Docket No. SA-521

Exhibit No. 2-A

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D. C.

Operational Factors/Human Performance Group Chairman's Factual Report

(27 pages)

NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, D.C. 20594

April 13, 2001

GROUP CHAIRMAN'S FACTUAL REPORT

OPERATIONAL FACTORS/HUMAN PERFORMANCE GROUP

DCA00MA026

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A. ACCIDENT

Operator:	Emery Worldwide Airlines, Inc.
Location:	Rancho Cordova, California
Date:	February 16, 2000
Time:	1951 Pacific Standard Time[1] (pst)
Airplane:	McDonnell Douglas DC-8-71F, N8079U

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[1] All times are Pacific Standard Time based on a 24-hour clock, unless otherwise noted. Actual time of accident is approximate.

C. SUMMARY

On February 16, 2000, at 1951 Pacific standard time, a Douglas DC-8-71F, N8079U, registered to and operated by Emery Worldwide Airlines Inc. as flight 17 for the 14 CFR Part 121 scheduled cargo service from Sacramento, California, to Dayton, Ohio, crashed shortly after takeoff from Mather Field, Rancho Cordova, California. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed. The airplane was destroyed by impact forces and a post-crash fire. The three flight crew members were fatally injured.

D. DETAILS OF THE INVESTIGATION

The Operational Factors/Human Performance Group convened at Sacramento Mather Airport (MHR), Sacramento, California, on February 17, 2000, to begin the field phase of the accident investigation. The Operational Factors/Human Performance Group interviewed the Miami Aircraft Support cargo technicians, supervisor, load planner, and Northwest Regional Manager. Other interviews conducted by the Operational Factors/Human Performance Group included four Emery Worldwide Airlines mechanics based at Reno, Nevada, the Emery Worldwide mechanic stationed at Sacramento Mather Airport, and the TAMCO [Today's Aircraft Maintenance Contracting Organization] contract mechanic who worked at Sacramento Mather Airport. The captain and flight engineer who flew the second to last flight leg prior to the accident flight, and the first officer who flew the accident airplane prior to the accident flight were interviewed. Interviews were also conducted with the Emery Worldwide City Service Coordinator, Reno Emery Worldwide AM Operations Supervisor, and the Emery Worldwide Operations Supervisor at Sacramento Mather Airport.

On February 19, 2000, the Operations Group examined the cargo system on airplane N500MH, a DC-8-71 model that had undergone freighter conversion. The airplane was on the Emery ramp at MHR. The group observed the loading and unloading of an empty Unit Load Device (ULD) "AAA" container and observed the operation of the floor locks.[2] The group also examined the lower "belly" cargo area.

The group toured the loading facility at the Emery Worldwide MHR station. Some members of the group observed one empty ULD container that had the edge rail on the door side that bowed up in the middle. A corner fitting of a container had a broken corner fitting. The group observed a weighing demonstration on the scale. The ULD was variably positioned on the scale; the scale weight remained constant.

Manuals and documents were obtained from Emery Worldwide Airlines and the Federal Aviation Administration (FAA).

[2] See Attachment 3.

The Operational Factors/Human Performance Group concluded the field phase of the accident investigation on February 24, 2000.

On April 6, 2000, the Operational Factors/Human Performance Group conducted an Interview with the former Principal Operations Inspector (POI) for Emery Worldwide Airlines concerning FAA surveillance and oversight. The interview was held at the Flight Standards District Office (WP-FSDO-15) in San Jose, California.

Between May 2 and May 4, 2000, the Operational Factors/Human Performance Group conducted interviews at Dayton, Ohio, with the following persons: Pilots who had flown with the accident captain and first officer, Check Airmen who had conducted check rides with the accident captain and first officer, the Director of Flight Operations, the Chief Pilot, the Director of Airline Safety, the Network Control Manager, the Senior Director of Network Control, the General Manager for Emery Worldwide at Sacramento Mather Airport, the Director of Ground Services and Airport Affairs, the Director of ULD Management, and the Senior Director of Quality Control and Quality Assurance. Further, interviews were conducted by the Operational Factors/Human performance Group with the FAA POI and the Assistant POI assigned to Emery Worldwide Airlines.

1.0 HISTORY OF FLIGHT

On February 16, 2000, an Emery Worldwide Airlines, Inc., McDonnell Douglas DC-8-71F, registration N8079U, operating as Emery Worldwide Airlines flight 017 (EB017), departed MHR about 1949, bound for the James M. Cox Dayton International Airport (DAY), Dayton, Ohio. About 1947:18, while taxiing to runway 22L, Sacramento Approach Control released the flight for departure and said, "… report airborne." About 1947:21, EB017 replied, "Emery seventeen heavy we'll call you in the air." After takeoff, about 1949:36, the pilot called Sacramento Approach Control stating, "Emery seventeen emergency." After being asked to "say again," the pilot replied about 1949:44, "Emery seventeen has an emergency." About 1950:04, the pilot radioed Sacramento Approach Control and stated, "Emery seventeen extreme c g problem." This was the last transmission received from the flight. The airplane crashed into an automobile salvage yard east of the airport in Rancho Cordova, California, about 1951. The airplane was consumed in the post-crash fire. All three crewmembers on board were fatally injured.

Earlier on February 16, 2000, the accident airplane was scheduled to make a nonstop flight from DAY to MHR with continuation on to Reno/Tahoe International Airport (RNO), Reno, Nevada, as flight 018. The departure from DAY was delayed because of a problem with one of the cockpit windows. The flight was then rescheduled to make an intermediate stop at RNO before continuing on to MHR. The flight was originally scheduled to depart DAY at 1038 UTC, but because of the maintenance delay, did not actually leave until about 1930 UTC. Flight 018 arrived at RNO at 0042 UTC.

According to the first officer on flight 018, an ILS approach was flown to runway 16R at RNO, but a go-around was executed because the runway was not in sight upon

reaching approach minimums. The flight was then vectored for a back course approach to runway 34L because the minimums were lower for that approach than for the ILS approach to runway 16R. The flight then landed on runway 34L uneventfully.

There was a partial crew change after the flight arrived at RNO, and then another partial crew change after the flight arrived at MHR. The inbound captain and flight engineer from DAY on flight 018 got off the airplane at RNO, but the inbound first officer from DAY continued on to MHR. The accident captain, who had deadheaded on flight 018 from DAY to RNO, then flew the airplane to MHR as captain on flight 017. The accident flight engineer joined the flight at RNO and also flew to MHR on flight 017. The accident first officer joined the flight at MHR, replacing the inbound first officer who had flown the accident airplane from DAY to RNO to MHR. According to company records, flight 017 arrived at MHR at 0225 UTC, and departed MHR on the accident flight at 0335 UTC.

According to the first officer on flight 017 from RNO to MHR, the accident captain was the flying pilot. He stated that on takeoff from RNO, the airplane rotated without trim changes and it flew a normal climb profile. He stated that the accident captain made no mention of any problems at all on the flight to MHR.

2.0 FLIGHT CREW INFORMATION

A search of records at the FAA and the company showed no FAA enforcement actions, accidents or incidents, or company disciplinary actions, and a search of records at the National Driver Register found no history of driver's license revocation or suspension.

According to Emery Worldwide Airlines records, the accident crewmembers flew together on EB017, February 4, 2000. They also flew together on EB018 (MHR-RNO) on February 8, 2000.

2.0.1 The Captain, Kevin G. Stables

Date of birth: [redacted]
Date of hire with Emery Worldwide Airlines: October 19, 1994

Pilot and flight engineer certificates and ratings:
Airline Transport Pilot (issued 08/05/98)
Airplane Multiengine Land / Airline Transport Pilot
Airplane Single Engine Land / Commercial Privileges

Type Ratings: ATR-42 / Airline Transport Pilot
ATR-72 / Airline Transport Pilot
B-727 / Airline Transport Pilot
ND-262 / Airline Transport Pilot

DC-8 / Airline Transport Pilot

Flight Instructor (issued 05/14/99)
Ratings: Airplane Single and Multiengine
Instrument Airplane

Limitations: Valid only when accompanied by pilot certificate
Expires 05/31/01

Ground Instructor (issued 04/04/80)
Ratings: Advanced Ground Instructor
Instrument Ground Instructor

Medical certificate:
First Class (issued 02/15/00)
Limitations: "Holder must wear corrective lenses for near and distant vision"

He had no history of failures or re-tests for FAA pilot certificates and ratings.

Flight experience according to Emery Worldwide Airlines records:

FLIGHT TIME[3]	HOURS
Total	13,329
Total Emery Worldwide Airlines DC-8 Captain	2,128
Last 24 hours	1.2
Last 7 days	1.2
Last 30 days	46.1
Last 90 days	119.1

Training and checks:

TRAINING / CHECKS	DATE
Initial DC-8 type rating	08/05/98
Initial DC-8 proficiency check	08/05/98
Completed DC-8 initial operating experience	09/23/98
Last DC-8 proficiency check	06/30/99
Last recurrent training Airplane specific (DC-8) and general subjects	07/01/99
Last recurrent training - simulator	02/11/00

[3] Not including accident flight.

2.0.2 The First Officer, George Y. Land

Date of birth: [redacted]
Date of hire with Emery Worldwide Airlines: September 15, 1996

Pilot certificates and ratings:
Airline Transport Pilot (issued 01/02/96)
Airplane Multiengine Land / Airline Transport Pilot
Airplane Single Engine Land / Commercial Privileges

Type Ratings: None

Medical certificate:
First Class (issued 06/24/99)
Limitations: None

He had no history of failures or re-tests for FAA pilot certificates and ratings.

Flight experience according to Emery Worldwide Airlines records:

FLIGHT TIME[4]	HOURS
Total	4,511
Total Emery DC-8	2,080
Last 24 hours	0.0
Last 7 days	0.0
Last 30 days	47.2
Last 90 days	142.8

Training and checks:

TRAINING / CHECKS	DATE
Initial DC-8 proficiency check	10/28/96
Completed DC-8 initial operating experience	12/07/96
Last recurrent training Airplane specific (DC-8) and general subjects	10/27/99
Last DC-8 proficiency check	10/29/99

[4] Not including accident flight.

2.0.3 The Flight Engineer, Russell E. Hicks

Date of birth: [redacted]
Date of hire with Emery Worldwide Airlines: September 15, 1998

Pilot and flight engineer certificates and ratings:

Airline Transport Pilot (issued 07/19/98)
Airplane Multiengine Land / Airline Transport Pilot
Airplane Single Engine Land / Commercial Privileges

Type Ratings: BA-3100 / Airline Transport Pilot
EMB-120 / Airline Transport Pilot
B-737 / Airline Transport Pilot

Flight Instructor (issued 06/18/87)
Ratings: Airplane Single and Multiengine
Instrument Airplane

Limitations: Valid only when accompanied by pilot certificate
Expires 04/30/89

Ground Instructor (issued 03/05/84)
Ratings: Advanced Ground Instructor
Instrument Ground Instructor

Flight Engineer (issued 04/12/99)
Ratings: Turbojet Powered

Medical certificate:

First Class (issued 04/22/99)
Limitations: None

He had no history of failures or re-tests for FAA flight engineer certificates and ratings.

Flight experience according to Emery Worldwide Airlines:

FLIGHT TIME[5]	HOURS
Total (Based on resume when hired and Emery records)	9,775
Total Emery DC-8 F/E	675
Last 24 hours	1.2
Last 7 days	1.2
Last 30 days	54.8
Last 90 days	148.7

Training and checks:

TRAINING / CHECKS	DATE
Initial DC-8 proficiency check	11/03/98
Completed DC-8 initial operating experience	12/08/98
Last recurrent training Airplane specific (DC-8) and general subjects	09/02/99
Last DC-8 proficiency check	09/02/99
Last DC-8 line check	12/08/98

2.0.4 72-Hour History - The Captain

According to the captain's widow, events in the days before the accident were routine and the captain was in good health and good spirits. The captain had a stable personal life and was described as even-tempered. He was a nonsmoker and drank alcohol very rarely. He had vacation time scheduled to begin on February 18. She said that he usually went to bed about 2130.

On Tuesday February 15, the captain had an FAA medical at 1000. Later that day he tried to arrange for an Emery jumpseat from Windsor Locks/Bradley International Airport to Dayton, Ohio, but it was either filled or the flight was taken.[6] He then tried to get a jumpseat out of Albany, New York. According to the captain's widow he left the house about 1630 to go to the Albany airport and she had no further information on his eventual routing to Dayton.

On Wednesday, February 16, in the early evening, the captain's stepson received a telephone call from the captain. The captain told the stepson that he had had a very

[5] Does not include accident flight.

[6] The captain attempted to depart Windsor Locks/Bradley International Airport BDL via jumpseat to reposition to Reno via Dayton on the Emery system. He was not able to get a reservation on the flight or the flight was canceled. According to the captain's widow, for about a year before the accident the captain had been on stand-by out of Dayton because of his junior seniority status. She said that he had recently been assigned to the Reno base and he was not happy about the base change because it was very difficult to get to Reno. She said that on a previous trip he had to leave a day earlier than normal just to get there and rest before flying.

difficult time getting to Reno. The captain then called back a short time later and spoke with his wife. During that call he mentioned that the first officer was negotiating with the company about whether the first officer should be flying because of his duty hours.

According to Captain Jessup, the accident captain apparently worked out at DAY while waiting for maintenance on the airplane to be completed; he saw him perspiring from apparently having exercised. He thought that the accident captain was feeling good. He thought he heard the accident captain say that he planned to tell the company that he would be stopping when he returned to DAY because of the long day. Captain Jessup stated that the accident captain was unhappy about the delay. During the delay, Flight Engineer Maher saw the accident captain sitting in one of the recliners.

The accident captain deadheaded from DAY to RNO on the day of the accident. Captain Jessup stated that the accident captain slept on the airplane during the flight. Both First Officer Hill and Flight Engineer Maher estimated that the accident captain had slept a couple of hours during the flight. He was not sure if the accident captain had eaten anything. He said the captain never mentioned being tired.

The flight engineer stated that during the last hour of the accident captain's deadheading flight, he and the accident captain chatted about upgrades, families, etc. He stated that the accident captain was not a talkative person, but a good person; he was just kind of a quiet guy. He said the accident captain did not seem to be ill. He did not speak negatively about anything other than, like the rest of the crew, the waiting eight and one-half hours for the airplane to "go green" in DAY. The accident captain did not say he was fatigued and his frame of mind seemed good.

Upon arrival at RNO, the pilots, including the accident captain, were transported from the airplane to the office. The driver stated that he heard the accident captain say that he was "on 27 hours." He interpreted the "on 27 hours" as being up for 27 hours.

On the ground at RNO, the accident captain sat at a table in the office as First Officer Hill called the company about who was going to be first officer on the flight to MHR. It was decided that First Officer Hill would continue on the flight to MHR. First Officer Hill stated that the accident captain flew the accident airplane from RNO to MHR. He thought that the captain performed well, seemed to be alert, and was not nodding off.

2.0.5 72-Hour History - The First Officer

Repeated requests for information from the accident first officer's next of kin were unanswered. The following information was garnered from interviews with the crewmembers who flew the accident airplane from DAY to RNO and RNO to MHR on February, 16, 2000:

The accident first officer joined the flight at MHR, replacing the inbound first officer who had flown the accident airplane from DAY to RNO to MHR.

Mr. Wesleder, an Emery Worldwide Airlines mechanic, stated that he spoke with the accident first officer prior to the arrival of the inbound flight from Reno. He recalled that First Officer Land was a bit annoyed with Emery because he was scheduled to fly out of Reno; however, Emery changed the schedule and he was to fly out of Mather Field.

While waiting for the airplane to arrive at MHR, Mr. Singley, a TAMCO contract mechanic, also talked to the accident first officer. He stated that the accident first officer was in a really good mood. Mr. Singley had previously met the accident first officer a couple of times and stated that he was always in a really good mood. He looked healthy.

2.0.6 72-Hour History - The Flight Engineer

Repeated requests for information from the accident flight engineer's next of kin were unanswered. The following information was garnered from interviews with the crewmembers who flew the accident airplane from DAY to RNO and RNO to MHR on February, 16, 2000:

The accident flight engineer joined the flight at RNO and flew to MHR. On the ground at RNO, Mr. Hoffman, an Emery Worldwide Airlines mechanic, spoke to him just before the doors closed. He discussed the fill valve light with the accident flight engineer who said that he would further troubleshoot the problem at MHR.

First Officer Hill described the accident flight engineer on the flight to MHR as a "normal flight engineer who seemed okay." Mr. Hill said that the accident flight engineer called out traffic for them while coming into MHR, and helped with "speed bugs."

A mechanic at MHR stated that the accident flight engineer conducted the walk-around at MHR.

2.0.7 Medical and Pathological Information

Toxicological testing was performed on urine specimens obtained from the captain, the first officer, and the flight engineer. The specimens tested negative for alcohol and other drugs of abuse.[7]

[7] Drugs tested for included: amphetamine, opiates, marijuana, cocaine, phencylidine, benzodiazepines, barbiturates, antidepressants, antihistamines, meprobamate, methaqualone, and nicotine. See Attachment 14.

3.0 AIRPLANE INFORMATION

3.0.1 WEIGHT AND BALANCE

TAKEOFF WEIGHTS	
	WEIGHT (Pounds)
Basic Operating Weight	148,767
Upper Cargo Load	59,290
Lower Cargo Load	2,690
Spare Parts Kit (SPK)	1,784
Total Cargo	63,764
Zero Fuel Weight	212,531
Maximum Zero Fuel Weight[8]	245,000
Takeoff Fuel	66,700
Gross Takeoff Weight	279,231
Maximum Gross Takeoff Weight[9]	328,000

TAKEOFF STABILIZER TRIM SETTING, CG, FLAPS AND SPEEDS	
Center of Gravity (CG)	28.9 percent mean aerodynamic chord (MAC)
Aft CG Limit	33.6 percent MAC
Takeoff Stabilizer Trim Setting	1.6 units
Takeoff Flap Setting	15 degrees
Takeoff Speeds	V_1=126 knots, V_R=146 knots, V_2=158 knots

3.0.2 ELEVATOR PROCEDURES

The following excerpts regarding procedures related to the airplane's elevator were obtained from the Emery Worldwide Airlines *DC-8 Aircraft Operating Manual* (AOM), Volumes I and II:

AOM: Normal Operations, Initial Exterior Inspection, page 1-01-8[10]

11. Elevators.....CHECK
    Ensure Elevators locked in faired position (Gust lock on). If the Gust lock is not on, contact Maintenance for possible inspection requirement.

AOM: Normal Operations, Initial Pilots Station Preflight, page 1-01-17/18[11]

Gust lock.....OFF

[8] Manufacturer's Airplane Flight Manual limitation.
[9] Manufacturer's Airplane Flight Manual limitation.
[10] See Attachment 12-2.
[11] See Attachments 12-3 and 12-4.

CAUTION – If a tailwind in excess of 10 knots exists do not disengage the Gust Lock.

AOM: Normal Operations, Exterior Preflight, page 1-01-46[12]

L/H and R/H Elevators.....TAB ALIGNMENT AND CONDITION

With Gust Lock OFF elevator should be UP, Control Tabs UP and Geared Tabs DOWN.

Horizontal Stabilizer and Elevator ..... CHECK

Check between trailing edge of stabilizer and elevator for foreign objects, ice or snow. Check all access plates for security. Check condition of static dischargers.

AOM: Normal Operations, AFTER START Checklist, page 1-01-73[13]

GUST LOCK.....OFF (F)

Note that the Rudder Reversion Light is OUT when the Gust lock is ON and illuminates when the lock is off. Make sure the Gust Lock is firmly in the OFF detent.

AOM: Training, Taxi Procedures, page 02-02-28[14]

After the ailerons and rudder are checked, the Captain and the First Officer will check the elevator together. It is important that both Pilots exert pressure on their yokes to prevent excessive stress on either yoke. The normal indication of the PI when the gust lock is off shows the elevator full nose up. If there is a strong headwind or a substantial amount of power is coming from the engines, it may indicate a position between full nose up and neutral.

To check the elevator, both Pilots will push forward on their respective yokes until they reach the forward stop. This will require a substantial force, especially if there is a tailwind. The First Officer should monitor the EPI during the check. When the yokes are full forward, expect to see the EPI indicate between neutral and very slightly nose up. Then both Pilots should pull the yokes to the aft stop; expect to see the EPI move to full nose up.

[12] See Attachment 12-14.
[13] See Attachment 12-7.
[14] See Attachment 12-14.

After the Captain and First Officer complete the elevator check, the Captain should call for the Taxi Check….

AOM: Normal Operations, TAXI Checklist, page 1-01-76[15]

CONTROLS/EPI .....CHECKED (F-E)

Check control freedom about all three axis. Aileron and Rudder Reversion Light should remain OFF during the check. When checking the Ailerons, check for spoiler pressure drop indicating spoiler operation. The First Officer should call out "EPI CHECKS" after the elevator check.

AOM: Training, GENERAL, Takeoff Roll, page 02-03-4[16]

Between 80 and 100 knots, the Pilot flying shall exert a forward pressure on the elevator to the stop and then release the yoke to slightly forward of neutral. The Crew should confirm a nose down response. Depending on weight and loading, the Pilot flying may need to apply the nose down elevator more than once to get a satisfactory response. Once the check is complete the Pilot flying should state, "Elevator Checks." The First Officer looks for the EPI to respond to yoke movement when the elevator check is made. The Captain must know the elevator is working properly early in the takeoff roll. If he is in doubt, he should consider aborting the takeoff.

AOM: Training, GENERAL, Takeoff Roll, Table 2-3-1, Takeoff Roll - Callouts or Duties of:, page 02-03-5[17]

At 80 KIAS:	Captain	Watch for nose strut compression.
	F/O	Watch EPI during elevator check.
	PNF	1. Callout "80 knots"
	PF	1. Callout "80 here."
		2. Push fwd on yoke.
		3. Callout "elevator checks."
	FE	Monitor aft and fwd engine gauges and warning lights.

AOM: Normal Operations, PARKING Checklist, page 1-01-90

[15] See Attachment 12-10.
[16] See Attachment 12-16.
[17] See Attachment 12-17.

GUST LOCK.....ON F

Push the Control Column while engaging the Gust Lock to prevent undue strain on the mechanism. With an appreciable tail wind, both pilots may have to push on the Yoke.

AOM: Flight Controls, ELEVATOR CONTROL, page 27-01-5[18]

The elevator is controlled by four tabs, two on each side. The inboard tabs (aerodynamic-boost) are actuated by a dual-cable control system. The outboard tabs are geared to the horizontal stabilizer and move in relation to the elevator. Two independent cable systems extend from the control columns under the flight compartment floor to bellcranks on the elevator tab torque tubes. The elevator surfaces are bussed by a torque tube, located on the rear spar of the horizontal stabilizer, which incorporates the gust lock mechanism and surface stops. A load-feel and centering spring mechanism is located on the control column under the flight compartment floor.

AOM: NORMAL OPERATION, Flight Control System, ELEVATOR - ELEVATOR POSITION INDICATOR OPERATIVE – CAPTAIN & FIRST OFFICER (PERFORM CHECK TOGETHER), page 27-02-3[19]

1. Ensure that gust lock is disengaged.

   Disengagement of the gust lock should cause the following:

   a. The elevators will move to command aircraft nose-up condition (trailing edge up), due to their static balance characteristics.
   b. The elevator control tabs will have trailing edge up.
   c. The elevator control column moves slightly aft.
   d. The elevator position indicator should move to the “UP” mark.

2. Pull control column aft until it reaches full travel against the stop.

   The elevator indicator needle will remain pointing to the “UP” mark. The elevator control tabs will move to

[18] See Attachment 13-1.
[19] See Attachment 13-7.

command aircraft nose up condition (trailing edge down). The force required to position the control column aft will be relatively light, since the elevators already have their trailing edge up and only the control tabs are being deflected. Variations of required force may, however, be expected, contingent upon wind conditions.

3. Push control column forward until it reaches full travel against stop.

   Barring unusual wind conditions, the force required on the control column is initially light while only the control tabs are being deflected to command aircraft nose-down condition (tabs trailing edge up). The control tabs having reached their full throw, a substantial increase in required force to move the control column can be noted as the elevator itself deflects to a trailing edge down condition. The elevator position indicator needle should now point between the "NEUT" mark and the "DN" mark. Movement of the elevator's trailing edge to the full down position is not possible. Therefore, the position indicator needle will not reach the "DN" mark. Freedom of the elevator to move is established by the indicator needle moving from the "UP" mark to a position just more than half-way between the "NEUT" mark and the "DN" mark.

   NOTE: If tailwinds prevail during control check and no elevator movement is indicated, turn the aircraft into the wind and repeat this procedure.

4.0 AIRPORT INFORMATION

Sacramento Mather Airport is operated by the County of Sacramento, and is located about 12 miles east of downtown Sacramento, California. The airport formerly served as an Air Force Base. The airport is served by one set of parallel runways for a total of two runways. The parallel runways are numbered runway 4L-22R and runway 4R-22L. The airport elevation is 96 feet mean sea level (MSL).

The active runway for Emery Worldwide Airlines flight 017 on the day of the accident was runway 22L, the longest runway at MHR (11,301 feet). Runway 22L is served by an instrument landing system (ILS) which is approved for Category I approaches. A detailed description of each of the runways is shown in the following table:

DESCRIPTION	RUNWAY			
	4L	22R	4R	22L
Dimensions (feet)	6040 x 150	6040 x 150	11301 x 150	11301 x 150
Touchdown Zone Elevation (feet)	N/A	N/A	79	96
Surface	Asphalt	Asphalt	Concrete	Concrete
RVR Equipment	No	No	Touchdown	Touchdown
Approach Lights	No	No	No	MALSR[20]
Touchdown Zone Lights	No	No	No	No
Runway Edge Lights	No	No	High Intensity	High Intensity
Centerline Lights	No	No	No	No
Visual Approach Slope Indicator (VASI)	No	No	Yes	Yes

5.0 COMPANY INFORMATION

According to the Flight Crew Handbook, Emery Worldwide Airlines received its initial certification as an air carrier in May 1987 under the name of Air Train, Inc. On January 3, 1990, the name was changed to Emery Worldwide Airlines, Inc. Emery Worldwide Airlines provides its services exclusively to Emery Worldwide, a domestic and international integrated airfreight carrier.

At the time of the accident, Emery Worldwide Airlines operated DC-8 and DC-10 jet freighters. Emery Worldwide Airlines operates jet freighters in a hub and spoke network, with the majority based at its main hub in Dayton, Ohio. Emery also operates a dedicated fleet of jet cargo airplanes for the U.S. Postal Service managing contracts for transport of overnight Express and second-day Priority mail. Emery Worldwide Airlines holds Operations Specifications authority to operate in or over virtually every country in the world. Its airplanes operate over the Atlantic and Pacific Oceans on a regular basis, and fly in Europe, the Mid-East, and Asia on ad-hoc and repetitive charters.

6.0 FAA SURVEILLANCE AND OVERSIGHT

The POI assigned to Emery Worldwide Airlines from April 1990 until December 1999, was Mr. Terje Kristiansen. During the time he held this position, he operated from the San Jose Flight Standards District Office (FSDO), San Jose, California. In an interview conducted by the Operational Factors/Human Performance Group, Mr. Kristiansen stated that he had other office duties including counter duty, handling accidents and incidents, etc. In 1998, in addition to being POI for Emery Worldwide Airlines, he was assigned to Asia Pacific Airlines (doing business as Air Micronesia) as POI. He said that management of

[20] Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights.

the Emery Worldwide Airlines certificate took at least 70 percent of his time.

Mr. Kristiansen said that the FAA had a surveillance program for Emery Worldwide Airlines. This included en route inspections, ramp inspections, training observations, reviewing manuals, etc. Further, this program included work on operations specifications, correspondence, and arranging for check rides. FAA geographic inspectors also helped with en route and ramp inspections. Mr. Kristiansen said that he did a "fair amount" of en route inspections when he went back and forth to Dayton, Ohio.

He stated that he was aware of situations where instances of un-airworthy ULDs getting on board the airplanes and some concerns about weights from time to time. He said these issues were brought to the attention of the respective captains and resolved. He said that although training was required, the FAA noticed that contract personnel doing the loading were not as well trained, as they should be. He acknowledged that the regulations concerning the training of air carrier loading personnel were a bit vague in the FARs but there were guidelines for training personnel in the recognition of hazardous materials (hazmat).

Mr. Kristiansen stated that he and the Principal Maintenance Inspector (PMI) assigned to Emery Worldwide Airlines began work on the loading manual in 1997. It started with discussions about that time, and he thought that the final product was completed in the summer of 1998. He and the PMI talked about loading training issues. They decided that one way to handle it was to develop a manual; the regulations stipulated that personnel needed guidance. He said Emery developed the manual, and with a few revisions, the product was accepted. He stated that the manual did not make a "huge difference," but he saw small improvements.

He stated that he felt Emery Worldwide Airlines' pilot training program was adequate; he said that he did not get adverse comments from other FAA inspectors. He said that Emery had a well-qualified workforce conducting the pilot training. He had the opportunity to observe ground training and noted that some of the aids they used were a little out-dated. It was not that the training aids did not reflect the airplane, but compared to other carriers, they were not as modern; however, he said that the materials were quite adequate and met requirements. He did ask Emery Worldwide Airlines to update the training materials, and Emery was working on that effort.

Mr. Kristiansen stated that he was involved in approving and accepting Emery's manuals. He said some of these manuals went to the PMI, too. He said that he was involved in approving the MEL, training, and checklists; other manuals were accepted, such as the aircraft loading manual. He stated that he never noted any particular problems with emergency checklist procedures.

Mr. Kristiansen said that when he went to Dayton, Ohio, he would stay close to the training center to visit, and review records, etc. He would also “pop into” a simulator session, ground school, etc. He would visit Dayton about four times per year, or about once per calendar quarter.

He said that each time he conducted an en route inspection he would observe the cargo loading operation and look at the condition of the ULDs. Some outstations did a better job, but he could not recall which ones. He said the main difference is the equipment available at the outstations. The Dayton hub is very large and they have more equipment to help them out. He said there was not a difference between the Dayton hub and the outstations in the techniques or manner in which they loaded.

He stated that he mostly interfaced with the Director of Operations and the Chief Pilot of Emery Worldwide Airlines. He also interacted with the Director of Training, Director of Flight Dispatch, and Director of Crew Scheduling. He said that he interfaced only with the airline, and not with the freight forwarder, Emery Worldwide, or the owner, "CNF." He said Emery Worldwide is the only customer of the airline and the airline is not free to operate for anyone else.

Mr. Kristiansen stated that he received verbal or written concerns from pilots, but the number varied; it could be as many as one a week for a few months. He said the comments began coming about 1997. The format consisted of telephone calls, comments from people he met in the training center, comments during en route inspections, and occasional comments from the Air Line Pilots Association (ALPA). Various complaints were received but the main issues were crew rest times. Another issue that they looked into was that some EGT limits on certain engines were being exceeded. Associated problems and how they were being deferred and fixed were also addressed. He said some of the maintenance issues were handed off to the PMI. Another concern involved jumpseat riders and the authority of certain people to be in the cockpit. There were some other concerns about pilots being overworked and fatigued; fatigue represented about one-third of the total complaints he received.

He stated that there were also some comments or complaints concerning loading problems. Some of them turned into violations while others did not. He said it was difficult to get specifics for some of these complaints because they were rather general. Some of the loading complaints came in through the hotline. If the complaint did not have a specific flight number or date, it was difficult for him to get the information.

Mr. Kristiansen said that the company cooperated with his inquiries about the complaints. Some of the complaints did not have a resolution, unless there was a specific violation of the FARs. He said it was difficult for him to impose on the company to change things. Lots of times he would discuss the problem with a pilot on the telephone and come to an understanding of what was required, or the FSDO's view of what was required. He said the vast majority of these activities would be in the PTRS records, especially hotline complaints.

Mr. Kristiansen said the chief pilot gave him good reports on incidents and occurrences at Emery. Some of these events were not reportable but as a courtesy he was always kept informed by the chief pilot. Occasionally he did get written reports from the chief pilot.

Mr. Kristiansen said Emery had a NASIP inspection in the summer of 1992, a RASIP in 1995, and a focused RASIP in 1999. He said a focused RASIP means they looked at specific areas. In this case they looked into loading procedures and conditions of ULDs. A number of violations were filed as a result of that inspection. The vast majority of issues they forwarded to "legal" concerned the conditions of ULDs. He said one unrelated issue surfaced regarding an allegation of taking off with ice on wings but it was later dropped. Most issues from the inspections were airworthiness issues. Mr. Kristiansen said that he did not remember making any specific operational changes following these inspections. There were some improvements that did result; he observed that the condition of the ULDs seemed to improve noticeably after the inspection.

Mr. Kristiansen said that Emery was more aggressive in identifying unairworthy ULDs and pulling them off the line after the focused RASIP. Before this RASIP inspection some of the ULDs were in bad condition, and they occasionally found badly loaded pallets with the netting not restraining cargo properly, and the pallets in bad condition (bent).

He stated that following the issuance of the HBAT/special emphasis inspections in 1997, after the Fine Air crash, he did not go to DAY to accomplish these inspections. Geographic inspectors would have received the same bulletin and would have used the guidance during their enroutes/ramp inspections.

He said the training program for the loaders came about in 1998. The loading supervisors from the outstations came to DAY to receive the training. Subsequently, a computer-based instruction program was developed. He reviewed and accepted the training. He said that he had not personally been through this training but an inspector from the CVG office had. He said that training for loaders could have been better. They could train the loaders to be more aware of the condition of the ULDs, make sure that boxes are properly restrained, and check the condition of the cargo. Typically the supervisor is busy elsewhere on the ramp during the loading process and there may not be enough personnel to supervise the load.

He stated that ULD problems were brought to his attention by pilots and geographic inspectors. He said they occasionally had a copy of the load plan and photos of ULDs that was helpful in the investigation of the problems. Pilots did express to him that they were asked to carry certain ULDs that they believed were unairworthy. He would tell pilots that they should not carry them, as that would jeopardize their status as PIC, pilot, etc. Mr. Kristiansen said they were hard complaints to investigate, as they were allegations. Pilots complained that the airplanes had been loaded before they arrived, and they could not check the condition of the ULDs.

He said as a POI he would ask the ground handler for their training records when he was doing an en route inspection. He would ask questions, observe, make notes, and report it to the company because it is the company's responsibility to ensure that personnel are adequately trained.

On March 13, 2000, the POI assigned to Emery Worldwide Airlines was changed from Mr. Kristiansen to Mr. Lawrence J. Vonderschmidt. Mr. Vonderschmidt stated that he did not interact with the former POI.

Mr. Vonderschmidt stated that he only deals with the Emery Worldwide Airlines personnel in Dayton, Ohio, and does not deal with the parent company in California.

He stated that he was overseeing the rewriting of several manuals, including the loading manual and forms, and the Aircraft Operating Manual. This was mostly the result of the RASIP.

He stated that he had heard that cargo loading was one of the problems with the airline; mainly, who was responsible for it. He stated that the airline had hired 38 supervisors who will be responsible for the training and the loading of every airplane at every station. He stated that he was overseeing the re-writing of the loading manual to be more specific about who is responsible. Emery Worldwide Airlines is responsible for the proper training and the supervision of the contractors that load their airplanes. It is up to Emery Worldwide Airlines to make sure that their contractors are in compliance.

At the time of the interview on May 2, 2000, he stated that a special emphasis inspection had been going on for approximately the last 70 days, with about another 20 days to run.

Mark M. McConaughy is an Aviation Safety Inspector and currently the assistant POI assigned to Emery Worldwide Airlines. Both he and the POI described their workload as heavy.

At the time of the interview on May 2, 2000, Mr. McConaughy stated that he was the only DC-8-qualified inspector on the Emery Worldwide Airlines certificate. He had done at least 25 to 30 DC-8 certification events in the last 45 days, over and above his regular responsibilities. Before the year is out he estimated that he would probably have given close to 100 check rides. He stated that the “8400” says, “you're only supposed to do 40 unless you have help.” He stated that he hardly had a chance to do any en route inspections because he has not had time. He also stated that he had paperwork to do that would take two weeks to “make a good dent in it,” but in the last four weeks had not been able to spend one full day in the office. Emery Worldwide Airlines did not have a designated examiner at this time.

He stated that he was reviewing the cargo loading manual. There are vague statements in the manual using words such as “typically” or “when able” or “as required,” that he wants to be made more specific.

Mr. McConaughy stated that since he had been the geographic program manager he had on a fairly regular basis received complaints from the pilot group regarding not only aircraft maintenance issues but also aircraft loading issues. With the “certificate” in San Jose, he would fax the complaint to them and it was basically up to them to do as they saw

fit. Most of the time if they caught a loading problem before an airplane departed, there would be no violation. If operating under the provisions of the existing loading manual there was not a lot that could be done because the language of the loading manual was not strong enough. He thought that the situation would change when the manual is changed.

He stated that a special inspection team was primarily doing ramp inspections "and those kinds of things." He has taken some of the issues raised to the chief pilot and to the director of operations. He thought that they were willing to do whatever was asked of them. In most of the cases they were as enraged about issues raised as he was. On the "operations side of the house," the people seem to want to do a good job and they are very frustrated when things do not happen like they should. He thought that a lot of the problems came from the "maintenance side of the house."

Mr. McConaughy also thought that there seemed to be a problem with the relationship between the parent company and the airline. About two and a half years ago, a Teletype was sent by Network Control to all the out stations to "launch" the airplanes to Dayton; the weather at Dayton was improving; launch immediately. He stated that, fortunately, no one "took that as gospel and launched." The weather at Dayton at the time was "600 sky obscured and visibility was like an eighth of a mile." The airline was not authorized to operate CAT II. The former POI sent them a warning letter.

Mr. McConaughy stated that he had occasionally sat in on DC-8 ground training. He thought that they were turning out a "real good product." They have had a few failures but most of those have been because of "checkitis" or something else. It is not because they were not properly trained. It's usually some shortcoming of the individual.

He stated that proficiency checks were given by the company check airman. He did not get reports from them but he told them that if someone failed a check ride, he wanted to know about it. If someone failed a check ride, he wanted to observe the next one.

Mr. McConaughy stated that he had not personally observed any of the ground handling training except to the extent "we deal with it with the aircraft, or with the aircraft loading manual where it deals with ground handling, those kinds of things. That is where we "overlap with our airworthiness unit." They primarily take care of the loaders; however, the aircraft loading manual is approved by the POI.

He stated that the previous POI would schedule about four visits a year to Dayton. Typically he would not make at least one of the visits due to budgetary considerations. The FAA at Columbus, Ohio, used to have oversight of the Dayton airport, but because they did not have any air carrier people, the oversight responsibility was changed to the FSDO at Cincinnati, Ohio. Mr. McConaughy stated that when this office took over and he was assigned to the Emery Worldwide Airlines certificate, he got acquainted with the previous POI in San Jose, California. They started working together, basically "a gentleman's agreement." Mr. McConaughy would do the "leg work" for him. Mr. McConaughy thought that the POI was very conscientious; he was doing the best he could under the situation.

The POI was “1800 miles away and if something happened, until we got up here to look at things for him, he just was more or less in a situation where he had to kind of take for granted whatever Emery told him was; that was it, right or wrong, he had no choice.”

Emery Worldwide requested that the operating certificate be transferred. He thought that at some point this would probably have happened anyway because the number of airplanes operated by the company had increased from three or four airplanes to about 40 airplanes. The company originally wanted to move the certificate to Detroit, but the region decided that because of the distance to Detroit, the same impediment with the distance from Dayton would still exist.

Oversight of the loaders and the loading of the airplanes is accomplished by doing ramp inspections periodically. He thought that once all the help goes away, it would be done on a sporadic basis, maybe once every couple months “if we're lucky.”

Submitted by:

[original signed]

Kenneth L. Egge
Chairman, Operational Factors/Human Performance Group

E. LIST OF ATTACHMENTS

Attachment 1