National Transportation Safety Board
Aviation Accident Final Report

Location:	Hawthorne, CA	**Accident Number:**	LAX02FA300
Date & Time:	09/29/2002, 0913 PDT	**Registration:**	N343AE
Aircraft:	Fairchild SA227-AC	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Serious, 20 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The airplane veered off the runway during a rejected takeoff, overran an airport sign, and impacted a hangar. The captain stated that during the after start checklist he moved the power levers to disengage the start locks on the propellers. Post accident examination found that the left propeller was still in the start lock position, while the right propeller was in the normal operating range. The captain was the pilot flying (PF) and the second-in-command (SIC) was the nonflying pilot (NFP). After receiving their clearance, the PF taxied onto the runway and initiated the takeoff sequence. The SIC did not set and monitor the engine power during takeoff, as required by the company procedures. During the takeoff acceleration when the speed was between 40 and 60 knots, the captain released the nose gear steering control switch as the rudder became aerodynamically effective. When the switch was released, the airplane began immediately veering left due to the asymmetrical thrust between the left and right engine propellers. The PIC did not advise the SIC that he had lost directional control and was aborting the takeoff, as required by company procedures. The distance between where the PIC reported that he began the takeoff roll and where the first tire marks became apparent was about 630 feet, and the distance between where the marks first became apparent and where the airplane's left main landing gear tire marks exited the left side of the runway was about 220 feet. Thereafter, marks (depressions in the dirt) were noted for a 108-foot-long distance in the field located adjacent to the runway. Medium intensity tire tread marks were apparent on the parallel taxiway and the adjacent vehicle service road. These tread marks, over a 332-foot-long distance, led directly to progressively more pronounced marks and rubber transfer, and to the accident airplane's landing gear tires. Based on an examination of tire tracks and skid marks, the PIC did not reject the takeoff until the airplane approached the runway's edge, and was continuing its divergent track away from the runway's centerline. The airplane rolled on the runway through the dirt median and across a taxiway for 850 feet prior to the PIC applying moderate brakes, and evidence of heavier brake application was apparent only a few hundred feet from the impacted hangar. No evidence of preimpact mechanical failures or malfunctions was found with the propeller assemblies, nose wheel steering mechanism, or brakes.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot-in-command's failure to maintain directional control during the rejected takeoff. The loss of directional control was caused by the crew's failure to follow prescribed pretakeoff and takeoff checklist procedures to ensure the both propellers were out of the start locks. Contributing factors were the failure of the crew to follow normal company procedures during takeoff, the failure of the flightcrew to recognize an abnormal propeller condition during takeoff, and a lack of crew coordination in performing a rejected takeoff.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: TAKEOFF - ROLL/RUN

Findings
1. 1 ENGINE
2. (C) PROPELLER SYSTEM/ACCESSORIES,PITCH CHANGE MECH - NOT ENGAGED
3. (C) CHECKLIST - NOT FOLLOWED - PILOT IN COMMAND
4. (C) PROCEDURES/DIRECTIVES - NOT COMPLIED WITH - FLIGHTCREW
5. (C) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND
6. (F) CREW/GROUP COORDINATION - INADEQUATE - FLIGHTCREW

Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: TAKEOFF - ABORTED

Findings
7. OBJECT - BUILDING(NONRESIDENTIAL)
8. ABORTED TAKEOFF - INITIATED - PILOT IN COMMAND
9. (C) GROUND LOOP/SWERVE - NOT CORRECTED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On September 29, 2002, about 0913 Pacific daylight time, a Fairchild SA227-AC, N343AE, veered off the runway during a rejected takeoff and collided with objects at the Hawthorne Municipal Airport, Hawthorne, California. There were 21 persons on board the airplane. Neither of the 2 airline transport certificated pilots was injured; 1 of the 19 passengers was seriously injured, and the other 18 passengers were not injured. The airplane was substantially damaged. The airplane was operated by the Hawthorne-based C.A.T.S. Tours, Inc., d.b.a. Skylink Charter, LLC. An instrument flight rules flight plan was filed, and visual meteorological conditions prevailed. The on-demand air taxi flight with fare-paying passengers was operating under the provisions of 14 CFR Part 135. The flight was originating at the time of the accident as a nonstop flight to the Grand Canyon National Park, Arizona.

The PIC, who was handling the flight controls from the airplane's left seat, verbally reported to the National Transportation Safety Board investigator that no evidence of any mechanical problem was evident during the preflight inspection of the airplane. The engines started normally, and the "after start" checklist was completed.

At 0853, the Hawthorne Airport local air traffic controller (LC) issued N343AE an instrument flight rules clearance to the Grand Canyon, Arizona, the flight's intended destination. About 11 minutes later, at 0904, the LC cleared the airplane to taxi to runway 25.

At 0910:35, the LC issued the airplane a takeoff clearance. According to the PIC, he taxied via Intersection Alpha onto the beginning of the runway near the east side perimeter fence. While taxiing the nose gear steering system operated normally.

The PIC verbally reported to the Safety Board investigator that after he positioned the airplane on runway 25's centerline, he verified that both propellers were off the start locks, "whereupon he positioned the power levers forward to obtain takeoff power. The PIC reported that during the first few seconds of the takeoff roll nothing abnormal was noticed with the operation of the airplane. When the airplane had accelerated between 40 and 60 knots (the speed at which the rudder becomes aerodynamically effective), the second-in-command (SIC) called "airspeed alive," and the PIC released the nose wheel steering button (switch) on the left power lever thus disengaging the nose wheel steering control system that had been functioning normally.

According to the PIC, at this time, he observed that the airplane began veering left of the runway's centerline. The PIC further indicated that he then "initiated an abort" to reject the takeoff by retarding the power levers to the ground idle position and by applying brakes. The airplane continued veering left, so he applied full right rudder and full reverse on the right engine's propeller in an attempt at regaining directional control. This action was followed by application of moderate pressure to the brakes, and finally maximum brakes were applied as the airplane continued veering left and directional control was not regained.

The PIC stated that during the mishap he had not solicited any assistance from the SIC. He did not advise the SIC that he was rejecting the takeoff.

After the airplane veered off the side of the runway it traversed a dirt field (median area) where it overran an airport runway sign. Thereafter, the airplane crossed an active taxiway and a vehicle service road. The airplane came to rest upon impacting and partially penetrating a T-

hangar.

OTHER DAMAGE

The airplane overran and destroyed the 1,000-foot runway distance marker sign that was located on the south (left) side of runway 25. The Hawthorne airport manager reported that the sign was constructed with an internal 100-watt transformer that had copper wire windings around its core. The transformer was mounted near the base of the sign. (See photographs of the airport's 2,000-foot runway distance marker sign, which is similar to the accident sign, and its internal transformer.)

Debris from the accident sign was located at and upwind from its mounted location. The transformer, which was separated from the sign, was located on the north side of the runway several hundred feet northwest of the sign. Strands of copper wire were observed dislodged and missing from the transformer's core.

Several T-hangars were impact damaged. Parked inside the hangars, and also damaged, were a Cessna 172, a Piper PA-28-140, a Beech A36, and an automobile. Emergency locator beacons (ELTs) were noted transmitting from two of the three impacted airplanes.

PERSONNEL INFORMATION

Pilot-in-Command, Certificates & Experience.

The PIC held an airline transport pilot certificate, with a multiengine land rating. He had commercial pilot privileges for single engine land airplanes. His total flight time and flight time as pilot-in-command of a Fairchild SA227, for which he was type-rated, were 2,858 and 696 hours, respectively. During the preceding 90-day period, the pilot had flown the airplane 74 hours.

The pilot held an airframe and powerplant mechanic certificate. Since April 2001, he had been employed as the Director of Maintenance (DM) for the operator, C.A.T.S. Tours, Inc.

Pilot-in-Command, Accident/Incident History.

On January 5, 1997, the pilot (who was serving as the first officer) was involved in an accident while flying a Fairchild SA227 during an air taxi flight to the Grand Canyon for a company called FNG Aviation, d.b.a. Skylink Charters of Santa Monica, California. The Safety Board determined that, in pertinent part, the probable cause of the accident was failure of the pilot(s) to follow the airplane's flight manual checklist procedure. This action resulted in a dual engine flame-out and forced landing.

Second-in-Command, Certificates & Experience.

The SIC held an airline transport pilot certificate, with airplane single-engine and multiengine land ratings. His total flight time and flight time as pilot-in-command of a Fairchild SA227 were 4,462 and 0 hours, respectively. The pilot's total flying experience (copilot time) in the accident model of airplane was 612 hours.

The SIC also held a certified flight instructor (CFI) certificate, for single engine and multiengine airplanes, and instrument airplane.

Second-in-Command, Accident/Incident History.

A review of Federal Aviation Administration (FAA) records indicated the SIC had received a

Notice of Disapproval for failure to pass the Commercial Pilot certificate examination in September 1993. He subsequently passed. In November 1993, he received a Notice of Disapproval for failure to pass a CFI certificate examination for airplanes, but he subsequently passed. In 1994, he received a Notice of Disapproval for failure to pass a CFI, instruments, examination, but passed upon reexamination.

The SIC was involved in an August 1997 incident when the landing gear of the airplane he was flying retracted during takeoff. The investigation determined that the gear lever had been placed in the "up" position prior to takeoff and was not detected by the pilot. In December 1997, the SIC twice failed the entire CFI reexamination and received Notices of Disapproval. Thereafter, he voluntarily surrendered his CFI certificate on December 30, 1997.

The SIC obtained new CFI certificates for single and multiengine airplanes in February and March 1998, respectively. Also in 1998, while he was flying for an air carrier, he hit the wing tip of another airplane while taxiing, and his employment was terminated by the company. After working for other air carriers, he commenced employment with C.A.T.S. Tours, Inc., in April 2001.

Director of Operations and History of Companies.

The Director of Operators (DO) of C.A.T.S. Tours, Inc., d.b.a. Skylink Charter, was also president of the company. He was responsible for personnel employment at his company.

The DO formerly worked as an employee of FNG, d.b.a. Skylink Charter. According to FAA records, between 1996 and 1998, several FNG employees (not the DO) performed a series of acts which resulted, in part, in the FAA taking airman certificate suspension and revocation actions, and assessment of a civil penalty against the company. In addressing the FAA's forthcoming air carrier certificate revocation action, FNG surrendered its operating certificate.

AIRPLANE INFORMATION

The FAA issued the airplane, serial number AC-554, a standard airworthiness certificate in the normal category following its manufacture in February 1983. The identified manufacturer and model of airplane was Fairchild Swearingen, SA227-AC. The operator referred to the airplane as a "Metro III."

Maintenance and Records.

The airplane was maintained by the operator on a continuous airworthiness maintenance program (CAMP). As of September 29, 2002, the airplane's total airframe time was 30,659.7 hours, and 44,949 landings had been recorded. The accident pilot, who was also the DM, reported to the Safety Board investigator that at times he had personally performed maintenance on the airplane, and he had supervised maintenance performed by other company mechanics. He similarly performed and oversaw maintenance on another Fairchild SA227, N227LC, that was operated by the company.

The DM reported that all equipment/systems in the accident airplane were operative upon dispatch for the accident flight. There were no MEL'd items.

The FAA coordinator reported that the airframe, engine, and propeller's maintenance records were reviewed with no discrepancies noted. Also, a review of the airplane's maintenance logbook revealed that all discrepancies recorded had been addressed in accordance with the operator's CAMP.

Propeller Blade Identification.

According to the propeller logbooks, Dowty Rotol LTD propeller hub #1458 was installed on the airplane's left engine with the following blade serial numbers: #1, A146961; #2, A153371; #3, A146972; and #4, A153380. A Dowty Rotol LTD propeller hub #2337 was installed on the airplane's right engine, with the following blade serial numbers: #1, A138552; #2, A138555; #3, A138559; and #4, A138561.

METEOROLOGICAL INFORMATION

At 0853, Hawthorne airport reported that the wind was calm, and the visibility was 10 miles. There were a few clouds at 500 feet, scattered clouds at 1,000 feet, and a broken ceiling at 7,000 feet above ground level. The temperature and dew point were 18 and 14 degrees, respectively.

At 0915, Hawthorne airport reported that the wind was calm, and the visibility was 10 miles. There were scattered clouds at 1,000 and 2,000 feet, and a broken ceiling at 5,000 feet above ground level.

COMMUNICATION

The FAA reported that all communications with the accident airplane's flight crew were normal.

AIRPORT AND GROUND FACILITIES

The Hawthorne airport manager and the FAA reported that all airport facilities were operating normally. There was no ongoing construction on or near runway 25, on the taxiway south of the runway, or on the adjacent area between the runway and the T-hangar into which the airplane collided.

The Hawthorne airport's elevation is 66 feet mean sea level. Runway 25's magnetic bearing is 252.9 degrees. The concrete runway is 4,956 feet long and 100 feet wide. The threshold is displaced westward 463 feet.

COCKPIT VOICE RECORDER

Examination.

The airplane was equipped with a cockpit voice recorder (CVR). The airplane was not required to be equipped with a flight data recorder, and none was installed.

The Fairchild Model A100A CVR, serial number 57723, was sent to the Safety Board's Audio and Vehicle Recorders Laboratory in Washington, D.C. for readout. The laboratory specialist reported that the CVR contained no relevant recording, and no transcript was prepared.

The CVR's examination revealed that it did not exhibit evidence of structural damage. The interior of the recorder and the tape sustained no apparent heat or impact damage. The main drive motor for the recorder was found to be inoperative. The recording contained audio from a flight into some other airport far from the accident airport, on an undetermined date.

The Safety Board investigator and the DM (accident pilot) examined the functionality of the CVR on another of the operator's airplanes, a Fairchild SA227-AC, N227LC, that had just landed following an air taxi flight. It too was found inoperative. The DM stated that he was unaware N227LC's CVR was inoperative. He stated that immediate action would be taken to

have the CVR repaired.

Preflight Inspection.

Neither of the accident airplane crewmembers reported that they had confirmed the functionality of the CVR system prior to the accident flight, which was the first flight of the day, by listening to the recorder signal using a headset. The FAA accepted "Normal (Preflight) Procedures Checklist" did not require assuring proper CVR functionality by inserting a headphone plug into the CVR jack on its control panel and listening to the test tone.

For the accident airplane, the FAA approved "Before Starting Engines" procedure required checking the CVR by pressing its self test button. Thereafter, normal operation would be confirmed by noting needle deflection in the green band on the control unit's "go-no-go" indicating device meter.

Maintenance History.

According to the operator's Maintenance Tracking System, the CVR service overhaul interval was 8,000 hours. The CVR was installed in the accident airplane at a total airplane time of 27,557.0 hours. Its next overhaul service was due at 35,557.0 hours. The DM reported that routine checks of the CVR's functionality are performed at 75-hour service check intervals following the procedures listed in the airplane's flight manual, rather than in Fairchild's maintenance manual.

WRECKAGE AND IMPACT INFORMATION

The accident site/main wreckage was located on the Hawthorne Municipal Airport, about 0.2 miles southwest of runway 25's threshold, at the following approximate global positioning satellite coordinates: 33 degrees 55.347 minutes north latitude by 118 degrees 19.879 minutes west longitude. The airplane came to rest about 192 feet (lateral distance) south of the runway's left edge, which is also about 242 feet south of the runway's centerline.

Airplane Impact Damage.

The forward half of the airplane's fuselage was found imbedded in an airport T-hangar. The left nose wheel was observed broken and its tire was separated from the wheel. The airplane's nose cone was crushed in an aft direction.

The outboard 6-foot-long portion of the airplane's left wing was severed and crushed in an aft direction. The right wing's leading edge was also crushed in an aft direction. Fuel was observed leaking from the airplane. There was no fire.

The left side of the fuselage was punctured inward in several locations approximately abeam the propeller's plane of rotation. One rectangular shaped hole was about 4 by 7 inches in size. A second hole, with an irregular/jagged shape, was about 3 by 4 inches in size. This second hole was located about 1.5 feet below the larger hole, and it only penetrated the airplane's outer skin panel.

The larger hole extended completely through the pressure vessel on the left side of the fuselage. There was an associated/adjacent puncture-like hole situated near cabin floor level on the left side interior of the passenger cabin. This hole was located inches forward of the seat that had been occupied by the seriously injured passenger.

An exit-like hole was present on the right side of the cabin, at window level. The exit hole, and associated outward fuselage frame deformation, was approximately abeam the left side fuselage entrance hole (see photographs).

A further examination of the left side (larger) entrance/puncture hole in the airplane's fuselage revealed the presence of several strands of imbedded copper wire. The wire appeared consistent with the wire size and color that was found in the impacted runway distance sign's transformer. The transformer that was found on the north side of the runway was placed into the puncture hole, and it appeared to be approximately the same size as the hole.

Airplane Tire Tracks.

The Safety Board investigation team examined the area from where the pilot reported he had commenced his takeoff roll on pavement east of the runway's threshold, to the airplane's ultimate point of rest.

In pertinent part, the following observations were made and ground scar signatures documented:

(1) Very light (barely discernable) tire tread signature marks first became apparent on the runway surface 10 feet left of the runway's centerline, in the vicinity of the bottom portion of where the runway "25" numbers were painted;

(2) The marks were oriented toward the accident airplane and were associated with the accident airplane's nose wheel tires;

(3) The initial segment of the marks were oriented on a magnetic track of 247 degrees;

(4) The marks became increasingly apparent (darker) as their direction arced toward the left side of the runway;

(5) Light intensity marks consistent with the two left and the two right main landing gear tires first became apparent approximately 10 yards before they reached the runway's edge;

(6) These marks were oriented on a course of about 237 degrees at the point where they exited the left side of the runway;

(7) The distance between where the PIC reported that he began the takeoff roll and where the first marks (from any of the accident airplane's tires) became apparent is estimated at 630 feet;

(8) The distance between where the marks first became apparent and where the airplane's left main landing gear tire marks exited the left side of the runway was about 220 feet. Thereafter, marks (depressions in the dirt) were noted for a 108-foot-long distance in the field located adjacent to the runway;

(9) The airport's asphalt south taxiway is located adjacent to the south side of the dirt field. Medium intensity tire tread marks were apparent on this taxiway and the vehicle service road. These tread marks, over a 332-foot-long distance, led directly to progressively more pronounced marks and the accident airplane's landing gear tires.

In summary, the approximate total distances between where the airplane commenced its takeoff roll and (1) the location where tire marks were first noted; (2) the location where the airplane departed the runway's edge; and (3) the point of impact were: 630, 850, and 1290 feet, respectively, as measured and reported by Hawthorne airport personnel (see the wreckage diagram).

MEDICAL AND PATHOLOGICAL INFORMATION

On September 29, 2002, both pilots submitted to drug tests. The tests were performed by the operator's contract laboratory. The tests were negative for screened drugs.

TESTS AND RESEARCH

Flight Manual Procedures Regarding Start Locks Disengagement and Taxi.

The company procedure for the release of the propeller start locks is identified in the Metro III flight manual. In part, it states the following:

1. Power levers must be moved aft of ground idle far enough to cause a definite increase in torque and then moved forward of ground idle far enough to check that torque is high enough to indicate that the start locks have released.

2. Positive assurance that the start locks have released may be gained during taxi by slowly advancing one power lever from ground idle to a positive thrust position and noting acceleration and turning tendency.

Flight Manual Takeoff Procedure.

The company takeoff procedures required that the flying pilot (FP) advance the power levers to within 10 percent of takeoff torque and call out "set takeoff power." At this time the nonflying pilot (NFP) would adjust the power levers to the charted takeoff torque, note exhaust gas temperature, and call out "power is set." Also, during the takeoff roll, the NFP would monitor the annunciator lights and engine instruments.

During Safety Board investigator interviews with the crew members, they acknowledged that they had not followed these aforementioned company takeoff procedures. The PIC-captain, who was the FP, pushed the power levers forward for takeoff and set the takeoff torque, but he did not announce "power set." The copilot, who was the NFP, stated that he did not adjust the power levers as required. He said that he noticed the torque passing about 40 percent during the beginning of the takeoff roll, but he did not monitor the engine power indications during the rest of the takeoff roll.

Flight Manual Rejected Takeoff Procedures.

The company procedure for maintaining positive airplane control while rejecting a takeoff is identified in the Metro III flight manual. In part, the company rejected takeoff procedures required either pilot to call "ABORT, ABORT" when a rejected takeoff was performed. The flight manual indicates that the FP will retard both power levers immediately to ground idle power and apply braking and reverse thrust as required.

During the Safety Board investigator interviews with the crewmembers, the pilots stated that they had not followed these rejected takeoff procedures. Neither pilot called "ABORT, ABORT" during the rejected takeoff. The PIC said that he did not recall if he had applied brake pressure during the rejected takeoff. In his written statement, the PIC stated that he had applied brake pressure during the rejected takeoff.

The SIC stated during his interview that when the airplane began to depart the centerline of the runway, he applied input to the rudder pedals and also applied brake pressure. In his written statement, the SIC reported that he "clearly remembered that the right rudder was all the way

to the floor," and he had a hard time applying pressure with his right toe because of the distance to the rudder pedal.

Airplane Examination.

An FAA aviation safety inspector reported that during his examination of the airplane's cockpit, the right engine's power lever was found in the reverse position. The left engine's power lever was forward of reverse in the Beta range. The speed levers were both in the high position. The left and right engine fuel shutoff switches were in the open position.

The FAA inspector also reported observing that the left engine's propeller assembly appeared to be on the start locks (engaged), contrary to the position expected for normal takeoff operation. The right propeller assemblies were not on the start locks. The right blades appeared to be positioned at a pitch angle consistent with reverse. The FAA inspector opined to the Safety Board investigator that, in this configuration, the airplane would begin a pronounced turn to the left as soon as the nose wheel steering button on the left power lever was released.

The nose wheel steering system was examined and the steering actuator was found impact damaged. Dual nose wheel tire tracks were noted leading up to the impacted runway sign, and a single darker track was observed leading away from the sign. The left nose wheel was found broken and without a tire. The brake systems were examined from the pilot and copilot's side. With the exception of the left aileron, which was in an impact-damaged portion of the wing, the continuity of the flight controls was confirmed.

There were no open maintenance items for components associated with the airplane's directional control system or propeller assemblies. During the airplane examination, no evidence was found of any preimpact mechanical failures or malfunctions.

Propeller Examination, Initial Teardown.

Both propeller assemblies were removed from the airplane and were torn down in October 2002, under Safety Board investigator supervision at a certificated propeller repair station. Repair station personnel reported that except for the impact damage, all propeller assemblies were found in an operational condition with no evidence of preimpact damage or anomalies.

Propeller Examination, Blade Pitch Angle Documentation.

Under FAA supervision, in November 2002, personnel from Dowty Propellers--Americas examined the airplane's Dowty Rotol propellers to ascertain the blades' pitch angles during their initial impact with objects. The examination of the butt end of the four right side blades revealed witness marks consistent with the four blades having been at, or close to, the full reverse blade angle of -13.5 degrees at impact.

Regarding the left propeller blades, no evidence was noted on blade #1 and blade #2 indicating the blades' angle. The butt of blade #4 indicated a -10 degree pitch at impact. The butt of blade #3 indicated a pitch angle between 0 degrees and -1 degree. This blade, number 146972, was impact damaged at a location about 31 inches outward from its measurement reference station. At this location, an approximate 4- to 5-inch-long depression was noted in the blade's leading edge.

Propeller Operating Procedures and Blade Angle Specification.

The Dowty Maintenance Manual states that "it is essential that a reverse pitch is selected on

engine shutdown to ensure that the starting latches engage on the piston for subsequent restarting."

The starting latch angle is from -1.75 degrees to 0.5 degrees. The full reverse angle is from -14.5 degrees to -12.5 degrees.

Charts.

An FAA "Airport/Facility Directory," southwest United States, was observed in a pocket on the right side of the cockpit, next to the SIC's right seat. The directory bore an expiration date of August 8, 2002, and a label with the accident airplane's registration number.

ADDITIONAL INFORMATION

Additional Business Name.

On June 7, 2002, the DO wrote a letter to his company's assigned FAA principal operations inspector. The DO requested that the name "Ravenair" be added to the operations specifications as a second fictitious business name for C.A.T.S. Tours, Inc. The name "Custom Air Transport Services" was already listed as a d.b.a.

Wreckage Release.

The airplane wreckage was released to its owner on December 18, 2002.

Pilot Information

Certificate:	Airline Transport	**Age:**	41, 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:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Without Waivers/Limitations	**Last FAA Medical Exam:**	04/01/2002
Occupational Pilot:		**Last Flight Review or Equivalent:**	05/01/2002
Flight Time:	2858 hours (Total, all aircraft), 2212 hours (Total, this make and model), 1182 hours (Pilot In Command, all aircraft), 81 hours (Last 90 days, all aircraft), 34 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport; Flight Instructor	**Age:**	34, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 With Waivers/Limitations	**Last FAA Medical Exam:**	01/01/2002
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	4462 hours (Total, all aircraft), 612 hours (Total, this make and model), 3756 hours (Pilot In Command, all aircraft), 215 hours (Last 90 days, all aircraft), 52 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Fairchild	**Registration:**	N343AE
Model/Series:	SA227-AC	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Transport	**Serial Number:**	AC 554
Landing Gear Type:	Retractable - Tricycle	**Seats:**	21
Date/Type of Last Inspection:	09/01/2002, Continuous Airworthiness	**Certified Max Gross Wt.:**	14500 lbs
Time Since Last Inspection:	23 Hours	**Engines:**	2 Turbo Prop
Airframe Total Time:	30660 Hours at time of accident	**Engine Manufacturer:**	Garrett
ELT:	Installed, not activated	**Engine Model/Series:**	TPE331-11U
Registered Owner:	Air Demand, LLC	**Rated Power:**	1000 hp
Operator:	C.A.T.S. Tours, Inc.	**Operating Certificate(s) Held:**	On-demand Air Taxi (135)
Operator Does Business As:	Skylink Charter, LLC	**Operator Designator Code:**	C9UA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	HHR, 66 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	0915 PDT	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 1000 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	Broken / 5000 ft agl	**Visibility (RVR):**	
Wind Speed/Gusts:	Calm /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.97 inches Hg	**Temperature/Dew Point:**	18°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hawthorne, CA (HHR)	**Type of Flight Plan Filed:**	IFR
Destination:	Grand Canyon, AZ (GCN)	**Type of Clearance:**	IFR
Departure Time:	0913 PDT	**Type of Airspace:**	Class D

Airport Information

Airport:	Hawthorne (HAW)	**Runway Surface Type:**	Concrete
Airport Elevation:	66 ft	**Runway Surface Condition:**	Dry
Runway Used:	25	**IFR Approach:**	None
Runway Length/Width:	4956 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious, 18 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 20 None	**Latitude, Longitude:**	33.922500, -118.331389

Administrative Information

Investigator In Charge (IIC):	WAYNE POLLACK	**Report Date:**	10/27/2005
Additional Participating Persons:	Richard Lewandowski; Federal Aviation Administration; Los Angeles, CA		
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.ntsb.gov/pubdms/.		