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**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.**

**Airplane Interior Documentation Group Factual Report
of Investigation
(27 Pages)**

AIRPLANE INTERIOR DOCUMENTATION FACTUAL REPORT OF INVESTIGATION

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NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF AVIATION SAFETY
SURVIVAL FACTORS DIVISION
WASHINGTON, DC 20594

**AIRPLANE INTERIOR DOCUMENTATION GROUP FACTUAL REPORT
OF INVESTIGATION**

A. Accident

Location: 72:37 .46N, 40:39.52W near East Moriches, New York
Date: July 17, 1996 Time: 2031 eastern daylight time ¹
Airplane: Boeing 747-131, N93 119
Operator: Trans World Airlines (TWA) Flight 800
NTSB Accident Number: DCA-96-MA-070

B. Group

Henry F. Hughes, Chairman
National Transportation Safety Board
Washington, DC 20594

Alan T. Brock, Member
New York State Police
Farmingdale, NY 11735

Anthony L. Coppo, Member
New York State Police
Farmingdale, NY 11735

John E. Desmond, Member
International Association of Machinists and Aerospace Workers
Nottingham, NH 03290

Mark H. George, Member
Federal Aviation Administration
Oklahoma City, OK 73125

Gary R. Graham, Member
International Association of Machinists and Aerospace Workers
Jensen Beach, FL 34957

¹ The times referred to here in are based on the 24 hour clock and are Eastern Daylight Time.

Susan G. Graham, Member
International Association of Machinists and Aerospace Workers
Jensen Beach, FL 34957

Michael W. Harris, Member
New York State Police
Farmingdale, NY 11735

Linda M. Kunz, Member
Trans World Airlines
St. Louis, MO 63144

Jeffrey R. Nix, Member
Boeing Commercial Airplane Group
Seattle, WA 98124

C. Summary

On July 17, 1996, at 2031, a Boeing 747-131, N93 119 operated as Trans World Airlines Flight 800 from John F. Kennedy Airport, New York to Charles DeGaulle Airport Paris, France, impacted into the Atlantic Ocean at 72:37 .46N,40:39.52W off the coast of Long Island, New York. The active crew of 18, and the 212 passengers received fatal injuries and the airplane was destroyed. The scheduled air carrier flight was operated and conducted under Title 14, Code of Federal Regulations (CFR) 121. Visual meteorological conditions prevailed and an instrument flight rule (IFR) plan was filed.

D. Details of the Investigation

The Airplane Interior Documentation Group (AIDG) was formed on July 24, 1996, and was assigned the task of documenting the airplane's occupant compartment as well as creating a three dimensional reconstruction of the cabin interior.

The AIDG obtained data from the Boeing Airplane Company and TWA maintenance regarding the airplane's interior components. Over the period from July, 24 1996, through October 1997, all interior parts received by the group were inventoried, examined, identified, and where possible, placed in the interior reconstruction. Only those parts which were verified as having come from a specific location in the airplane were placed in the interior reconstruction.

The AIDG established a standardized protocol which included the identification and examination of all interior airplane component parts received at the Grumman Facility in Calverton, NY that had been recovered by the U.S. Navy, U.S. Coast Guard, and law enforcement agencies. These airplane parts were subsequently inspected by Federal Bureau of Investigation (FBI) explosives technicians and then released to the AIDG for identification, examination, and placement in the reconstruction. The NTSB Fire and Explosion Group has been tasked to catalogue the parts submitted for additional

testing and examination outside the Calverton Facility. The AIDG requested a list of those parts submitted for test and examination outside the Calverton facility at the NTSB, FBI, NASA, and other laboratories however, to date have not received the list or test reports.

On August 8, 1996, the AIDG began the reconstruction of the airplane's occupant compartments. In addition to the 1 to 1 scale interior reconstruction a database was created which consists of documentation of the nature and extent of damage to the airplane interior components, seat unit force vector examination, and photographic documentation of the interior components. As of March 5, 1997, all 21 of the crew seats were accounted for and partially reconstructed and 398 of the 433 passenger seats were accounted for and partially reconstructed. The process is ongoing and it is probable a supplement(s) to this report will be made as new information is developed.

1. Airplane Configuration

The cockpit was configured with the captain and first officers crew seats on the left and right side and the flight engineers crew seat behind the first officer on the right. In addition there were two observer seats on the left behind the captain's crew seat.

The cabin was configured with 10 flight attendant jumpseats on the main deck, and 1 flight attendant jumpseat on the upper deck providing seating for 17 flight attendants. Aft facing double flight attendant seats were forward of and adjacent to doors 1L, 1R 2L, 2R 3L and 4L. Aft facing single attendant jumpseats were forward of and adjacent to doors 3R and 4R. Forward facing single seats were mounted on the bulkheads aft of doors 5L and 5R. An aft facing single seat was mounted on the forward left bulkhead on the upper deck.

Passenger cabin seating was divided into the upper deck and 5 zones A,B,C,D, and E on the main deck. The upper deck was comprised of 8 first class passenger seats, The main deck contained 21 first class passenger seats and 404 coach class passenger seats. (Aircraft seating diagram Figure 1)

2. Cabin Crew

The Flight Service Manager (FSM) and all flight attendants (F/A) on TWA flight 800 successfully completed TWA's FAA approved Initial Flight Attendant Training program. Initial training covered TWA's policies and procedures as well as normal and emergency operations for each aircraft type.

The FSM and all F/As were current and qualified on the Boeing 747 and had successfully completed TWA's Annual Emergency Recurrent Training within the 12 months prior to the accident.

It was not possible to determine the specific jumpseat assignments due to TWA procedures. The only crew sign in sheet is turned into the Captain and carried onboard the airplane. The sign in sheet was not recovered.

Specific training dates for the individual cabin crew members are listed as follows.²

FLIGHT SERVICE MANAGER

Jacques Charbonnier Employee # 14299
Initial training - May 12, 1960
Recurrent training - May 30, 1996

FLIGHT ATTENDANTS

Dan Callas Employee # 100456
Initial training - April 27, 1996
Recurrent training - *N/A

Constance Charbonnier Employee # 13056
Initial training - January 15, 1969
Recurrent training - March 18, 1996

Janet Christopher Employee # 34987
Initial training - July 15, 1970
Recurrent training - March 201996

D. C. Diluccio Employee # 34348
Initial training - June 15, 1971
Recurrent training - February 21, 1996

Arlene Johnson Employee # 44149
Initial training - August 15, 1960
Recurrent training - May 13, 1996

Ray Lang Employee ## 48304
Initial training - June 16, 1976
Recurrent training - July 15, 1996

Maureen Lockhart Employee # 33571
Initial training - October 15, 1970
Recurrent training - February 5, 1996

Sandra Meade Employee # 45553
Initial training - June 1, 1975

²*Denotes F/As that were hired within the last 12 months and were not eligible for recurrent training.

Recurrent training -March7, 1996

Grace Melotin Employee #39153
Initial training - April 17, 1973
Recurrent training - November 13, 1995

Marit Rhoads Employee # 32754
Initial training - May 12, 1970
Recurrent training - November 13, 1995

Mike Schuldt Employee # 39804
Initial training - May 22, 1973
Recurrent training - October 4, 1995

Melinda Torche Employee # 30057
Initial training - May 12, 1970
Recurrent training - June 6, 1996

Jill Ziemkiewicz Employee # 100883
Initial training - May 31, 1996
Recurrent training - *N/A

2.1 Flight Attendant Training

TWA's Initial Flight Attendant Training program and Annual Emergency Review cover federal aviation safety regulations and company policies and procedures, fires fighting, decompressions, inflight illness and injury, evacuation management, ditching /unplanned water landings, crew resource management (CRM) and emergency procedures that are unique to each TWA's aircraft type.

3. Passenger Information

TWA provided a passenger manifest for Flight 800, which indicated that there were 212 passengers of which 96 were male and 116 were female. Of the 212 passengers, 17 were deadheading TWA crew members. 38 of the passengers were children under the age of 18 years, none of which were infants.

The medical and pathological aspect of the investigation will be addressed in the Forensic Medical Group Factual Report (See Exhibit 19A).

Under the provisions of the Title 14 CFR 121.311 (b) infants are persons younger than 24 months. Persons between the ages of 2 years and 18 years of age are considered children.

Airplane Damage and Wreckage Site

4.1 Description of Accident Site

The aircraft impacted into the Atlantic Ocean at 72:37 .46N, 40:39.52W off the coast of Long Island approximately 12 miles east of Center Moriches, New York.

4.2 Damage to Airplane Interior

The examination of interior parts and the degree of damage described is confined to those component parts which were found floating or recovered during the dive and trawling operation. Refer to the Airplane Diagram (Figure 1) for the location of specific cabin interior components. All references regarding damage documentation are based on aircraft forward, aft left, right up and down. The direction toward the center line is referred to as inboard and the direction away from the center is referred to as outboard.

4.2.1 Crew Seats

The aircraft was equipped with 5 cockpit crew seats and 11 F/A jumpseats. All were recovered and examined. See Attachment B which depicts the reconstructed crew seats.

A majority of the crew seats were not tagged at the time they were received at the AIDG hanger. The NTSB Data Base Team placed recovery tags on most of the crew seats between February and April of 1997. The AIDG has not verified the accuracy of the tags and is working with the Data Base team to insure the accuracy of the tags. If warranted the AIDG will file a supplement to this report which describes the findings.

Captain's Seat - MFG P/N 811369-606, Weber Aircraft

The base and pedestal are missing. The seat pan is bent downward on the left. The bottom seat cushion is missing. The right lap belt and anchor are attached, the left anchor is attached but the belt is missing. The crotch strap and shoulder harness are intact. The left and right armrests are attached, however the right armrest cover is torn across the top. The back frame is bent forward and down approx. 10". The back cushion and cover are attached. The cover is torn on the aft right side. The crew life vest is in the back pouch and is intact. The seat is not marked with a recovery tag.

First Officer's Seat - MGF P/N 811370-608, Weber Aircraft

The base and the pedestal are missing and the seat pan is separated from the lower frame. The bottom seat cushion is attached. Both lap belts and anchors are missing. The crotch strap and shoulder harness are intact. The left armrest is missing, the right armrest is deformed down and to the right. The lower portion of the back frame is deformed, the upper portion of the frame is bent down. The back seat cushion is attached. The seat cover is attached but torn. The life vest is missing. The seat is not marked with a recovery tag.

Flight Engineer's Seat - MGF P/N 811372-604 OR-607, AMI

The Flight Engineer's crew seat is designed to face right or rotate to the forward. The seat was found facing right when it was recovered. The following description of the damage is in airplane coordinate reference as opposed to conventional right left front and back.

The Flight Engineer's seat was recovered with the bottom pedestal attached to the seat. Some floor track is attached to the aft side. The seat pan is fractured at the aft left corner and compressed down on the forward side and is twisted from aft to forward. The bottom seat cushion is missing. The forward lap belt anchor and belt are attached. The aft anchor and belt are missing. The crotch strap and shoulder harness are attached. Both armrests are attached. The aft armrest is deformed up approx. 15 degrees and deformed aft. The forward armrest is bent upward approx. 45 degrees and rotated aft. The back frame is bent and twisted approx. 90 degrees forward. The back cushion is missing. The seat cover is torn. The lifevest not attached. This seat is not marked with a recovery tag.

First Observer's seat - MFG P/N 1052-3, AMI

The seat was recovered with the right leg and upper portion of the left leg attached. The seat pan is slightly bent aft and the frame is bent to the right. The seat support is fractured on the left side. The bottom seat cushion is missing. Both lap belt anchors, lap belt, shoulder harness and crotch strap are attached. The back frame is bent slightly forward. The back cushion is attached. The cushion cover is attached with the crew life vest in the back pouch. This seat was recovered in the yellow zone - Tag # B2061

Second Observer's Seat - MGF P/N 965-1, AMI

The seat was recovered with the legs attached but bent to the right. Floor track and flooring is attached to the aft base of the seat. The seat pan has a downward crease in the center. The bottom seat cushion is missing. Both lap belt anchors, lap belt, shoulder harness and crotch strap are attached. The seat back is relatively undamaged. The back

cushion is missing, however the cushion cover is attached and torn . The crew life vest is missing. This seat was recovered in the yellow zone - Tag # B2062

IL Flight Attendant Jumpseat - MFG P/N 971-10B, AMI

The IL F/A jumpseat is a dual aft facing seat located forward and adjacent to the IL door. The FSM was assigned to the outboard seat. The seat was recovered with floor track attached to the left and right floor anchors. Floor panel material and a portion of a floor beam are attached to the left and right track segments

The back of the seat has minimal damaged. The left side panel is attached to the seatbelt anchor. The left and right bottom corners of the seat back are bent aft. The right side panel is missing. Both shoulder harness units are attached. The lap belt on the left side is anchored and the belt is fastened. The lap belt anchors on the right side are unattached. The lap belt is fastened. The interphone holder and interphone cord are intact but the handset is missing. The headrest cushions are attached to the shoulder harness, but not to the seat frame. The back and bottom seat cushions are missing. The seat pan is relatively undamaged. The base of the frame is punctured in several areas. The life vest compartment door was recovered but is not attached to the seat. The auto folding mechanism is not operational. The seat is not marked with a recovery tag.

IR Flight Attendant Jumpseat - MFG P/N 971-53B, AMI

The IR F/A jumpseat is a dual aft facing seat located forward and adjacent to the IR door. 1 F/A was assigned to the outboard seat.

The back of the seat is fractured and twisted down and to the right. The right panel of the frame was recovered but is unattached. The base frame is unattached and damaged. Both shoulder harness units are attached. All lap belt anchors are unattached. Lap belts are unfastened. The headrest cushions are attached to the shoulder harness, but are not attached to the back seat frame. The back and bottom seat cushions are missing. The interphone handset holder and handset are missing however the interphone cord is attached. The seat pan is attached and is bent down at the aft left and forward right corners. The seat pan is creased in the center. The auto folding mechanism is not operational. The life vest and compartment are missing. The right side panel is separated and marked with a recovery tag - yellow B245. The seat is not marked with a recovery tag.

2L Flight Attendant Jumpseat - MFG P/N 971-37B, AMI

The 2L jumpseat is a dual aft facing seat located forward and adjacent to the 2L door. 2 F/As were assigned to this seat.

The seat frame and seat back are intact. The back of the seat is fractured at the top center. The left and right side panels of the frame are attached, however the back and right doghouse panel are missing. Both shoulder harness units are attached as well as all

lap belt anchors. The lap belts are not fastened. The interphone handset holder is attached. The handset is missing. Headrest cushions and the seat cushion are attached and have minimal damage. The seat pan is relatively undamaged. The auto folding mechanism is operational. The life vest compartment is intact however the front door is missing. The seat is not marked with a recovery tag.

2R Flight Attendant Jumpseat - MFG P/N 971-15B, AMI

The 2 RF/A jumpseat is a dual aft facing seat forward and adjacent to door 2R. 1 F/A was assigned to the outboard seat.

The seat back is detached from the frame on the right side, The top of the seat frame is bent aft and is fractured . The outboard right corner of the seat back has a diagonal tear from left to right approx. 6“ long. The side panels are attached to the frame, the back cover is missing. Both shoulder harness units are attached. Both lap belt anchors for the outboard attendant are unattached. The lap belt anchor for the inboard attendant is attached on the left and is unattached on the right. All lap belts are attached to the anchors and are unfastened. The interphone handset holder and handset are missing. The headrest cushions are attached to the shoulder harness. The inboard headrest cushion is torn on the top left corner. The seat pan is intact and relatively undamaged. The auto folding mechanism is operational. The back and bottom seat cushions are missing. The lower life vest compartment door is attached. The seat is not marked with a recovery tag.

3L Flight Attendant Jumpseat - MFG P/N 971-33B, AMI

The 3L F/A jumpseat is a dual aft facing seat located forward and adjacent to door 3L. 2 F/As were assigned to this seat. The seat sustained heavy thermal damage.

The entire seat frame is missing. The left side panel was recovered unattached. The back of the seat is burned. Both shoulder harness anchors are attached. The outboard harness is missing. The inboard anchor has an approx. 24” piece of the harness attached. This piece is melted. The lap belt anchors and lap belts are missing. The interphone handset holder is melted. The interphone handset is missing from the seat but was recovered separately. Headrest cushions and seat cushions are missing. The seat pan is not attached to the back. The pan is fractured in the center and is heavily damaged by fire. The auto folding mechanism is not operational. The life vest and compartment are missing. This seat was recovered in the green zone - Tag # C853.

3R Flight Attendant Jumpseat - MFG P/N 972-54B, AMI

The 3R F/A jumpseat is a single aft facing seat located forward and adjacent to door 3R. 1 F/A was assigned to this seat. The seat sustained minimal thermal damage.

The seat is attached to the frame. The left side panel is attached. This panel is bent up and to the left. The left panel has foreign material melted to the top. The right

side panel is attached. The top of the right panel is bent down and to the right. The bottom of the panel is bent forward. The seat back has minimal damage. The shoulder harness anchor and lap belt anchors are attached. The lap belt is unfastened. The interphone handset holder and interphone handset are missing. The headrest cushion is attached to the shoulder harness and is torn on the aft top. The back and bottom seat cushions are missing. The seat pan is attached to the back. The auto fold mechanism is not operational. The underside of the seat pan shows external impact damage. The life vest door is attached and deformed forward. The seat is not marked with a recovery tag.

4L Flight Attendant Jumpseat - MFG P/N 971-1OB, AMI

The 4L F/A jumpseat is a dual aft facing seat located forward and adjacent to door 4L. 2 F/As were assigned to this seat.

The seat frame is missing. The seat back is fractured and the bottom of the back is accordianed up on the left side. Both side panels are missing. Both shoulder harness units and harnesses are attached. Both flight attendant lap belt anchors are unattached. The lap belts are fastened. The interphone handset holder is missing. The interphone handset cord is attached to the seat back. The headrest cushions are attached. The back and bottom cushions are missing. The seat pan is bent up and aft on forward left corner, deformed forward on the aft edge with a crease in the middle. The auto folding mechanism is not operational. The life vest and compartment are missing. The seat shows evidence of sooting. The seat is not marked with a recovery tag.

4R Flight Attendant Jumpseat- MPG P/N 972-5B, AMI

The 4R F/A jumpseat is a single aft facing seat located forward and adjacent to door 4R. 1F/A was assigned to this seat.

The back of the seat frame is missing. The bottom of the frame and 3 of the 4 floor anchors are attached. The aft left anchor is missing. The bottom frame is bent up in the center. The seat back bottom is severely bent up and forward. The seat back top is bent down and to the left. The right side panel is bent up. The left side panel is missing. The shoulder harness anchor and harness are attached. The left lap belt anchor is unattached. The right lap belt anchor is attached. The lap belt is unfastened. The interphone handset holder and interphone handset are missing. The interphone handset cord is attached to the seat back. The headrest cushion is attached to the shoulder harness. The front of the seat pan is bent up and to the right. The seat pan is creased downward in the center. The seat pan is separated from the back on the left. The bottom seat cushion is attached. The auto folding mechanism is not operational. The life vest compartment door is missing. The seat is not marked with a recovery tag.

5L Flight Attendant Jumpseat - MFG P/N 973-1B, AMI

The 5L F/A jumpseat is a single forward facing seat aft and adjacent to door 5L. The seat is mounted on a bulkhead. 1 F/A was assigned to this seat. The seat was recovered attached to a partial bulkhead.

The headrest cushion is intact but torn on the right edge, and mounted on the bulkhead. The seat back cushion is missing. The shoulder harness and lap belt anchors are attached. The lap belt is unfastened. The seat pan is fractured and bent down on the left front corner, is creased in the center and bent up along the back edge. The back seat cushion is missing. The auto folding mechanism is not operational. The life vest for this jumpseat is stowed in the adjacent closet. This seat was recovered in the green zone - Tag # Z2525

5R Flight Attendant Jumpseat - MFG P/N 973-IB, AMI

The 5R F/A jumpseat is a single forward facing seat aft and adjacent to door 5R. The seat is mounted on a bulkhead. 1 F/A was assigned to this seat. The seat was recovered attached to a full bulkhead.

The headrest cushion is intact, but torn and punctured in the lower right hand corner. The cushion is mounted on the bulkhead. The seat back is attached to the bulkhead but the cushion is loose. The back is crushed up and to the left and has numerous fractures. The bottom seat cushion is missing. The shoulder harness unit and harness is attached, The right seat lap belt anchor is attached to the bottom seat frame, but not to the bulkhead. The left lap belt anchor is unattached. The lap belt is fastened. The seat pan is bent slightly up and is creased in the center. The auto folding mechanism is not operational. The life vest for this jumpseat is stowed in the adjacent closet. The seat was recovered in the red zone - Tag #A2010.

Upper Deck Flight Attendant Jumpseat (UD) MFG P/N 40126-1-39 Carrier Aircraft Inc.

The UD F/A jumpseat is a single aft facing seat mounted on the left forward bulkhead of the upper deck. 1 F/A was assigned to this seat.

The seat back is missing. The shoulder harness attachment unit is missing. The harness is attached to the lap belt. The headrest cushion is missing. The seat pan is connected to the bulkhead on the right side. The left side is not connected. The seat cushion is missing. The right lap belt anchor is attached, the left lap belt anchor is unattached. The lap belt is fastened. The life vest pouch is missing. The seat is not marked with a recovery tag.

4.2.2 Passenger Seats

The airplane's interior contained 433 passenger seats, of which 29 were first class seats and 404 were coach seats. Components of 398 passenger seats were partially reconstructed, 25 first class seats/seat components and 373 coach seats/seat components

were identified. As the seat components were identified they were placed into the cabin interior reconstruction (See Attachment C airplane interior diagrams).

A damage examination and digital photographic documentation data base was created to record the nature and extent of damage to each seat unit and individual seat. The group created a seat documentation form to standardize both seat unit and individual seat examination (See Attachment C). Seats and units were inspected for direction of force, thermal damage and overall condition. The following is a summary of the identification and reconstruction of the passenger seats which is divided into cabin zones beginning on the upper deck and progressing on the main deck aft:

Upper Deck

The upper deck contained 8 first class seats of which 6 were recovered. Row 91 seats 8 and 9 are missing. The “Electra” series first class seats were manufactured by Avio Interiors, Latina, Italy, They were manufactured under TSO-C396 and were serialized with a 171L3 prefix.

A Zone

The main deck first class area (A zone) of the cabin was equipped with 21 “electra” series first class seats manufactured by Avio Interiors, Latina, Italy. The passenger seats were manufactured under TSO-C396 and were serialized with a 171L3 prefix. 19 seats were reconstructed. The seats in row 4 seats 1 and 2 were not recovered.

B Zone

B Zone contained 62 coach type passenger seats of that number 55 were recovered. 7 were missing, Seats 11-4,5, and 7 and 12-1,2,3, and 9. The passenger seats were remanufactured in October of 1984 by BE Aerospace of Litchfield, CT. and were model 901 seats serial prefix 403359. The quad (center section) seat in row 12 was manufactured by UOP. The seats were manufactured to comply with TSO-C39.

C Zone

There were 114 coach type passenger seats installed in the C zone of which 105 were recovered. 9 seats from 21-1,2,3; 23-1,2,3,0; and 28-1,3 were missing or were too fragmented to be identified. The model 901 seats were remanufactured Weber under TSO-C39.

D Zone

The D Zone contained 90 coach type passenger seats. Of that number 85 were recovered. 5 seats 30-1,2,3; 36-2; 38-4 were missing or too fragmented to be identified or reconstructed. The model 901 seats were manufactured by UOP under TSO-C39.

E Zone

The E Zone contained 138 coach type passenger seats. Of that number 129 were recovered. 10 seats were missing or too fragmented to identify and reconstruct 40-3, 41-2, 46-1, 48-1, 4, 7, 8, 50-0, 52-5, and 53-5. The model 901 seats were manufactured by UOP under TSO-C39.

Attachment C and its accompanying seating diagrams graphically depict the location which seats were or were not recovered, extent of damage to the crew and passenger seats, as well as information concerning the direction forces applied against the seat units and individual seats.

Galleys

The aircraft was equipped with 6 galleys and 1 duty free module. These galleys contained 22 carts: 5 liquor carts, 2 duty free, 2 trash carts, 1 food cart, 12 single serve meal carts³ and 13 coffee makers. All 22 carts and 13 coffee makers were recovered. Additionally, 5 collapsible in aisle serving carts were recovered. The First Class double tray carrier was recovered. All 5 four drawer center modules were recovered.

23 square meal carriers and 33 rectangular meal carriers were recovered. The large metal trash container and 5 of the 11 galley trash bins were recovered. All aforementioned equipment sustained heavy impact damage.

Miscellaneous galley supplies, i.e., coffee pots, silverware, serving trays, wine glasses, plastic entree plates, etc. were recovered with varying degrees of damage.

A Galley

The A galley was recovered in two pieces. The bottom portion was designed to hold 1 double first class tray carrier, 1 four drawer center module, 1 trash bin and 1 first class liquor cart. The first class liquor cart and trash bin are missing. The double first class tray carrier is deformed to the left. The 4 drawer center module is deformed to the left and the bottom drawer is missing. Damage to the bottom unit is to the left. All walls are attached. The lower left side wall is deformed to the left and aft. The lower right side wall is deformed to the left. The floor is missing the front ramp and is deformed up approx. 1" in the middle and 2" in at the forward left corner. The top of the right interior divider is deformed to the left. The left interior divider is deformed to the left in the middle of the wall and is detached at the top. The galley counter is detached at the left side. The rear of the counter is deformed downward. The rear splash guard is deformed downward and is torn .

³A single serve meal cart is an electrically heated food service cart used in the coach section of the airplane.

The top portion of the galley contained 4 ovens and 1 coffee maker. All four ovens are deformed to the left. The coffee maker is intact. The upper right and left walls are angled to the left. The top frame is bowed in the center. The two top frame drawers and light panel are attached.

The left ceiling linen stowage bin was recovered attached to the top galley frame. The aft wall is missing. The aft left frame is separated at the base. The top is separated on the aft side and is deformed upward.

Upper Deck (UD) Galley

The UD galley has two sections. The forward section faces right and runs from forward to aft. It contains four rows of three slots (12) for the UD food carriers and a trash bin. Food carriers remained in place in row 2, slots 1 and 2 of the unit. The trash bin is missing.

All 4 doors are missing from the unit. The forward top corner of the unit is bent aft. The forward wall and 3 intermediate walls are attached. The top portion of the aft side wall is unattached. The counter surface is deformed and unattached. The floor fittings are attached to the base of the unit. The circuit breaker panel is attached.

The second section of the UD galley faces forward and runs from the left to right and ends approximately at the center line of the aircraft. This section was recovered in two pieces. The bottom of this unit contains 3 rows of three slots (9) for UD food carriers. Two of three doors are attached. The right side of the galley counter is deformed upward. The top of the unit is designed to hold 2 coffee makers, 2 ovens and 1 bun warmer. The coffee maker and the ovens were recovered separately. The damage to the unit is to the right. The right outside wall is separated from the galley and divided into multiple pieces. The left wall of the unit is deformed to the right. The base of the unit is deformed upward. Floor fittings are attached to the base. A stowage slot for an in-aisle serving cart was mounted on the aft unit wall. This compartment was recovered unattached.

B Galley

The B Galley was recovered in two sections. The bottom section is designed to hold 2 coach single serve meal carts, 1 food cart, 1 four drawer center module and 1 trash bin. All of the above were recovered separated from the galley unit.

The lower right wall is attached to the base but not to the counter. The forward portion of the wall is deformed aft. The lower left wall is attached to the counter but not to the base. The lower forward wall is deformed aft and has 5 fractures that extend from the base to the countertop. Both interior dividers are unattached and deformed. The right trash bin door is missing. The counter is deformed up in the aft right corner. The forward portion of the counter is deformed aft and the stainless steel surface is fractured

diagonally from the forward left corner of the trash bin opening to the left approx. 4" in length. A section of the honeycomb core is protruding through the fracture. The splash guard is attached to the counter and deformed aft. All 3 mushroom fittings and 1 center module lock are attached to the base. The forward right floor fitting is attached to the right wall and has a section of floor structure attached to it. The aft right floor fitting is not attached to the right wall. The forward and aft floor fittings are attached to the left wall.

The upper portion of the B galley is designed to hold 5 rectangular meal carriers, 1 coffee maker and 1 dual, single serve meal cart control unit. This portion was recovered with 1 rectangular meal carrier in the B6R position. The coffee maker and coffee pot are in place but deformed up and forward. The single serve cart control unit is attached to the top frame of the galley by wiring.

The upper portion of the galley is not attached to the lower portion. The right sidewall is intact except for a fracture in the forward mid portion. The left sidewall is intact and is slightly deformed to the left in the lower forward corner. The bottom shelf is detached from the left sidewall but is attached to the right sidewall. The top frame is deformed down on the left side. The left overhead storage drawer is deformed forward. The right door is deformed slightly forward. The light switch panel is deformed moderately forward. The forward panel is deformed aft portion of which is separated on the lower left side.

The right sidewall decorative panel is missing. The left sidewall decorative panel is not attached. The forward decorative bulkhead is attached to the galley and has significant damage. The carpeting for all of the decorative panels was recovered, but not attached to the panel.

C Galley

The C galley was recovered in two sections. The bottom section is designed to hold 4 single serve meal carts, 2 trash bins, and 1 four drawer center module. The meal carts and 4 drawer module were recovered separately.

The lower left side wall is attached to the base and deformed aft and right. The lower right wall is detached and deformed aft and right. The floor base is deformed down on the forward edge approx. 90 degrees and is fractured on the right side. All 4 cart mushroom fittings and 1 center module lock are intact. The cart ramp is missing. Both interior walls are unattached and deformed upward on the bottom. The trash compartment door on the right side is missing. The trash compartment door on the left side bent aft and rotated approx. 270 degrees counter clockwise in the plan view. The counter is not attached and fractured at the attachment on the left and right side. Both single serve meal cart electrical cord stowage boxes are compressed downward. The splash guard is detached from the counter. The aft panel is intact but detached from the unit. The aft panel is common to the upper and lower portion of the unit. A 1 1/2" x 2" puncture

exists in the aft panel approx. 54" from the floor and approx. 8" from the left edge of the panel. The puncture penetrated both the decorative panel and the structural panel of the galley. The structural panel has 3 petal shaped tears approx. an inch in length that extend forward. The 4 floor fittings are attached to the side panels/base.

The upper portion of the C galley is designed to hold 6 rectangular carriers, 2 dual single serve meal cart control panels, and 3 coffee makers. The right coffee maker was attached and the warmer pad is deformed up and left. The left inboard and outboard coffee makers are unattached. Three of the single serve meal cart control panels were recovered and are unattached.

The upper portion of the C galley is attached to the lower portion on the left side. The right wall is not attached and the forward portion is deformed to the left. The left wall is attached to the lower and upper shelves. The left divider wall is attached at the bottom to the lower shelf but not to the upper shelf. The right divider wall is attached to the lower and upper shelves. The aft top portion is deformed forward. The lower shelf is deformed down and forward. The upper shelf is deformed down and forward in a similar pattern as the lower shelf. The left forward portion of the upper shelf is deformed down and forward. The C6R compartment is missing. The three overhead stowage drawers are missing. The light switch panel is intact and deformed aft. The upper portion of the overhead stowage compartment is severely deformed and fractured in the center.

The left decorative panel is attached to the left structural panel at the top and is deformed left and is fractured in the center. The right decorative panel is attached to the right structural wall. Several bubbles exist on the external surface of the right and left decorative panels. All carpeting for the decorative panels was recovered. The overall damage to the galley is to the right.

D Galley

The unit was recovered in multiple sections. The lower portion of the galley was designed to hold 2 coach liquor carts, 1 four drawer module, 2 single serve meal carts, and 2 trash bins. Several components of single serve meal carts, 2 liquor carts and the four drawer center module are located within the recovered lower portion of the galley. These items are crushed.

The lower left sidewall is detached and crushed. The vertical supports are missing. The lower portion is tom from the lower structure. There is an approx 2" diameter puncture in the lower aft portion. The right sidewall is unattached and crushed. The right trash container opening is attached to the right sidewall. The right interior wall is unattached and is deformed down and to the right. It was recovered sandwiched between the liquor cart and four drawer module. The left interior wall is missing.

The base is separated into two sections with the fracture approx. 58" from the right side. The right section of the base is deformed upward on the left and right sides. The 2 mushroom fittings and 1 center module cart lock fitting are attached to the right

side of the base. The floor attachment fittings are missing on the right side. The left portion of the base is deformed slightly upward. The 2 mushroom fittings are attached. The two floor attach fittings are attached to the left side of the base. A section of seat track is attached to the aft fitting. A section of floor panel is attached to the track on the inboard side. The aft base extension strip is separated from the left portion of the base but is attached to the right portion. The ramp is missing.

The counter is attached to the forward panel in the center and is severely deformed upward in the center of the aft side. The aft right corner of the counter is bent aft at the trash container opening. The counter has a 14" fracture extending from the aft edge diagonally to the left that initiates 35" from the right edge. The forward panel is severely crushed upward in the center.

The upper portion of the galley is designed to hold 5 rectangular carriers, 1 dual single serve meal cart control unit and 3 coffee makers. The dual single serve meal cart control unit is attached by wiring only and is crushed. The outboard right coffee maker is not attached. The inboard right side coffee maker is attached and the brew cup latch handle is missing. The left side coffee maker is attached. The 3 coffee pots are attached to the coffee makers. All 3 warmer pads are bent up. The upper portion of the D galley is not attached. The left wall is not attached and has an approx. 7" tear in the center. The tear exhibits petaling in the inboard direction. The right wall is not attached and is folded in half with the bottom section rotating inboard. The lower shelf is not attached and is deformed upward in the center. The upper shelf is not attached and is deformed in multiple areas both upward and downward. The left side of the upper shelf is deformed to the right. The three overhead stowage drawers are missing. The light switch panel is attached to the upper shelf and is deformed aft. The left center divider is detached from the upper shelf but attached to the lower shelf and is crushed upward. The right divider is attached to the upper shelf but not to the lower shelf and is crushed upward. The overhead support structure is not attached. The upper shelf and overhead compartment have multiple tears at attachment locations. The right and left walls of the shelf unit are missing.

Segments of the decorative panel are attached to the walls. The forward wall carpeting is attached to the panel.

E Galley

The bottom portion of the galley was designed to hold 4 single serve meal carts, 1 four drawer center module and 2 trash bins. Several components of the center module, single serve meal carts and 1 trash bin were recovered in the lower portion of the E galley and are crushed.

The lower left sidewall is not attached. The sidewall is crushed and has multiple fractures. Each fracture exhibits petaling from either the left or the right side. The lower right sidewall is attached to the base and is crushed and deformed to the right. The sidewall has a large fracture in the upper forward portion and smaller fractures in

multiple locations. The right and left interior walls are attached to the base and are crushed. The base is attached to the aft wall. The left aft corner of the base is deformed up. The right forward corner is deformed down.

The forward edge of the base is deformed up except in the location of the outer edges of the 4 drawer center module. The base is locally deformed downward in the left center portion. The base has a fracture that initiates 8" from the front edge and 28" from the left edge. This fracture extends 21" aft. The ramp is attached to the base and has multiple upward and downward bends. All four mushroom fittings and the center module lock are attached to the base. The left inboard mushroom is connected to the left side of the 21" fracture. The base and mushroom are rotated to the left at approx. a 45 degree angle. The aft wall is attached to the base and is crushed.

The counter is not attached and is deformed downward in a lateral direction approx. 11" from the forward edge. The forward and aft edges of the counter are deformed up. The right forward corner is bent down. The splash guard is missing.

The upper portion of the E galley is designed to hold 6 rectangular carriers and 2 coffee makers. This portion was recovered with the left coffee maker attached. The coffee maker is deformed to the aft. The forward portion of the warmer pad is bent up. The right coffee maker is not attached.

The upper portion is not attached to the lower portion. The left wall is attached to the upper shelf but not to the lower shelf. The wall has several fractures. The right wall is not attached and the bottom portion is crushed. The lower shelf is unattached and was recovered in three sections. The right section is approx. 17" long. The center section is approx. 14" long. The left section is approx. 55" long. The left side of the right section is deformed upward. The forward right side of the center section is deformed upward and the aft right side is deformed down. The right corner of the left section is deformed down. The remainder of the left section has a wave like upward and downward deformation. The upper shelf is deformed down on the forward right corner. The aft left corner of the shelf is bent downward. The left divider wall is attached only to the upper shelf and is crushed. The right divider wall is missing. The three drawers in the overhead cabinet are attached. The front of the right and left drawers are missing. The front of the center drawer is intact. The light switch panel is bent aft. The top right corner of the cabinet is deformed upward. The 2 dual single serve meal cart control units are missing.

The left decorative wall is missing. Segments of the right decorative wall are attached to the right galley wall. The aft decorative wall is attached to the lower aft galley wall. The 2 trash bin doors are missing.

4.2.4 Stowage Units

First Class Auxiliary Bar (L1)

The right wall is separated from the unit and is severed approx. 34" from the floor. The bottom shelf remains attached to the floor. The bottom shelf right divider is deformed to the right. The left divider is missing. The forward left corner is missing. Both the middle shelf dividers are deformed to the right. The top shelves right side is deformed downward. The right shelf divider is deformed to the left. The left side shelf divider is undamaged.

The back of the unit is deformed to the right approx. 8" from the floor on the left side to approx. 32" high from the floor on the right side. The coach video monitor is intact including the glass screen. The trash compartment on the left side is separated from the unit with minimal damage. The left interior wall is deformed to the left approx. 4". The top of the unit was recovered with burned insulation and a portion of a valve from the air distribution system.

First Class Understair Auxiliary Bar

The left wall is detached from the unit and is deformed to the right at approx. 22" from the base and is then deformed to the left at the top of the wall. There is a hole in the side of the wall approx. 3 1/2' in height and 1 3/4" wide, approx. 23" from the bottom. The middle wall is detached from the unit. The wall is deformed to the left at the top. The right wall is deformed to the left at 11" from the bottom. The back of the unit is separated into two pieces. The lower piece is connected to the right side wall. The base of the unit is deformed up approx. 1/2" at the aft left corner. Floor fittings are attached to the base.

First Class Coat Compartment

Left portions of the forward and aft walls were recovered. The base of the unit was recovered attached to the airplane floor. The fold down work shelf is separated from the metal hardware which is attached to the left front wall. The coach video monitor, normally located on the aft right wall was recovered separately and was destroyed. The top portion of the unit was not recovered.

Upper Deck Coat Closet

The unit was recovered intact. The top of the unit is fractured on the upper right corner. The doors are unattached but were recovered. There is a fracture on the lower half of the right door. The base panel and floor attach fittings were not recovered.

Upper Deck Stowage Unit

The stowage unit separated at its construction points. The damage is to the left. The bottom left side of the base is deformed upward. The 2 aft floor fittings are

separated from the base. The forward right fitting is attached to the base. The forward left fitting is attached to the forward panel brackets. Both interior walls are deformed to the left. Both doors were recovered, but not attached to the unit. The top portion of the right door is bent forward and the latch is missing. The left door is fractured at the lower right corner. The top portion of the left door was recovered separately. The top panel is separated from the unit. The video monitor is attached to the top panel and is destroyed.

B Zone Liquor Cart Stowage Unit

The B zone liquor cart stowage unit is located aft of D and E lavatories. The unit is 18 %" wide, 75 %" high and extends from LBL35 to RBL35. The unit is designed to hold 2 coach liquor carts, 2 rectangular carriers, 4 collapsible in aisle serving carts and magazines.

The forward wall is attached to the ceiling of the unit and is fractured on the lower left side approx. 29" from the left base. The lower right side is also fractured. The aft wall is attached to the ceiling and is fractured across the bottom. The aft wall is also fractured in the center of the left side.

The left and right base plates are not attached. The left base plate has the cart mushroom fitting attached. The bottom of the liquor cart is attached to the mushroom fitting. The left base plate is deformed upward in several pillow like shapes that create a pattern which corresponds to the outline of the base of the cart. The wheels of the cart are fractured on the bottom at the interface of the wheel and the base plate. The left base plate is fractured on the forward inboard side and the forward left side. The two matching pieces remained attached to the forward wall of the unit. The right base plate has the cart mushroom fitting attached. The base plate is deformed upward in a pillow like shape. The mushroom fitting is deformed up in the aft left corner. The right base plate is fractured on the forward and aft inboard side. The two matching pieces remained attached to the interior longitudinal wall.

The left lower shelf is attached and deformed up on the left side. The left lateral interior wall is attached. The door for the left aisle cart stowage area is attached and intact. The lower shelf of the left library is attached and deformed upward on the left side. Two of the three magazine dividers are missing. The aft divider is attached. The left magazine restraining bar is attached. The door for the rectangular carrier stowage is not attached but was recovered. The door for the left liquor cart stowage area is not attached. The ceiling panel of the unit is attached and deformed upward on the left side.

The lower shelf on the right side is attached and undamaged. The right interior wall is attached and undamaged. The door for the right aisle cart stowage is detached and undamaged. The lower shelf for the right library is attached and undamaged. The three magazine dividers are attached and undamaged. The right magazine restraining bar is attached and deformed aft. The door for the right rectangular carrier is attached and undamaged. The door for the right liquor cart is not attached and deformed to the right

on the aft side. The honeycomb and inboard skin of the curved portion of the door is missing.

The forward right the interior forward right and the interior aft right floor fittings are attached to the unit. Each fitting is fractured at one of the two track attachment points.

Decorative wall carpet is detached and was recovered. The decorative door carpet is attached to the left door.

Duty Free Stowage Area

There are three sections to the unit. The lower portion provided stowage for 2 trash carts, 2 duty free carts, and 2 rectangular carriers. The middle section provided magazine stowage on the left and right side. A stowage compartment with an aisle opening door was on the left and right side. The upper section provided stowage for pillows and blankets with an aisle opening door on the left and right side and 2 aft opening doors. Several components of 2 trash carts, 2 duty free carts, and components from 2 rectangular carriers were recovered in the lower section of the module and are crushed.

The left wall of the lower section is detached and crushed. The lower portion of the wall is bent to the left. The right wall is attached to the counter of the middle section and is bent to the right and up. The lower edge is attached to the base. The base was recovered in two pieces and is deformed upward. The left piece is approx. 47" long. Three floor attach fittings attached to the airplane seat tracks at the four seat track locations. There are three section of airplane floor panels that are attached to the seat tracks. The four mushroom fittings are attached to the base. The lower right aft corner of the high security kit stowage compartment is protruding through the base and the airplane floor. The cart ramp is missing on the right portion of the base but is attached on the left portion. The base is depressed locally at each cart wheel position. The forward wall is detached and was recovered in two pieces. The forward wall is separated vertically 36" from the left edge. The left piece is crushed on the bottom and the panel inserts on the upper edge are torn from the panel. The right wall is detached and crushed at the bottom.

The counter is attached to the support structure for the upper stowage section. The center of the aft work space is deformed severely upward. The aft left corner is deformed to the right and the left wall is attached to the counter but detached from the upper section. Additionally, the aft left wall of the top counter is bent forward approx. 90 degrees. The all right wall is deformed to the aft. The forward wall of the right library is deformed aft. The magazine dividers for the right library are missing. The door to the forward right miscellaneous stowage compartment is missing. The forward wall of the left library is crushed and deformed aft. The three magazine dividers for the left library are crushed. The door for the left miscellaneous stowage compartment is detached and deformed on the upper aft and lower forward corners.

The left side of the aft portion of the lower shelf for the upper section is tom longitudinally 12” from the left wall. The remainder of the aft portion of the lower shelf is deformed severely downward. The right portion of the lower shelf is detached from the aft left wall of the middle section and is deformed upward. The ceiling of the upper section is deformed up on the left. The right side of the ceiling is bent upward at an approx. 90 degree angle. Both doors for the pillow/blanket compartments are missing. Both door hold open supports are attached to the upper section. The internal lateral wall of the upper section is deformed down and aft. The compartment divider panel is not attached to the internal lateral wall or the ceiling but is attached to the lower shelf. The aft right side wall is intact except for the decorative laminate and is attached to the lower shelf but not to the ceiling. The forward right compartment door is attached and intact but deformed inboard. The forward portion of the lower shelf is deformed upward on the right side and downward on the left side. The aft left wall is intact and attached to the lower shelf and ceiling. The forward left compartment door is missing. Decorative carpeting is attached to the forward wall.

5 L Closet

The closet located just aft of the 5L door was destroyed. Reconstruction was not possible due to the severe damage of parts. Four of the six pieces that makeup the large metal trash bin housed in this closet were recovered. These pieces were heavily damaged.

Rear Left Closet

The four shelf unit was the only identifiable item recovered from this closet. The forward wall of the shelf is deformed forward. The rear wall is deformed aft. The bottom shelf is deformed up. The remaining three shelves are deformed down.

5R Closet

The closet located just aft of the 5R door was destroyed. The top shelf of the unit was the only identifiable item recovered from this closet.

Stowage Bins

Numerous overhead stowage bins, parts of overhead stowage bins, and parts of the UD side stowage compartments were recovered. These stowage units were destroyed.

The Cabin Documentation Group unsuccessfully attempted to reconstruct the overhead bins. It was not possible due to the highly fragmented pieces and redundant use of similar parts.

4.2.5 Lavatories

The aircraft interior contained 13 lavatories, 11 on the main deck and 2 in the UD. All 13 lavatories were destroyed. 13 stainless steel sinks and toilet bowls were recovered. Components from individual lavatories were identified. Total reconstruction of the lavatories was not possible due to the heavy damage and the usage of common lavatory components in multiple locations.

4.2.6 Other Cabin Components

It was not possible to reconstruct the sidewall panels, passenger service units, ceiling panels, windows, interior lights or floor track emergency lights due to the high degree of fragmentation and the redundant use of similar parts used in multiple locations throughout the cabin.

4.2.7 Video Equipment

The video control unit, 5 projectors, 5 video screens, 3 video monitors and the video tape safe were recovered. All except 1 video monitor sustained heavy impact damage.

4.2.8 Cabin Doors

There are 10 type 1 cabin doors, 5 on the left and 5 on the right. Additionally, a crew service door is located on the upper deck in the flight deck area, aft of the Flight Engineer panel. All doors were recovered.

Slide/rafts are mounted on all doors on the main deck except for the Number 3 doors which have ramp/slides. Doors 1,2, and 4 were equipped with Air Cruisers slide/rafts, MFG P/N D30440-1 05. The number 5 doors were equipped with Air Cruisers slide/rafts, MFG P/ND30441 -105. The number 3 doors were equipped with BF Goodrich ramp/slides MFG P/N 7A1418-5 (3L) and MFG P/N 7A1418-2 (3R). All slide/rafts and ramp/slides were recovered. The 3R ramp/slide is separated into two pieces. The 3L ramp/slide has thermal damage on the upper 2/3 portion of the ramp/slide.

The 1L door is missing the door handle. The slide/raft arming mechanism is deformed aft, approx. 1 1/2" The forward and aft bulkhead assist handles are attached. The door mounted assist handle is missing. The window is intact. The door was recovered in the yellow zone - Tag # B134 8/4/96

The 1R door is split into two sections top and bottom. The door mounted assist handle is missing. The forward bulkhead and door assist handles are missing. The aft bulkhead assist handle is missing a section of the handle approx. 5" in the middle. The slide/raft arming mechanism is missing. The window is missing. The door was recovered in the yellow zone - Tag#B118 8/2/96

The 2L door aft bulkhead and door mounted assist handle are attached. The forward bulkhead assist handle is missing. A piece of the decorative panel is attached in the area around the door handle. The window is intact.
The door was recovered in the red zone - Tag#A1368/5/96

The 2R door is cracked above the door mounted assist handle. All door assist handles are intact. The window is intact.
The door was recovered in the red zone - Tag#A0768/3/96

The 3L door forward base comer is deformed upward approx. 10". The aft bulkhead assist handle and the door mounted assist handle are intact. The forward bulkhead assist handle is embedded in an environmental control system duct that was located forward of the number 3 doors. The approx. 2" section embedded in the duct is not sooted. The exposed portion of the handle shows sooting. The window is intact.
The door was recovered in the green zone - Tag # Z3256

The 3R door is heavily sooted with some burned sections. The forward base comer is deformed up approx. 15". The door assist handle is fractured and missing approx. 4" of the center of the handle. The slide/raft arming lever is deformed upward approx. 2". The window is intact.
The door was recovered in the green zone - Tag#C2178/9/96

The 4L door is fractured and separated into 2 pieces approx. 49" from the top. The base of the door is deformed upward approx. 3". The forward bulkhead assist handle is fractured, the aft handle is fractured. An approx. 1" piece of the bottom section is still attached to the bulkhead frame. The door mounted assist handle is undamaged. The door handle and window are missing.
The door was recovered in the green zone - Tag # C124 8/6/96

The 4R door base is deformed upward at approx. 3" on the forward corner. The aft base comer is deformed up approx. 7". All of the assist handles are attached, however the door mounted assist handle is deformed aft approx. 3". The door handle is missing along with the windows.
The door was recovered in the green zone - Tag#C1158/5/96

The 5L door is separated into two pieces. The base of the door is deformed upward approx. 14". All assist handles are attached. The door window is missing. The door handle is separated from the door.
The door was recovered in the green zone - Tag # C410 8/14/96

The 5R door is deformed upward approx. 23" at the base. The door handle and window are missing. The door mounted assist handle is fractured and the aft bulkhead assist handle is missing.
The door was recovered in the green zone - Tag # C404 8/14/96

The crew service door and escape slide were recovered. The crew service door was attached to the cockpit crown piece of wreckage. The escape slide was not attached but was recovered.

The crew service door was recovered in the yellow zone - Tag # B215 8/8/96

4.2.8 Carpet

The cabin documentation group identified and examined all floor and bulkhead carpet recovered. The floor carpet was matched to TWA diagram #G03911 5/94 "Carpet Installation 747" which was provided by TWA. The diagram indicates that 126 pieces of various sizes and shapes were installed on the aircraft. The carpet pieces are numbered corresponding to TWA diagram #G03911 for installation. Each piece of carpet was stamped by location and part number at the forward underside. 326 pieces of flooring including 291 carpet pieces/fragments and 35 pieces of vinyl flooring material were recovered. 53 are identifiable as to their placement in the aircraft (See Attachment D). Overall damage to recovered pieces is minimal with 2 exceptions: Part number 1174 from A zone was significantly torn. One unidentified piece shows significant thermal damage. The following is a list of identified carpet pieces by zone:

Upper Deck -16 total pieces are required -11 were identified
A zone -20 pieces are required -12 were identified
B zone -24 pieces are required -12 were identified
C zone -18 pieces are required -5 were identified
D zone -18 pieces are required -5 were identified
E zone -30 pieces are required -10 are identified

All of the carpeting from the staircase from the main deck to the upper deck was identified however, because the pieces were identical for all steps it was not possible to place them in the reconstruction.

All bulkhead carpet was recovered. Bulkheads from the upper deck, duty free module, D galley, and the # 5 jump seats were recovered with carpet attached. All other bulkhead carpet pieces were recovered unattached. Damage to the bulkhead carpet is minimal with one exception. One piece of class divider bulkhead carpet is melted.

12 decompression panel screens were recovered. All sustained heavy damage.

4.2.10 Emergency Equipment

A provided a list of emergency equipment which was carried on board the B747

1 portable crew oxygen bottle - Scott	P/N 12293
24 portable oxygen bottles - Scott	P/N 12298 and P/N 12155
5 Halon fire extinguishers	P/N 10-5429
3 Kidde water fire extinguishers	P/N 2155428

7 Dupont portable breathing equipment units (PBE)	P/N 456M37B
4 first aid kits - TWA	P/N 441496
1 emergency medical kit - North Health	P/N TWA286-9720
2 megaphones - Cableform Inc.	P/N S-168MA
5 spare adult life vest - Eastern Aero Marine	P/N PO723-101
6 spare child life vests - Eastern Aero Marine	P/N PO640-101H
433 + passenger life vests - Eastern Aero Marine	P/N PO723-101
22 crew life vests - Eastern Aero Marine	P/N PO723-101
17 flashlights - Bright Star	P/N 2117
1 portable in-aisle wheel chair - SP Aerospace Inc.	P/N 40440
663 man slide/rafts - Air Cruiser	P/N D30440-105
246 man slide/rafts - Air Cruiser	P/N D30441-105
2 off wing ramp slides - BF Goodrich 7A1418-2 (3R)	P/N 7A1418-5 (3L)
1 crew service door slide - BF Goodrich	P/N 7A1 104-24

All recovered portable equipment sustained varying degrees of damage. These items were examined by FBI explosive technicians and documented by the AIDG. The following is a list of recovered equipment:

- 1 portable crew O2 bottle
- 24 portable O2 bottles
- 5 Halon fire extinguishers
- 3 Kidde water fire extinguishers
- 7 DuPont portable breathing equipment units (PBE)
- 3 first aid kits
- 1 emergency medical kit
- 11 flashlights
- 1 partial megaphone
- 1 portable in-aisle wheel chair
- 663 man slide/rafts
- 246 man slide/rafts
- 2 off wing ramp/slides
- 1 crew service door slide

What appeared to be the majority of the life vests were recovered. Many were located in the pouches under the passenger seats and crew seats, some were found floating. There is no evidence to support that the life vest were utilized.

Henry F. Hughes
Henry F. Hughes, Chairman
Senior Accident Investigator *MC*