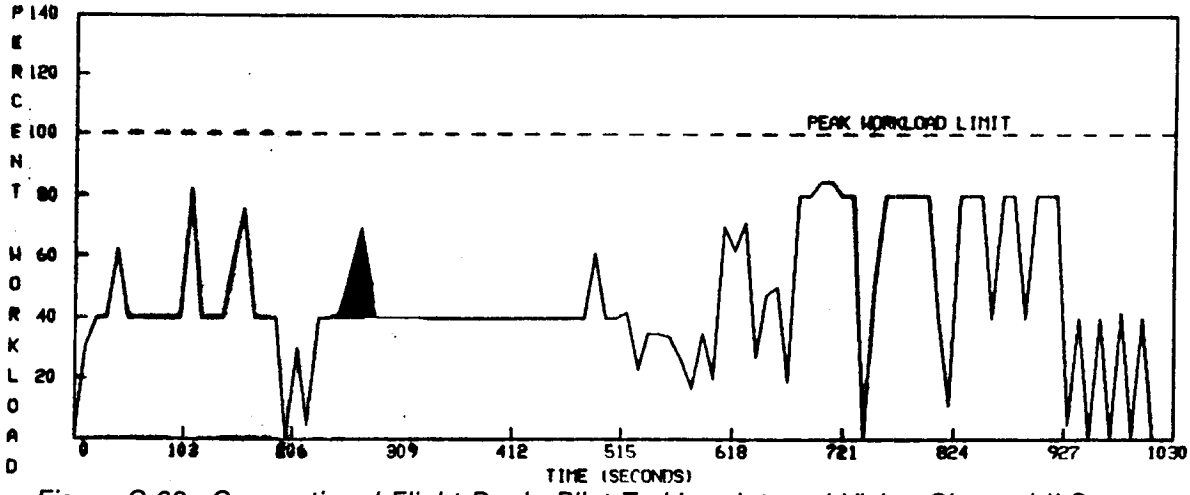

Figure C-68. Conventional Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

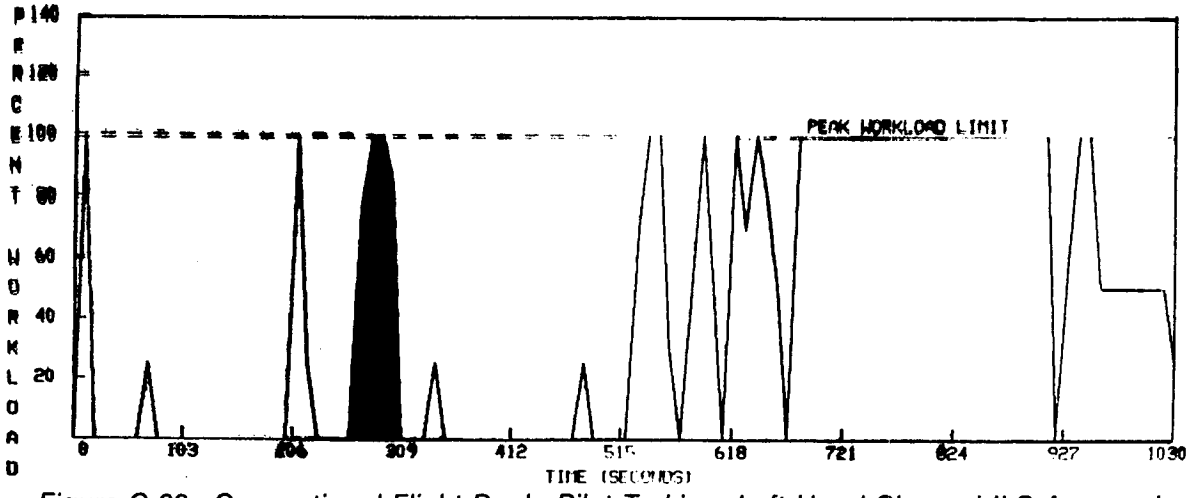

Figure C-69. Conventional Flight Deck, Pilot Tasking, Left Hand Channel ILS Approach With TCAS Encounter

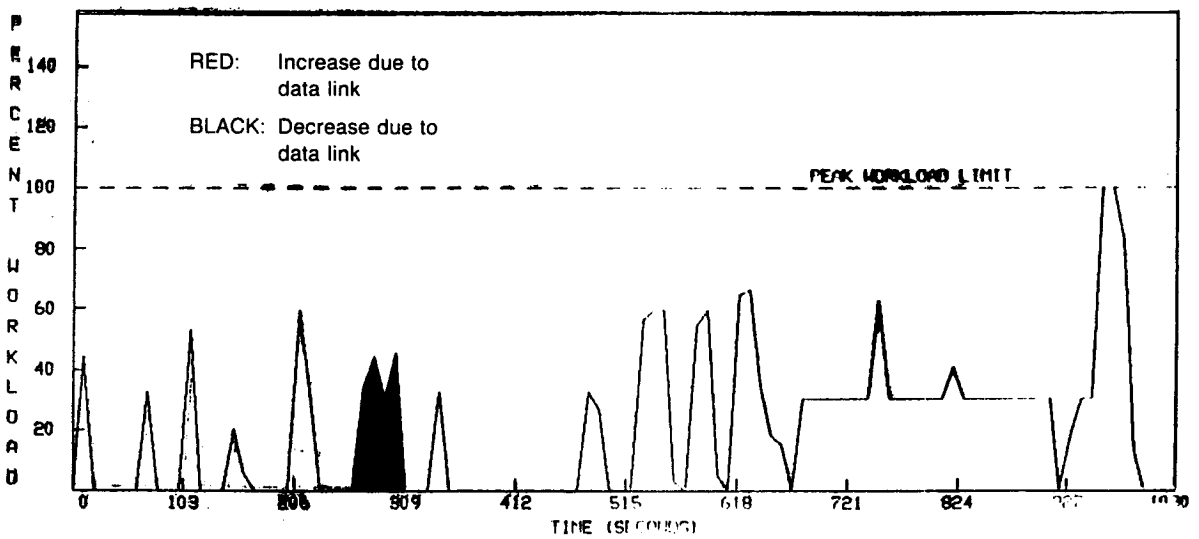

Figure C-70. Conventional Flight Deck, Pilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

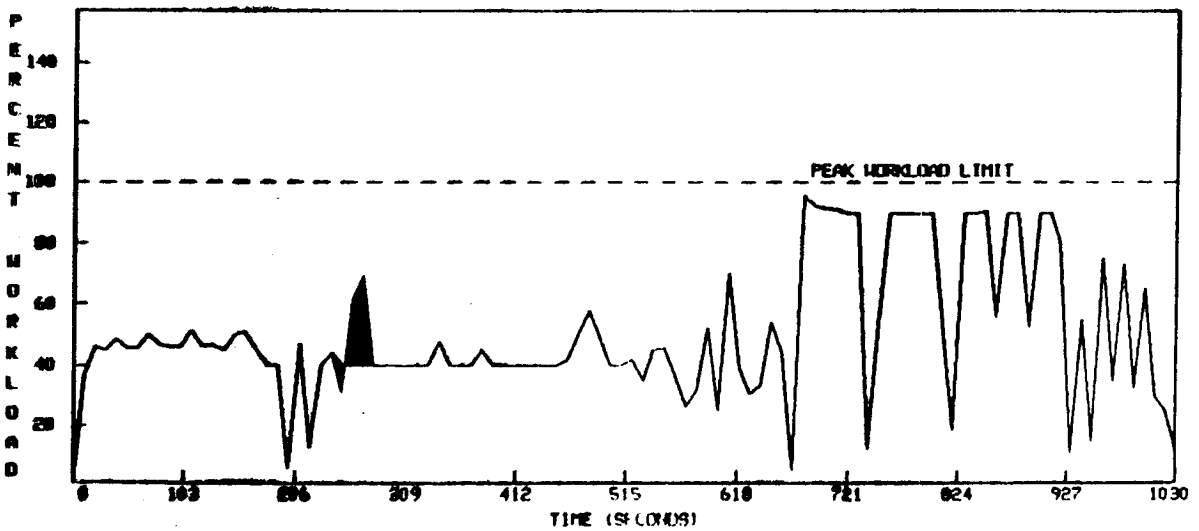

Figure C-71. Conventional Flight Deck, Pilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

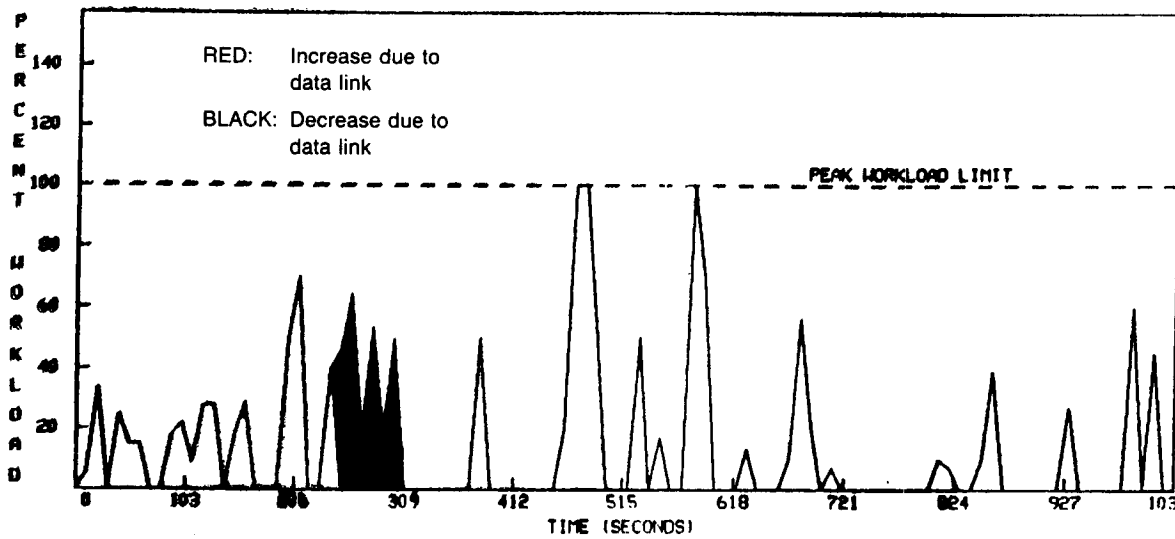

Figure C-72. Conventional Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

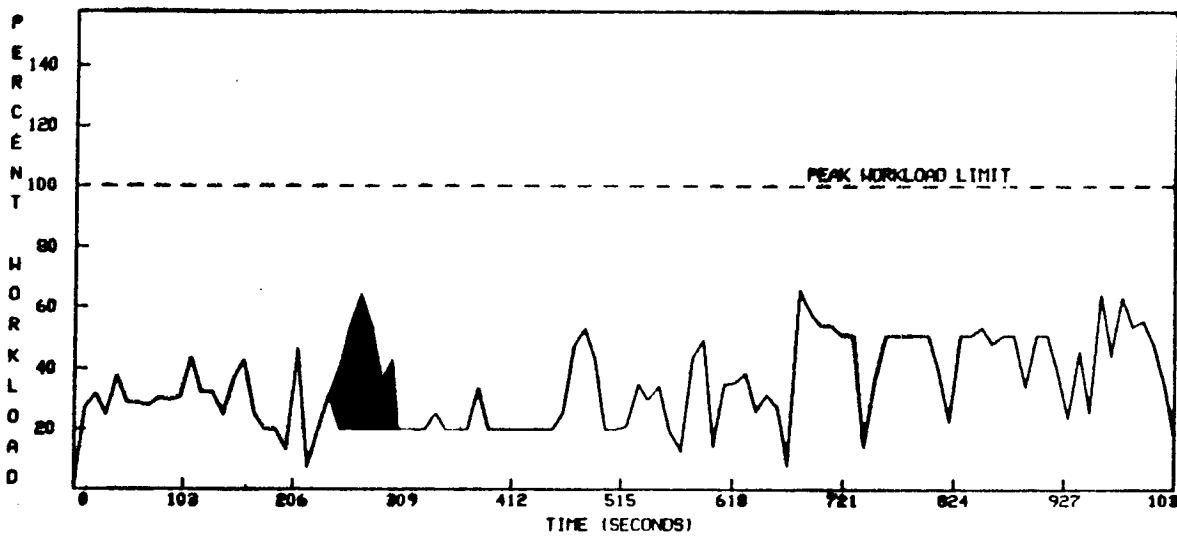

Figure C-73. Conventional Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter

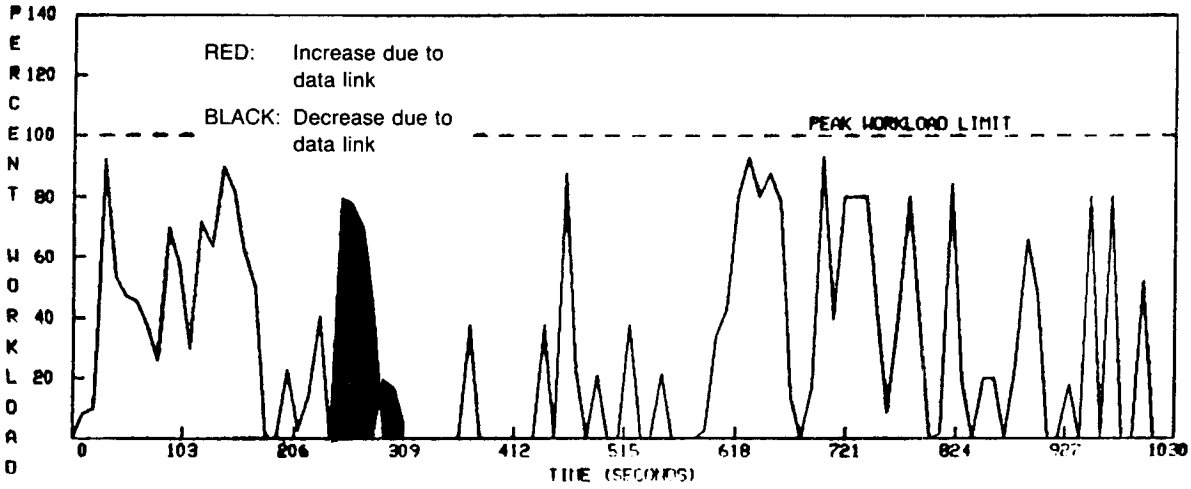

Figure C-74. Conventional Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

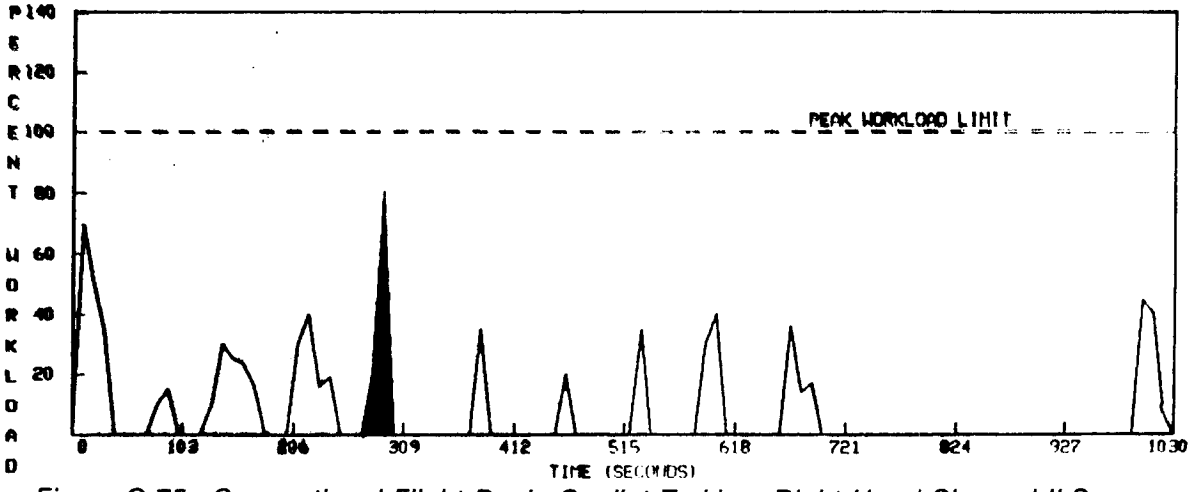

Figure C-75. Conventional Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

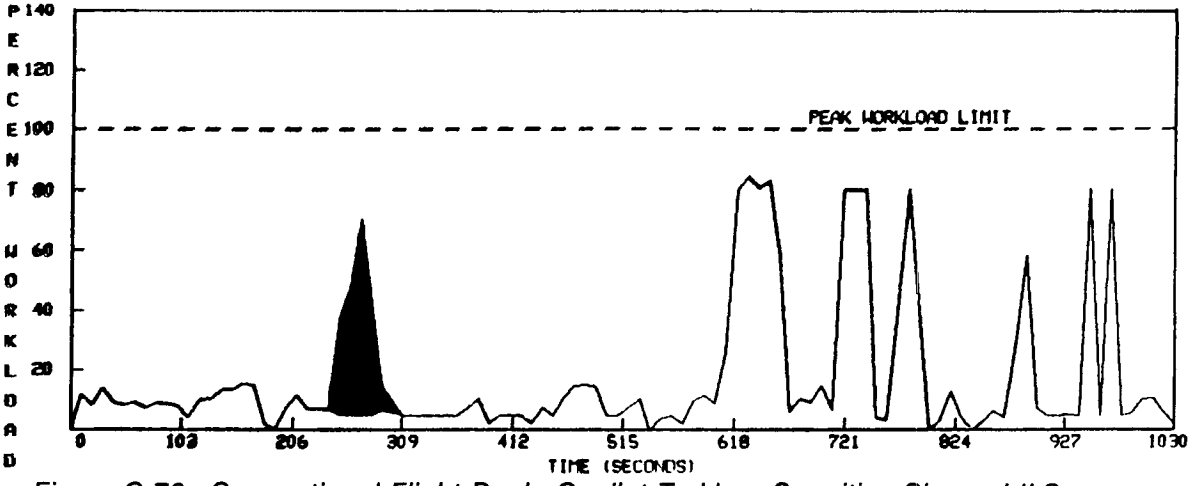

Figure C-76. Conventional Flight Deck, Copilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

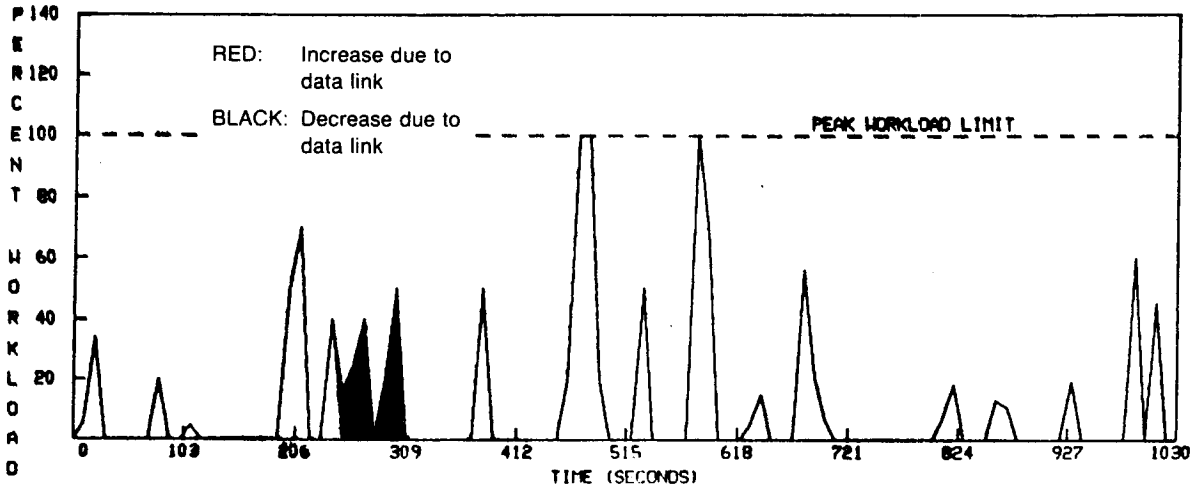

Figure C-77. Conventional Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

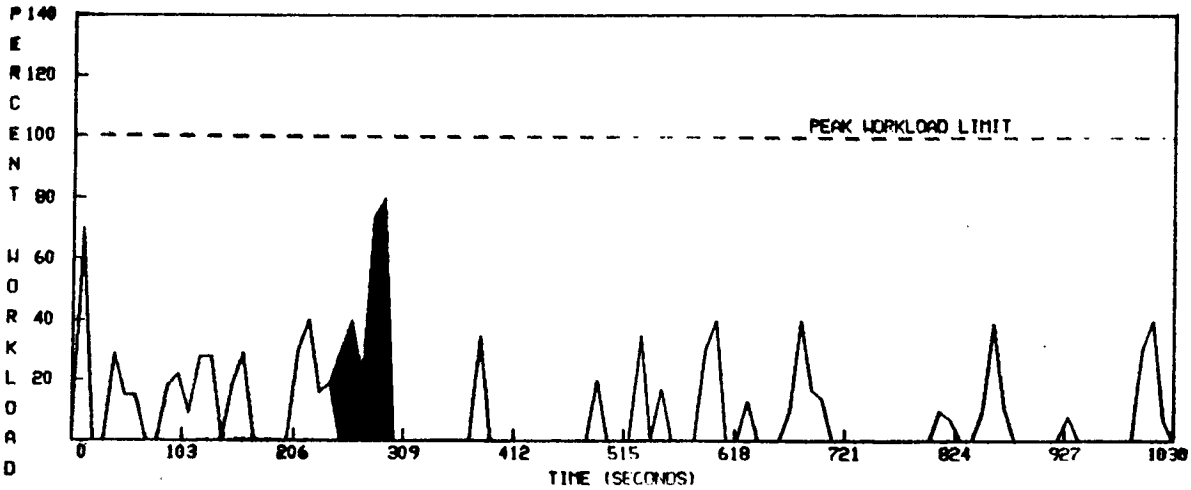

Figure C-78. Conventional Flight Deck, Copilot Tasking, Verbal Channel ILS Approach With TCAS Encounter

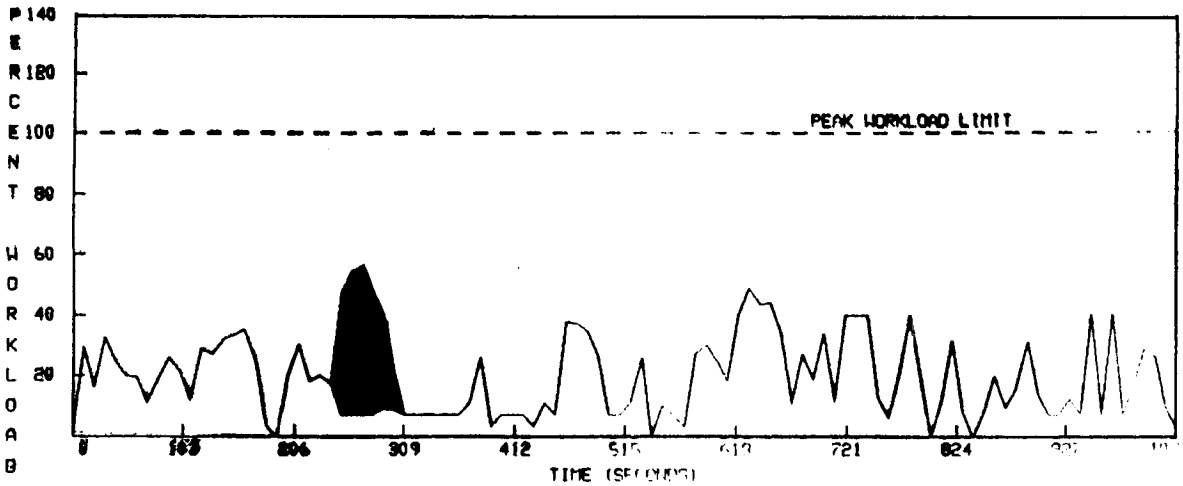

Figure C-79. Conventional Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter

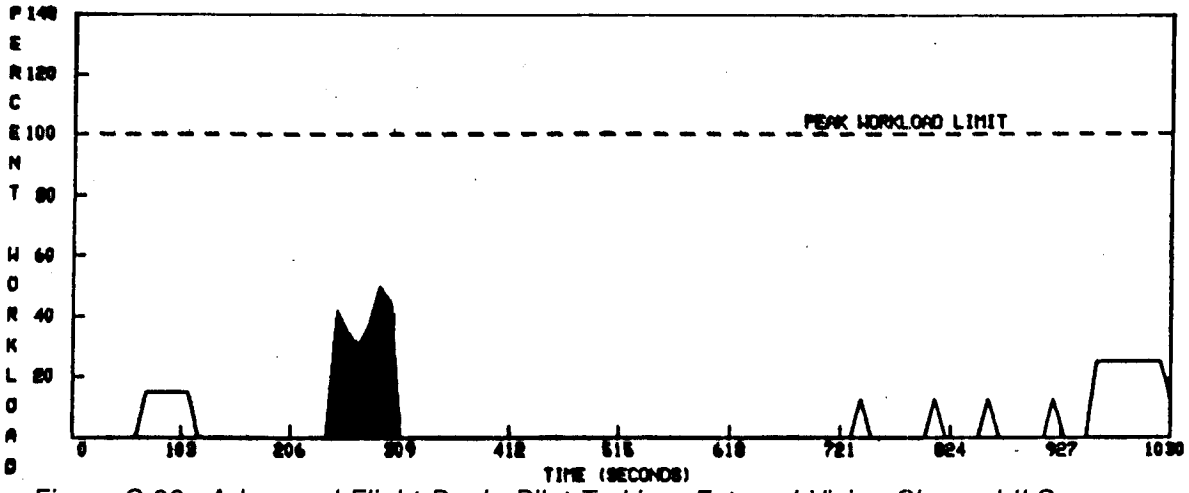

Figure C-80. Advanced Flight Deck, Pilot Tasking, External Vision Channel ILS Approach With TCAS Encounter

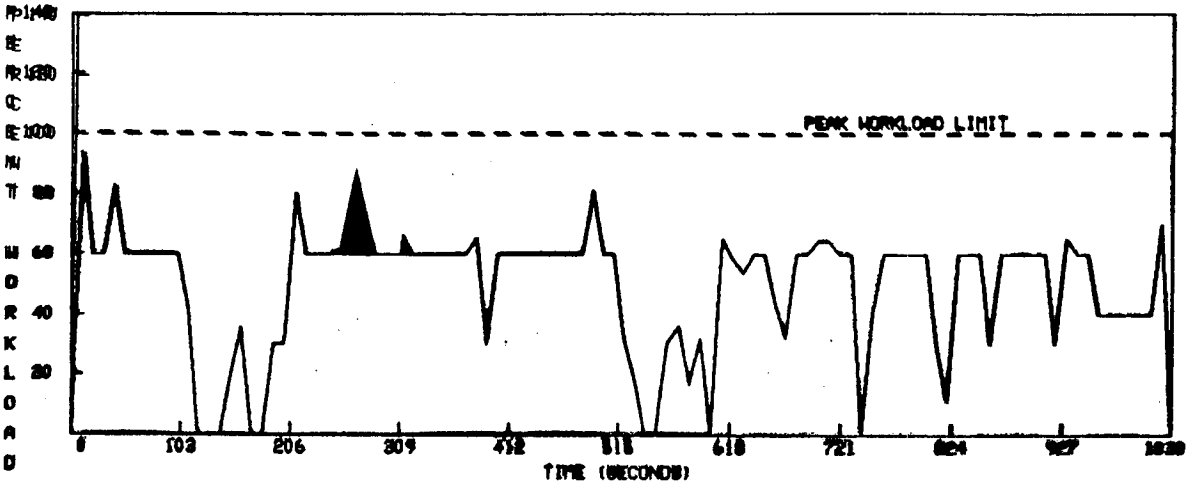

Figure C-81. Advanced Flight Deck, Pilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

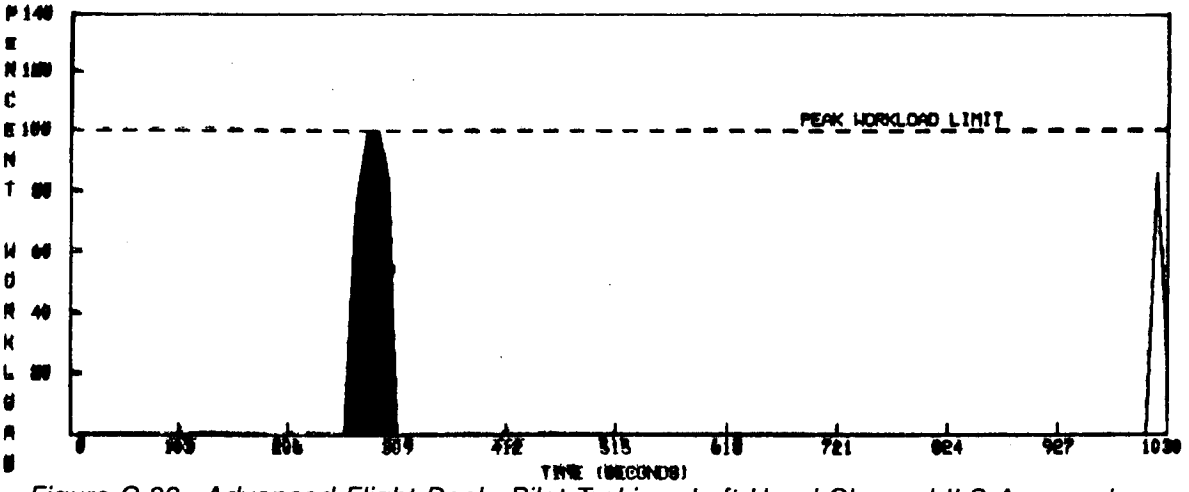

Figure C-82. Advanced Flight Deck, Pilot Tasking, Left Hand Channel ILS Approach With TCAS Encounter

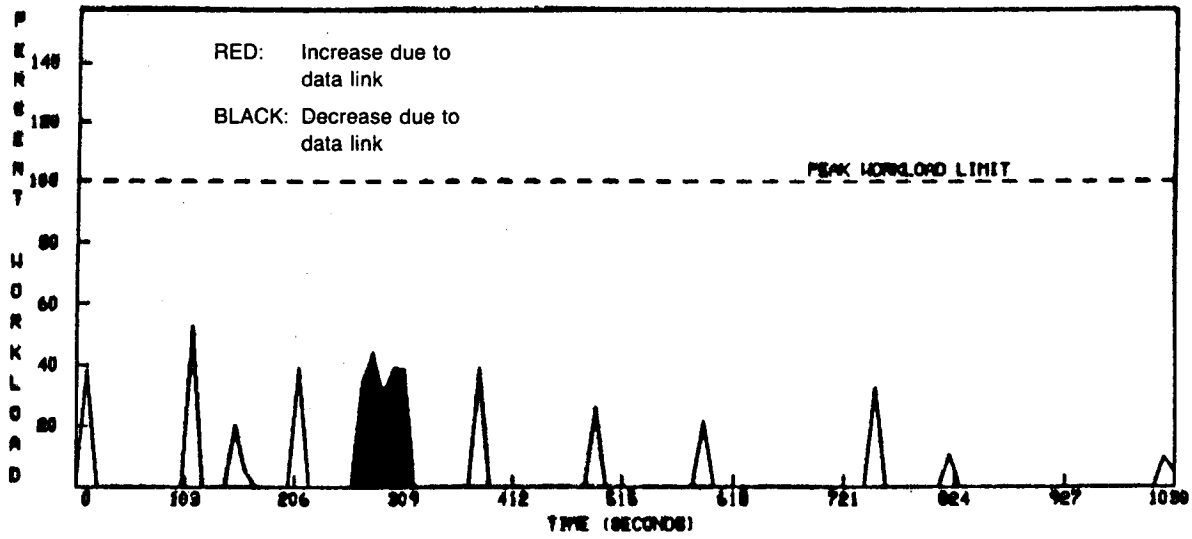

Figure C-83. Advanced Flight Deck, Pilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

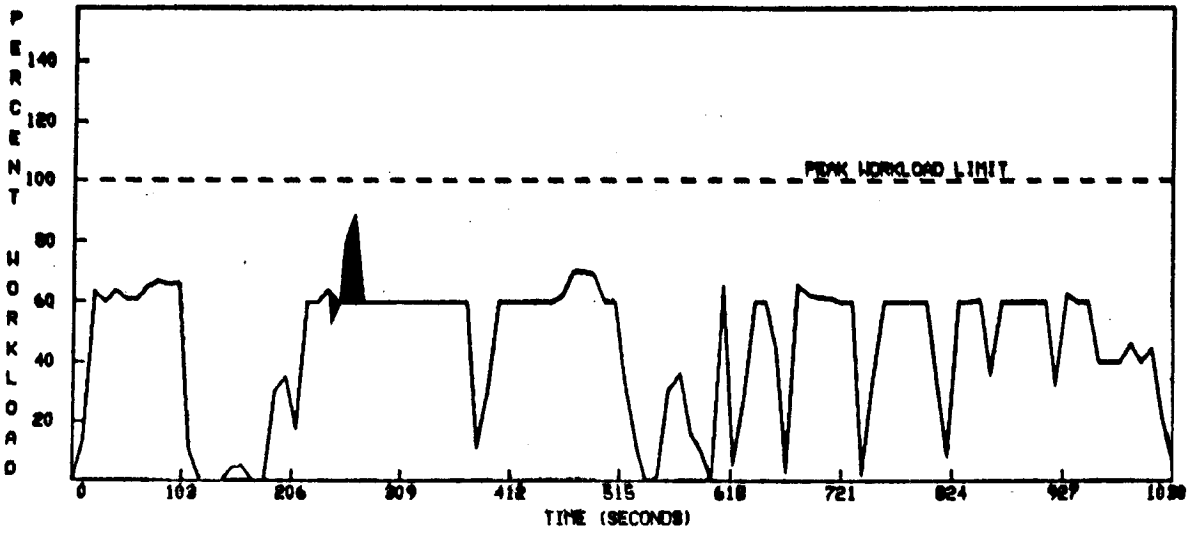

Figure C-84. Advanced Flight Deck, Pilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

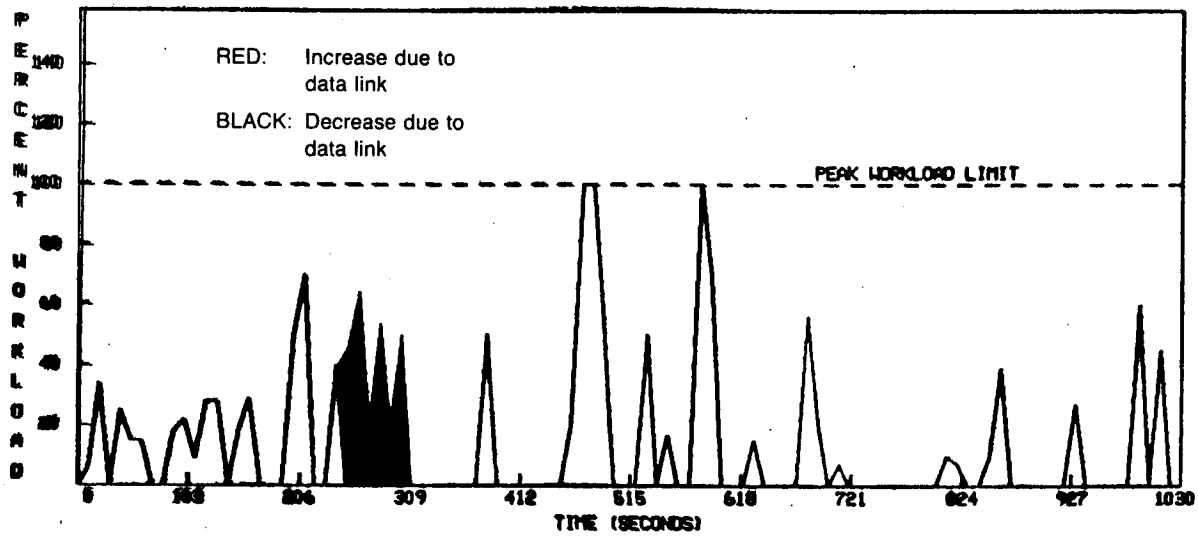

Figure C-85. Advanced Flight Deck, Pilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

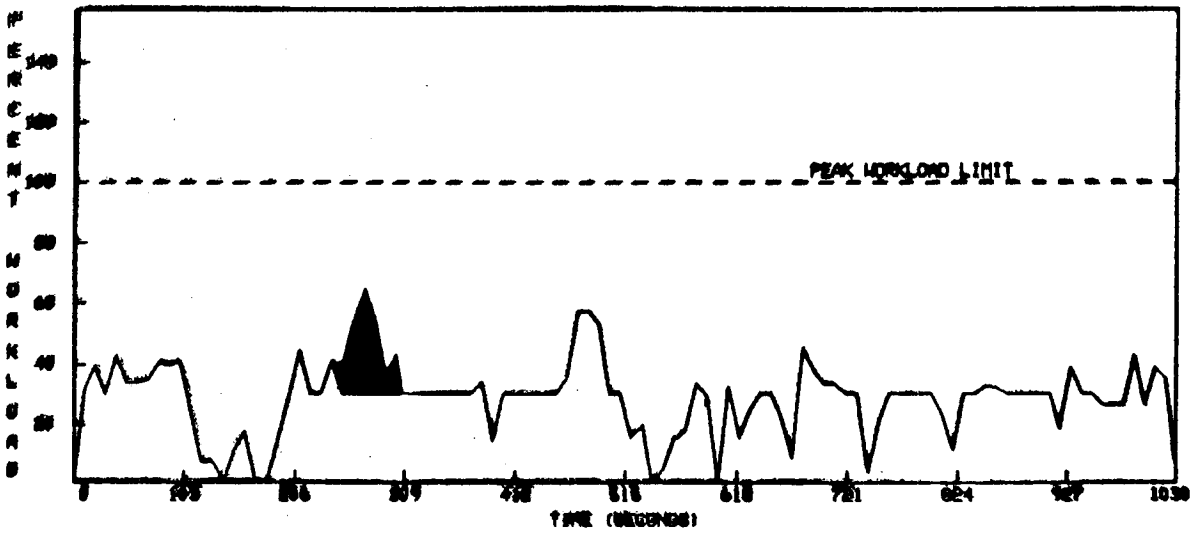

Figure C-86. Advanced Flight Deck, Pilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter

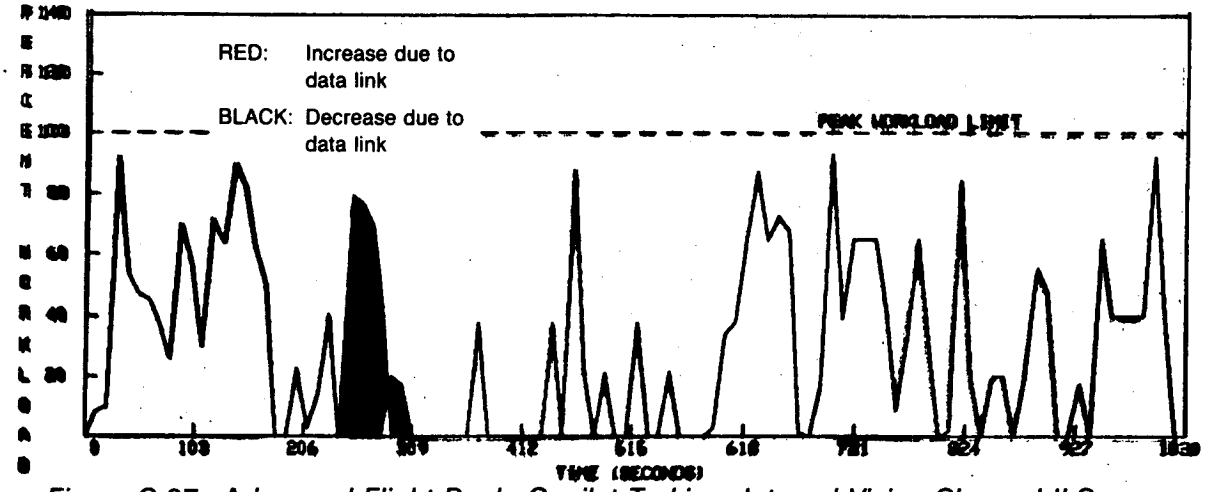

Figure C-87. Advanced Flight Deck, Copilot Tasking, Internal Vision Channel ILS Approach With TCAS Encounter

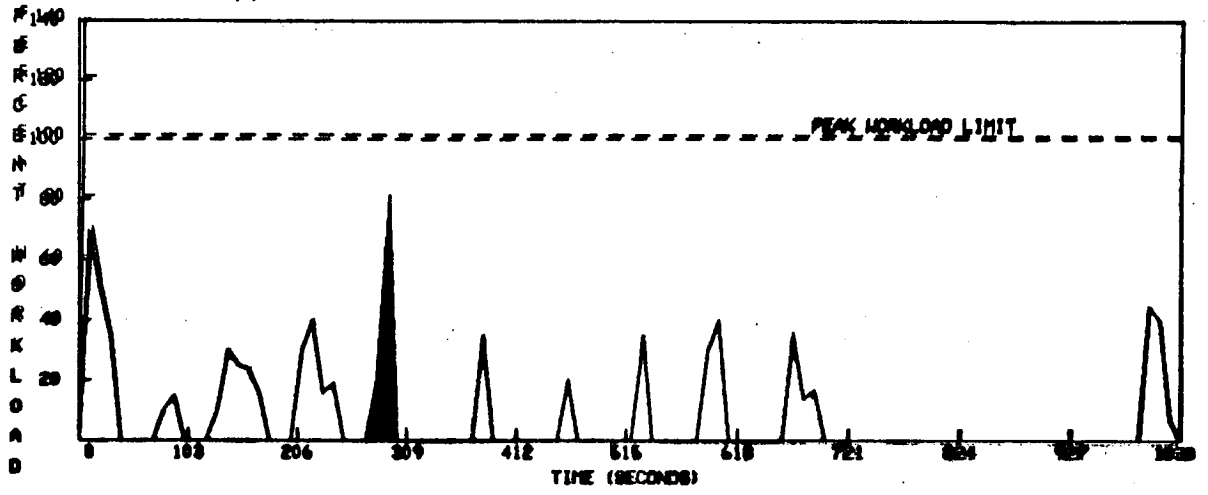

Figure C-88. Advanced Flight Deck, Copilot Tasking, Right Hand Channel ILS Approach With TCAS Encounter

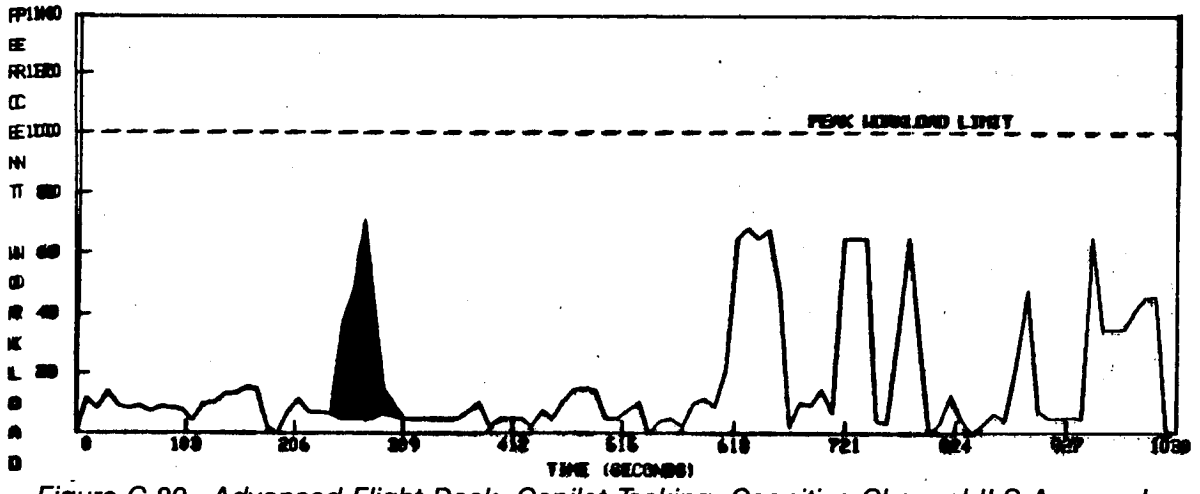

Figure C-89. Advanced Flight Deck, Copilot Tasking, Cognitive Channel ILS Approach With TCAS Encounter

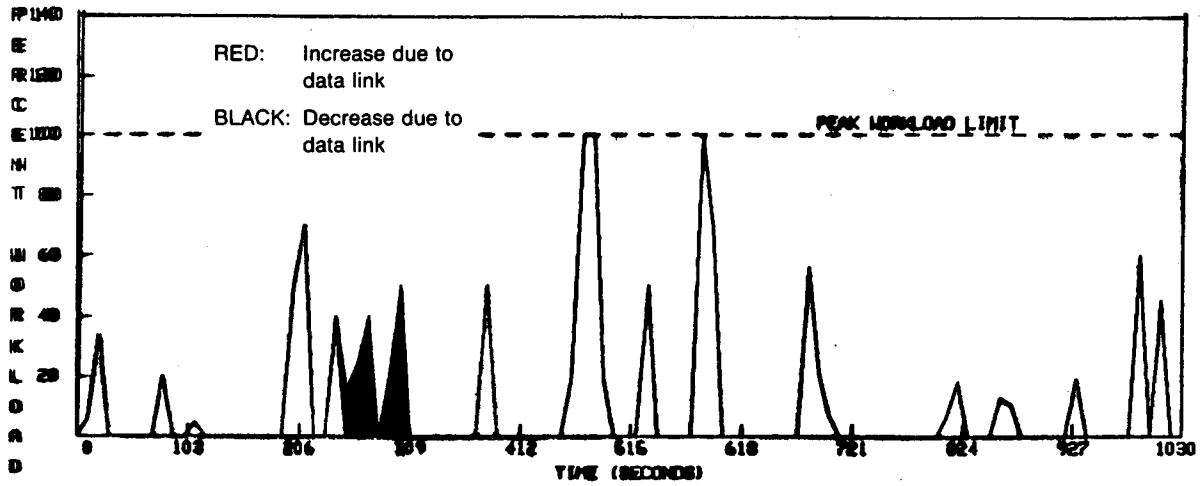

Figure C-90. Advanced Flight Deck, Copilot Tasking, Auditory Channel ILS Approach With TCAS Encounter

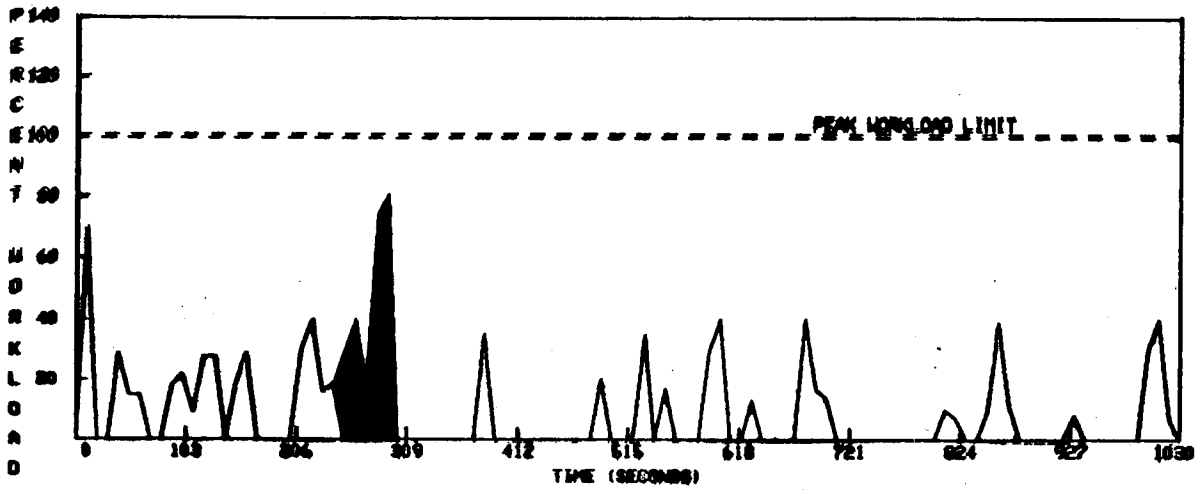

Figure C-91. Advanced Flight Deck, Copilot Tasking, Verbal Channel ILS Approach With TCAS Encounter

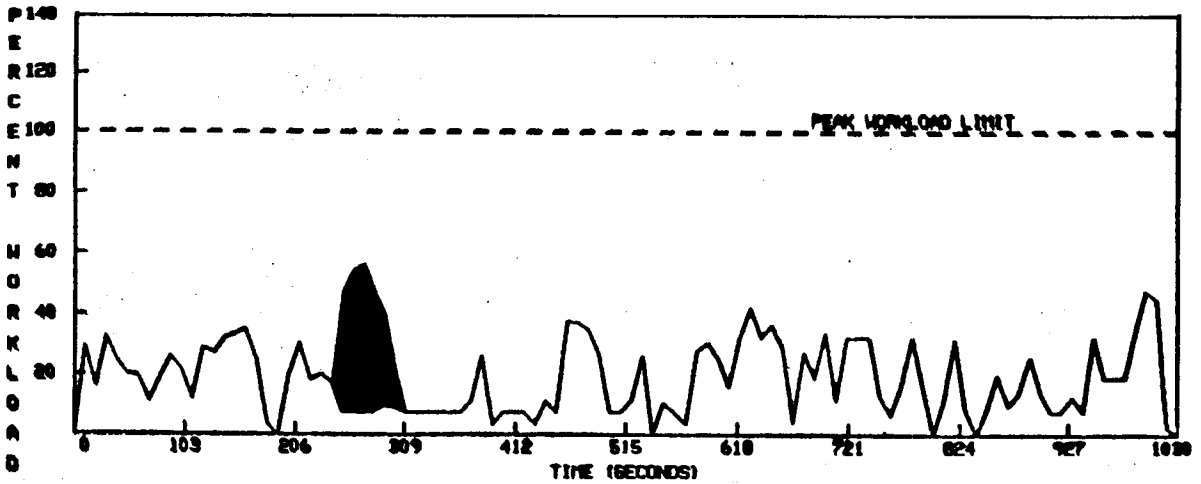

Figure C-92. Advanced Flight Deck, Copilot Tasking, Weighted Channel Average ILS Approach With TCAS Encounter