



National Transportation Safety Board Aviation Accident Final Report

Location:	BOISE, ID	Accident Number:	ANC93FA128
Date & Time:	07/27/1993, 1317 MDT	Registration:	N156PA
Aircraft:	CONVAIR 240	Aircraft Damage:	Substantial
Defining Event:		Injuries:	3 None

Flight Conducted Under: Part 91: General Aviation -

Analysis

LEFT SEAT PILOT WAS RECEIVING A FLIGHT CHECK FOR ATP AND CV-240 TYPE RATING; RIGHT SEAT PILOT WAS FAA OPS INSPECTOR. FOLLOWING A SIMULATED SINGLE-ENGINE APPROACH THE AIRPLANE LANDED WHEELS UP. LEFT SEAT PILOT HAD RECEIVED A TOTAL OF 1.4 HRS LEFT SEAT TRAINING IN CV-240 PRIOR TO THIS FLIGHT; LOG BOOK NOT ENDORSED.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S FAILURE TO EXTEND THE LANDING GEAR, AND THE CHECK PILOT'S INADEQUATE SUPERVISIION. A FACTOR IN THE ACCIDENT WAS THE PILOT'S INADEQUATE UPGRADE TRAINING BY THE COMPANY.

Findings

Occurrence #1: WHEELS UP LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

1. (C) GEAR EXTENSION - NOT PERFORMED - PILOT IN COMMAND
2. (F) INADEQUATE TRANSITION/UPGRADE TRAINING - COMPANY/OPERATOR MANAGEMENT
3. WHEELS UP LANDING - INADVERTENT - PILOT IN COMMAND
4. (C) SUPERVISION - INADEQUATE - CHECK PILOT

Factual Information

HISTORY OF FLIGHT

On July 27, 1993, at 1217 mountain daylight time, a Convair 240, N156PA, owned by Cool Air Inc., of Spanaway, WA, and operated by Renoun Aviation, a 14 CFR Part 121 supplemental air carrier of Santa Maria, CA, landed with all landing gear retracted, during a simulated single engine ILS approach Gowen Field, Boise Air Terminal, at Boise, ID. The flight was being operated under 14 CFR Part 91 during a Part 61 flight check for an initial airline pilot's rating and CV240 type rating. An FAA air carrier operations inspector was conducting the flight check and occupied the copilot's seat. The airplane had departed Boise at approximately 1106 on a local VFR flight plan in visual meteorological conditions. The pilot, check pilot and jumpseat observer were not injured. The airplane sustained substantial damage and the airport runway sustained damage.

FAA air traffic controllers reported the airplane to have been executing a VOR/DME approach to Boise Runway 10 R (right) and continued to touch down with the landing gear in the retracted position. Neither landing clearance nor contact with the Boise tower was established at the time of the accident.

The airplane's owner, Captain Bud Rude, identified himself as a chief pilot for Renoun Aviation and director of Cool Air, Inc. Captain Rude told FAA and NTSB investigators that he had recommended, to the FAA, the Renoun first officer for the check ride, and knew the FAA check pilot personally. The chief pilot stated that he and another qualified company pilot-in-command had been available to act as first officer, but that the FAA inspector "had acted as pilot in command and had (occupied) the copilot's seat without his authority." The jump seat observer identified herself as the daughter of the airplane's owner and was reportedly preparing for a commercial type rating in the CV240 the following day. The owner said that his relationship with Renoun Aviation was to operate a company to lease airplanes to Renoun and then to act as a chief pilot. The FAA-Approved Operations Specifications for Renoun Aviation lists Captain Rude as one of the chief pilots.

The Renoun company first officer receiving the check flight told investigators that he had received a total of 1.4 hours left seat training in the CV240 prior to the accident flight. His flight log book contained no entries of instructor endorsement in preparation for the type rating check flight conducted under 14 CFR Part 61.

An interview of the FAA check pilot, who had occupied the right seat was conducted by the NTSB with an FAA Northwest Mountain Region inspector as party member. During that interview, investigators were told that a simulated left engine failure was in progress at the time of gear up landing.

INJURIES TO PERSONS

The three persons aboard the Convair 240 were uninjured.

DAMAGE TO AIRCRAFT

The aircraft sustained engine stoppage and propeller damage to both engines, lower cowl damage and gear door damage to both nacelles and damage to both main landing gear. The aircraft skidded on its center keel and there was grinding damage to fuselage doublers at the center wing section of the aircraft's hull bottom.

PERSONNEL INFORMATION

The pilot in the left seat of the accident airplane was First Officer Romuald Eugene Eckols. FAA records indicated that the pilot possessed a Commercial Airplane, Single and Multiengine Land certificate and an Instrument Airplane rating. He held a current FAA First Class Medical certificate without restrictions.

Records showed Mr. Eckols to have approximately 2200 hours of flight time, and have been employed as a pilot for about three years with Renoun. Prior to that employment, he was a mechanic at Air Kentucky Airlines and other companies.

The FAA check pilot in the right seat of the accident airplane was Robert Lee Rountree. FAA records indicated that this pilot possessed an Airline Transport Pilot Rating for airplane single and multiengine land, (ATP) with ATP type-ratings in the Convair 240, 340 and 440 airplanes. He also held Commercial Pilot Certificates in Rotorcraft-Helicopter and Instrument-Helicopter. Records showed that Mr. Rountree had listed his pilot hours as 15000 hours on his most recent FAA Medical application. He held a current FAA Second Class Medical certificate (commercial pilot) with limitations (glasses for near vision required).

Mr. Rountree also held certificates as a hot-air balloon pilot and a Certified Flight Instructor (CFI) in airplanes, single and multiengine, helicopters and instrument airplane.

He told investigators that until recently, he was the only Convair 240-rated FAA examiner in the United States.

METEOROLOGICAL INFORMATION

The local observation by the National Weather Service (NWS) taken at 1253 PDT was: sky clear, visibility 40 miles, temperature 79 degrees (F); dewpoint 44; wind 200 degrees at 8 knots; altimeter 30.10 inches (hg); remarks, few cumulo-cirrus. An observation one hour later showed no appreciable changes.

AIDS TO NAVIGATION

Boise Air Terminal area is served by VOR/DME, ILS and a Non- Directional Beacon (NDB) at the Locator-Outer-Marker (LOM), as well as a radar approach control facility. During the period of the check flight flown by the accident aircraft all components were operational and no outages or anomalies were reported.

COMMUNICATIONS

Review of original tower and radar facility frequencies in use during the two-hour period prior to and during the accident indicated that all local, ground, radar and ATIS (Automated Terminal Information Service) frequencies were operational and all other aircraft communications were normal.

The FAA check pilot was heard throughout the transmissions to be the communicating pilot. During the flight of the accident aircraft, N156PA, which lasted from 1103 to 1217 Pacific daylight time, communications between the accident airplane and Boise ATC facilities were marked with the following abnormalities in transmission.

At 1106 PDT N156PA changed the use of (2) transceivers before finding one that could be understood by the Boise radar approach control facility. At 1107 a clear transmitter was in use from N156PA, and continued to be so, throughout the flight.

At 12:06:50 the approach controller directed N156PA to contact Boise tower, local controller. At that time, the airplane was approaching the airport on the ILS Backcourse 28 Left, with a clearance for "the option" (low approach or touch and go). The airplane made a missed approach without contacting the tower. At 12:07:38, the local controller asked the radar operator (via interphone) to have N156PA contact him. Repeating the directions to the aircraft to contact the tower, the radar facility, at 12:07:40, directed N156PA, saying, "Convair Six Papa Alpha, tower one one eight point one. [frequency of the tower 118.1 Mhz]

At 12:07:43, N156PA announced, still on approach control's frequency, that he had commenced a missed approach, saying, "cause we're way too high." He then was given vectors for VOR approach to runway 10, and indicated that he would terminate the approach with a full stop [transmitted at 12:09:05].

At 12:13:16, N156PA read back a VOR approach clearance to approach control, and acknowledged that the approach would terminate with a full stop.

Approximately one minute later at 12:14:29, approach control directed N156PA to contact the tower on 118.1 Mhz. The FAA check pilot in N156PA acknowledged. That was the last transmission prior to ground collision.

At 12:15:51 the tower local controller attempted contact with N156PA without success. This prompted intercom calls to the IFR room (approach controller) and until the time of impact, there were seven additional transmissions to alert N156PA (including a United Airlines pilot) on local control frequency, three additional transmissions on approach control's frequency, two transmissions on ground control frequency and unrecorded transmissions on guard frequencies (121.5/243 Mhz).

AERODROME INFORMATION

Boise Air Terminal runway 10 Right is 190 feet wide and 9763 feet long. N156PA landed, on the approximate center of the runway, 30 feet past the entrance to Taxiway G and slid approximately 1000 feet to a position on the runway abeam the opening throat to Taxiways D and A. The control tower's view of the traffic pattern, runways and field boundaries is unrestricted.

The field elevation is 2858 feet (msl). The density altitude for a 79 degree (F) day (26.5 C) is approximately 5000 feet (msl).

FLIGHT RECORDERS

N156PA was not equipped, nor was it required to be equipped with flight or data recorders.

WRECKAGE AND IMPACT INFORMATION

Refer to photographs attached as a supplement to this report.

ADDITIONAL DATA

Investigators conducted recorded interviews with both pilots of N156PA, as well as the company chief pilot, at the Boise Flight Standards District Office. The interviewer was the NTSB IIC and was assisted by Ms. Mary Hoy, FAA Inspector (Ops) from the NW Mountain Region, Seattle.

Interview of Pilot

The interview of First Officer Eckols reviewed his flight experience, the accident flight and his recollection of the events leading to the gear-up landing.

Mr. Eckols said that he had received a "pre-check ride" with Chuck Troutman in the Convair on the previous Thursday in Kansas, and it had lasted one hour and forty minutes. Asked if he had been in the left seat of the Convair before that time, he answered that he had, a total of 5 to 10 hours, "on empty legs." He said also that he had not had simulator instruction. Mr. Eckols was asked if he had any other dedicated training flights in the Convair, and he replied, "I don't recall any dedicated training, . . . if any, it wasn't recent."

He said that he did not have a written recommendation in his log book to take the check flight, but that "Bud Rude recommended me to Bob Rountree." Mr. Eckols said that the check pilot did not ask to see his log book, or make reference to qualifications for the checkflight. Asked if the examiner had verified any training that he (Eckols) had received, and he said that "he didn't look at any training records, Bob (Rountree) knew we were coming up, Bud set it up." Asked if the examiner had inquired to his left seat experience, he said, "Bob didn't discuss it with me."

Mr. Eckols recalled that the examiner gave him a 30 minute oral examination, between 10:30 AM and 11:00 AM, before the flight. He said that the examiner's briefing included instruction that he (the examiner) would act "like a good copilot, . . .experienced, as opposed to a green one."

(Note from Boise ATCT-181 report: N156PA contacted clearance delivery at 10:49 and received clearance to depart Boise by visual flight rules.)

He stated that, in his recollection, the check flight was satisfactory, until the gear up landing.

Investigators reviewed, with Mr. Eckols, the maneuvers performed prior to the accident approach. On a previous (NDB) approach, Mr. Eckols recalled that the check pilot had said at minimum descent altitude, "Let's go around," initiating the missed approach. Asked if the timing (from the final approach fix) was such to initiate the go-around, Eckols said, "no, it was not up yet, but he decides when to go around." Mr. Eckols had said that prior to commencing that approach, there had been no briefing by either Mr. Rountree or him, regarding how that approach would terminate.

Asked if he could remember calling for the gear (gear down), he said that he could not recall. Asked if he heard "minimums" called out, he said, "I remember thinking 'minimums' but I can't remember if I heard it or not. I was just flying the approach, concentrating on making the landing." Asked if he had intended to "go around," he said, "no." He said that he did not realize that his wheels were retracted and was surprised when the propeller tips struck the runway.

The record of transmissions from N156PA to approach control showed that the check pilot had broadcast intentions to make a full stop landing.

The pilot said that he had flown the Convair from the right seat on a number of occasions and that "Bud Rude" had been his instructor. He said that he did not recall how much flight time he had in the left seat. He also said that he did not recall receiving training in cockpit resource management (CRM).

Interview with the FAA checkpilot

The interview with FAA examiner Robert Rountree reviewed his flight experience, events of the accident flight, and his views of cockpit resource management and the conduct of check rides.

Mr. Rountree told investigators that FAA Order 8400.10 permitted him to act as a flight crewmember and to occupy the copilot's position on check flights. He said that until recently, he was the only qualified Convair check pilot in the country and that he was fully qualified and current to function as a crewmember.

Of the check flight, he said that it was not progressing satisfactorily and that he "already had decided that it would be unsat" (unsatisfactory for the purpose of qualification). Investigators asked him if he had informed the pilot (receiving the check ride) that it was unsatisfactory. He said that he had not, at the time of the accident.

Mr. Rountree was asked who, during the accident flight, initiated checklists, and he replied, that it was supposed to be the pilot's job, but at times, he initiated them if the pilot did not. He said that he could not recall the pilot calling for the landing checklist, and that he "decided to hold the gear until closer in." (closer to the runway on the final approach.)

He was asked to recall the events of the final approach. Mr. Rountree said, "Rom (Romuald Eckols) was standing on the power, I thought he was going to go-around." Asked if he could recall communications from the tower during that approach. He said that he did not recall.

Asked if he recalled the sound of the horn (gear-retracted warning horn). He said that he did remember the horn was sounding.

Mr. Rountree was asked if he recalled a briefing for the approach or other communications such as calling for the gear, minimums or the call to go-around or to land. He said that he could remember that some things were briefed, but not recall the specific call- outs.

Mr. Rountree was also asked if he had attended any cockpit resource management training classes. He said that he had attended a number of them and to investigators described a series of manufacturer's flight training sessions which did not address the concept of CRM training, as defined by AC-120-51. (December 1, 1989, AFS-210)

He was asked if he had planned to "give a check ride to the jump seat observer." Mr. Rountree said that he was not certain of that, but he recalled that he had told "Bud Rude, I would do it if there was time."

Interview with Captain Richard L. (Bud) Rude

The Renoun/Cool Air Chief Pilot told investigators that he had trained Mr. Eckols and that he recommended him for his checkflight in the Convair. Captain Rude said, "I felt he was ready, . . . I conveyed this to Bob (Rountree)."

He was asked the purpose of his daughter, Ms. Kathy Rude, occupying the jump seat during the checkride. He said, "after Rom, she was here for a commercial type ride." (Check flight for Convair 240 type rating on her commercial license).

Captain Rude said that he "could not recall him (Eckols) in the left seat," but that "any good copilot can go to the left seat, the only difference is the nose wheel steering."

Captain Rude said that Mr. Rountree occupied the right seat of the Convair "against his wishes, . . . and acted as pilot-in- command." Mr. Rountree denied that this information was conveyed before the flight.

Interview with jump seat observer

Investigators interviewed Ms. Kathy Rude. She stated that she had a Commercial Pilot Certificate with 763 total hours, as pilot of nine different airplanes, including Cessna 140, 150, Apache 150, Seneca, Twin Seabee, PBY Catalina, Piper Cub and Piper Turbo-Lance. She told investigators that she had 360.7 hours of multiengine pilot time, with 317.3 hours as copilot of the Convair 240. Investigators calculated that the other 43.4 hours were divided, in unknown amounts between the other multiengine Apache-150, Seneca, Twin Seabee, PBY Catalina airplanes.

She said that during her flight in the jump seat of N156PA in which she was observing to prepare for her "type ride," she was not wearing a headset and could not hear communications. She recalled that there was a 30 minute oral exam, lasting from 10:30AM to 11:00AM. Ms. Rude recalled that "Rom was the pilot and Rountree would be a 'good copilot' and that Mr. Rountree would be "in command if it became unsafe."

Ms. Rude could not recall specific airspeeds, altitudes or maneuvers, but recalled some airwork that included practice approach to stalls." She said that she did not recall seeing any reference made to performance charts prior to executing a stall series. Ms. Rude recalled hearing the gear warning horn sounding throughout the approach to the gear-up landing.

Investigators of the NTSB and FAA reviewed FAA Order 8400.10 and 8700.1, effective May 5, 1993. Specifically, reference was made to Section F., Inspector Status During Practical Tests. This section states, in part:

"(3) During practical tests given on aircraft requiring a flightcrew of two or more, the inspector should give the practical test from the designated jump seat or place in the cabin from which the flight, crew coordination, and cockpit resource management can be adequately observed.

(4) If no jump seat is available, the inspector may exercise discretion in deciding which seat to occupy during the practical test. Aircraft seating configuration and the inspector's skills, limitations, recent experience, and qualifications should be considered. If the practical test is conducted at the ATP level, the requirements of paragraph 2F(1) of this bulletin must be observed."

The requirements of paragraph 2F(1) states in summary, that an inspector is not the pilot in command (PIC) of the aircraft during the practical test unless acting in that capacity for the flight, or a portion of the flight, or by prior arrangement with the applicant. To administer a practical test for an ATP certificate or class or type rating on that certificate, . . . and inspector occupying a pilot seat must be fully qualified and current to act as PIC in that aircraft.

Pilot Information

Certificate:	Commercial; Private	Age:	31, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last Medical Exam:	06/10/1993
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	2128 hours (Total, all aircraft), 1400 hours (Total, this make and model), 360 hours (Pilot In Command, all aircraft), 150 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CONVAIR	Registration:	N156PA
Model/Series:	240 240	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	324
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	AAIP	Certified Max Gross Wt.:	41790 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:		Engine Manufacturer:	P&W
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	R2800
Registered Owner:	COOL AIR, INC.	Rated Power:	2400 hp
Operator:	RICHARD L. RUDE	Air Carrier Operating Certificate:	Supplemental
Operator Does Business As:	RENOUN AVIATION/COOL AIR INC.	Operator Designator Code:	WARM

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BOI, 0 ft msl	Observation Time:	0950 PDT
Distance from Accident Site:	1 Nautical Miles	Direction from Accident Site:	260°
Lowest Cloud Condition:	Clear / 0 ft agl	Temperature/Dew Point:	29° C
Lowest Ceiling:	None / 0 ft agl	Visibility	40 Miles
Wind Speed/Gusts, Direction:	5 knots, 90°	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	(BOI)	Type of Flight Plan Filed:	VFR
Destination:		Type of Clearance:	IFR
Departure Time:	1103 PDT	Type of Airspace:	Class D

Airport Information

Airport:	BOISE (KBOI)	Runway Surface Type:	Asphalt
Airport Elevation:	2858 ft	Runway Surface Condition:	Dry
Runway Used:	10	IFR Approach:	VOR/DME
Runway Length/Width:	9763 ft / 190 ft	VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	DOUGLAS R HERLIHY	Adopted Date:	12/02/1994
Additional Participating Persons:	MARY HOY; RENTON, WA		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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