Aviation Investigation Final Report

Location:	Livermore, California	**Accident Number:**	WPR14LA025
Date & Time:	October 20, 2013, 13:59 Local	**Registration:**	N15TA
Aircraft:	Aviat S2	**Aircraft Damage:**	Substantial
Defining Event:	Ground collision	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

While taxiing after landing at a controlled airport, a Pitts tailwheel-equipped airplane collided with a Cessna that was standing with its engine operating. Both airplanes were on instructional flights with a flight instructor and a rated pilot who was receiving instruction aboard.

The airport was equipped with two parallel runways, designated as 25L and 25R. Taxiway G was situated at the end of 25L, was oriented perpendicular to the runways, and extended slightly south of 25L where it terminated at a parallel taxiway. The air traffic control tower (ATCT) was staffed by four persons serving three positions. One person was serving as controller in charge (CIC), one person was serving as local controller (LC), and two people were assigned to the ground controller (GC) position. A controller-in-training (CIT) was actively performing the GC duties, and he was being trained by a full performance level controller.

The Cessna landed on 25L and, as instructed by the LC, exited south onto taxiway G, stopped, and called the GC to obtain clearance to taxi; however, the GC did not respond to the taxi request. The Pitts then landed on runway 25R, and the LC instructed the pilots to turn the airplane left onto taxiway G, hold short of 25L, and remain on the LC's frequency, which the pilots of the Pitts did. At that point, the two airplanes were facing in the same direction, separated by runway 25L and at least 300 feet.

About 50 seconds after the Cessna made its taxi request to the GC, the LC cleared the Pitts to cross 25L, and although required to do so, she did not advise the Pitts of the Cessna in its path. The pilots of the Pitts were unaware of the Cessna's presence until the propeller of the Pitts struck the empennage of the Cessna.

The pilots of the Pitts did not see the Cessna due to the limited forward visibility of tailwheel-equipped Pitts, their failure to S-turn while taxiing, and the limited tail-on visibility of the Cessna. Had the pilots of the Pitts performed S-turns while crossing runway 25L, the collision likely would not have occurred. In addition, the pilots of the Pitts had no expectation that the Cessna was in their path because they were

operating in the movement area of a controlled airport and had not been warned of the Cessna by the LC.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

Failure of the pilots of the Pitts airplane to maneuver the airplane as necessary to observe the taxi route and avoid the Cessna airplane ahead. Contributing to the accident was the local controller's failure to provide the required warning of traffic ahead to the pilots of the Pitts airplane when clearing the Pitts to taxi.

Findings

Personnel issues	Lack of action - Pilot
Environmental issues	ATC clearance procedure - Effect on operation

Factual Information

History of Flight

Taxi-from runway	Ground collision (Defining event)

On October 20, 2013, about 1359 Pacific daylight time, a Pitts/Aviat S2C, N15TA, substantially damaged a Cessna 172S, N698SP, when it taxied into the Cessna at Livermore Municipal airport (LVK), Livermore, California, after receiving taxi clearance from the air traffic control tower. The Pitts was owned and operated by Attitude Aviation of LVK, while the Cessna was operated by West Valley Flying Club (WVFC) of Palo Alto, California. None of the two persons on board either airplane was injured. Both flights were conducted under the provisions of Title 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed.

According to the certificated flight instructor (CFI) in the right front seat of the Cessna, he was providing a flight checkout for the private pilot in the left seat. Their flight originated from Palo Alto Airport of Santa Clara County (PAO), and they had landed uneventfully on LVK runway 25L. They exited 25L to the south at taxiway G, and then radioed LVK ground control (GC) for taxi clearance. Although GC was contacted by and responded to other aircraft subsequent to that request, GC did not respond to the Cessna crew. About 1 minute and 15 seconds later, having not received a response from GC, the Cessna crew initiated another radio call. During that transmission they heard "a lot of noise" coming from the rear of their airplane, and realized that their airplane had been struck in the empennage by the propeller of another airplane.

According to the CFI in the front seat of the Pitts, he was providing aerobatic instruction to the pilot in the rear seat. They landed uneventfully on 25R, and exited 25R to the south at taxiway G. In accordance with the local controller's (LC) instruction, the Pitts crew stopped between runways 25R and 25L, and radioed LVK GC for clearance to cross 25L. The two pilots in the Pitts watched an unspecified experimental airplane land on 25L, and saw that airplane stop and exit 25L to the south at a taxiway east of their position. LVK GC then cleared the Pitts across 25L, but the controller did not advise them of the Cessna that was holding just south of 25L on taxiway G. The Pitts taxied across 25L. Due to the tailwheel configuration and limited forward visibility of the Pitts, neither pilot in the Pitts was aware of the presence of the Cessna until their propeller struck the empennage of the Cessna.

After their airplane was struck by the Pitts, the Cessna pilots requested and received GC clearance to taxi to the ramp, which they did. The Pitts shut down in place, and the pilots exited the airplane. After some preliminary scene documentation, the Pitts was relocated clear of the traffic movement area.

Pilot Information

Certificate:	Private	**Age:**	62
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	February 4, 2013
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	March 3, 2013
Flight Time:	701 hours (Total, all aircraft), 63 hours (Total, this make and model), 553 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Flight instructor Information

Certificate:	Airline transport; Flight instructor	**Age:**	
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	**Seat Occupied:**	Front
Other Aircraft Rating(s):		**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:		**Last FAA Medical Exam:**	September 15, 2013
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 25, 2013
Flight Time:	10500 hours (Total, all aircraft), 700 hours (Total, this make and model)		

Cessna Crew

The instructor held commercial and CFI certificates, including an airplane single engine instructor rating. He had approximately 965 total hours of flight experience, including about 50 hours in the accident airplane make and model. His most recent flight review was completed in June 2013, and his most recent FAA third-class medical certificate was issued in July 2011.

The pilot under instruction held a private pilot certificate, with an airplane single-engine land rating. He had approximately 141 total hours of flight experience, including about 2 hours in the accident airplane make and model. His most recent flight review was completed in August 2013, and his most recent FAA third-class medical certificate was issued in May 2012.

Pitts Crew

The instructor held multiple certificates and ratings, including flight instructor. He had approximately 10,500 total hours of flight experience, including about 700 hours in the accident airplane make and

model. His most recent flight review was completed in September 2013, and his most recent FAA medical certificate was also issued in September 2013.

The pilot under instruction held a private pilot certificate, with an airplane single-engine land rating. He had approximately 701 total hours of flight experience, including about 63 hours in the accident airplane make and model. His most recent flight review was completed in March 2013, and his most recent FAA third-class medical certificate was issued in February 2013.

Pitts Crew Statements

The pilot receiving instruction taxied the Pitts across 25L. In his written statement regarding the accident, he reported that he looked both east and west for landing or departing traffic, and "looked in front but wasn't looking for an airplane." He reported that he angled slightly to his right, and that his attention was primarily focused on navigating the airplane into the limited confines of its cleared location.

The instructor also reported that the pilot angled the airplane to the right near the end of its crossing of 25L, and at first believed that the pilot was executing a clearing S-turn. The instructor believed that there was insufficient lateral pavement clearance for that maneuver, and advised the pilot to "move left," which the pilot did. The instructor then focused his attention to his right side, to monitor the pavement edge.

Aircraft and Owner/Operator Information

Aircraft Make:	Aviat	**Registration:**	N15TA
Model/Series:	S2 C	**Aircraft Category:**	Airplane
Year of Manufacture:	2001	**Amateur Built:**	
Airworthiness Certificate:	Aerobatic	**Serial Number:**	6045
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	May 2, 2013 Annual	**Certified Max Gross Wt.:**	1700 lbs
Time Since Last Inspection:	85 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2153 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	AEIO-540
Registered Owner:	Attitude Aviation	**Rated Power:**	260 Horsepower
Operator:	Attitude Aviation	**Operating Certificate(s) Held:**	None

Cessna (N698SP)

The Cessna was manufactured in 2000, and was equipped with a Lycoming IO-360 series engine. The airplane was a four-place high wing configuration, with tricycle-style landing gear.

Pitts (N15TA)

The Pitts was manufactured in 2001, and was equipped with a Lycoming AEIO-540 series engine. The airplane was a two-place, tandem cockpit, biplane configuration, with conventional-style landing gear. The configuration of this airplane limited the forward visibility of the flight crew when the airplane was in the taxi attitude.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LVK,400 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	13:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	29.93 inches Hg	**Temperature/Dew Point:**	29°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Livermore, CA (LVK)	**Type of Flight Plan Filed:**	None
Destination:	Livermore, CA (LVK)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class D

The LVK 1353 automated weather observation included wind from 240 degrees at 4 knots, visibility 10 miles, clear skies, temperature 29 degrees C, dew point 1 degree C, and an altimeter setting of 29.93 inches of mercury.

At the time of the accident, the sun was at an azimuth of 201.76 degrees True, and an elevation of 39.13 degrees. Both the sun and the accident location were generally south of the ATCT, separated by about 35 degrees of azimuth; the accident site was to the controllers' right of the sun.

Airport Information

Airport:	Livermore Municipal LVK	**Runway Surface Type:**	Asphalt
Airport Elevation:	400 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	25L	**IFR Approach:**	None
Runway Length/Width:	2699 ft / 75 ft	**VFR Approach/Landing:**	

LVK was equipped with two parallel runways, designated 7/25 R and L. Runway 7L/25R measured about 5,300 by 100 feet, and runway 7R/25L measured about 2,600 by 75 feet. The two runway centerlines were separated by about 500 feet, and the threshold of runway 25L was staggered about 1,300 feet west of the 25R threshold. Taxiway G ("golf") was situated at the end of 25L, oriented perpendicular to the runways, and extended both north of 25R and south of 25L. The south end of

taxiway G terminated at taxiway L, which paralleled the runway.

Taxiway G narrowed to about 40 feet on the south side of 25L. The distance from the Taxiway G holding position marking south of 25L to the north edge of the perpendicular taxiway which defined the end of taxiway G was about 80 feet. The distance between the holding position marking north of 25R (the approximate location of the Pitts) and the holding position marking south of 25R (just beyond which the Cessna was stopped, and where the collision occurred), was about 280 feet.

The ATCT was located about 1,240 feet north of 25L, and about 2,150 feet east of taxiway G. The collision location was situated about 2,500 feet from the ATCT, in a direction of about 236 degrees true.

The FAA had designated six "hot spots" at LVK. According to the FAA Airport/Facility Directory, a hot spot "is a location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary. ... The area of increased risk has either a history of or potential for runway incursions or surface incidents, due to a variety of causes, such as but not limited to: airport layout, traffic flow, airport marking, signage and lighting, situational awareness, and training. Hot spots are depicted on airport diagrams as open circles designated as "HS 1", "HS 2", etc." The collision occurred at LVK HS 4.

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	37.692222,-121.824996(est)

The collision occurred immediately south of the holding position marking on taxiway G, south of runway 25L. Both airplanes were on the taxiway centerline, facing south, and the Pitts taxied directly into the empennage of the Cessna. The propeller of the Pitts made multiple contacts and cuts in the Cessna's rudder, fin, elevator, and horizontal stabilizer, which resulted in substantial damage to the Cessna.

Communications

ATCT Staffing and Positions

LVK was equipped with an air traffic control tower that was operated and staffed by FAA personnel. At

the time of the accident, the ATCT was operating, and both airplanes were communicating with and being controlled by LVK ATCT controllers.

At the time of the accident, the ATCT cab was staffed by four persons serving three positions, including two positions of operation. They included a controller in charge (CIC), and the two positions of operation of local control (LC), and combined ground control/clearance delivery (GC/CD). One person each served the CIC and LC positions, and the GC position was staffed by two persons; a full performance level (FPL) controller designated as the "OJTI" (on the job training instructor) and a controller in training (designated CPC-IT). The CPC-IT was actively performing the GC duties and communications, and was being overseen by the GC OJTI. Unless otherwise noted, all references to "GC" communications are from or to the CPC-IT.

Review of the LVK ATCT facility operation logs revealed the following duty and position time-related information for the controllers. At the time of the accident:

The GC OJTI came on duty at least 03:12 (hours:minutes) prior, and most recently resumed that position 00:15 prior. The minimum duration between the GC OJTI's earliest position sign-on and latest sign-off on that day was 10:09.

The LC came on duty at least 06:00 prior, and most recently resumed that position 00:19 prior. The minimum duration between the LC's earliest position sign-on and latest sign-off on that day was 09:53.

The CIC came on duty at least 07:10 prior, and most recently resumed that position 00:41 prior. The minimum duration between the CIC's earliest position sign-on and latest sign-off on that day was 11:57.

The duty times for the CPC-IT were not provided for the investigation.

ATCT Equipment and Orientation

The ATCT cab was equipped with four controller stations, designated positions 1 through 4. Position 1 did not have the ability to transmit, and the Position 4 training jack was out of service. The equipment outages were repaired subsequent to the accident.

The CIC was plugged into Position 1 wearing a headset. The LC1 and LC 2 duties were combined at Position 2. The GC and FD duties were combined at Position 3 due to the training jack at Position 4 being out of service. Position 4 is the normal GC/FD location. The CIC was monitoring the LC, who was at Position 2. The CIC cannot monitor more than one position at the same time.

The ATCT cab was hexagonal, with the four positions situated along three of the sides. Position 3, which was manned by the GC OJTI and CPC-IT, was located on the hex side that faced directly towards the runways (south). The hex side to the right (southeast) contained Positions 1 and 2, staffed respectively by the CIC and the LC. Those positions faced away from the accident location. Unoccupied Position 4 was on the hex side to the left (southwest) of Position 3, and was the ATCT position that most directly faced the accident location.

ATCT Positional Responsibilities and Actions

FAA Order LVK TWR 7210.9G, issued July 2013 designated the "standard operating responsibilities to specific positions of operation," as well as the sequence for combining those positions as a function of the number of available controllers. The Order stated that the "front line manager/controller-in-charge" had the authority to combine the positions.

The Order provided specific information for staffing levels of from one to three controllers. The Order specified that when two controllers were available, the positions of LC1 and GC would be opened, and those positions would assume the duties of LC2 and FD, respectively. At the time of the accident, the ATCT operation was using two controllers, and was in compliance with that portion of the Order.

Paragraph 5 b (2) stated that one GC responsibility was to maintain "a close observation of all airport traffic and remains alert to circumstances affecting the movement area."

The portion of taxiway G south of runway 7R/25L was the responsibility of the GC.

Paragraph 5 c (1) of the Order stated that the LC was "on a permanent basis, delegated control of the portions of taxiway C and G between" the two parallel runways.

FAA Order 7110.65, "Air Traffic Control," paragraph 2−1−1 (ATC Service) stated that the "primary purpose of the ATC system is to prevent a collision between aircraft operating in the system and to organize and expedite the flow of traffic."

Paragraph 2−1−2 (Duty Priority) stated that controllers were to "Give first priority to separating aircraft and issuing safety alerts." That guidance also contained an explanatory "NOTE" that stated that "controllers must exercise their best judgment based on the facts and circumstances known to them" when prioritizing their actions.

Paragraph 2−10−3c (Tower Team Position Responsibilities) delineated the primary responsibilities of the tower team positions. That paragraph stated that GC and LC were to "ensure separation, initiate control instructions, scan tower cab environment, and perform any functions of the tower team, which will assist in meeting situation objectives."

Paragraph 3−1−4 (Coordination between Local and Ground Controllers) stated that "Local and ground controllers must exchange information as necessary for the safe and efficient use of airport runways and movement areas." The investigation did not obtain any evidence that the LC or the GC either initiated or coordinated information about the positions or movements of the Pitts and the Cessna with each other.

Paragraph 3−1−6 (Traffic Information) required controllers to. "Describe vehicles, equipment, or personnel on or near the movement area in a manner which will
assist pilots in recognizing them," and to "Describe the relative position of traffic in an easy to understand manner." When the LC instructed the Pitts to cross runway 25L on taxiway G, he did not provide a traffic advisory regarding the Cessna that was stopped on taxiway G just south of 25L. The Cessna was directly in the path of the Pitts, and was stopped in the location that the Pitts was cleared to.

FAA Order 7210.3Y, "Facility Operation and Administration", paragraph 2−2−3, (Position

Responsibility) stated that "When a developmental and an instructor are both signed on at a position, the instructor is responsible for all activity at that position." Review of the communications recordings did not reveal any indications that the GC instructional controller attempted to override the GC trainee before, during or subsequent to the accident.

Order 7110.65, paragraph 10−1−2, (Obtaining Information) required controllers to "Obtain enough information to handle the emergency intelligently. Base your decision as to what type of assistance is needed on information and requests received from the pilot because he/she is authorized by 14 CFR Part 91 to determine a course of action." Review of the communications recordings revealed that neither of the involved flight crews declared an emergency, and that GC did not query the pilots in an effort to ascertain if an emergency existed. An NTSB query to LVK ATCT that asked whether an emergency had been declared, or whether the ATCT had dispatched emergency vehicles in response to the accident, garnered the LVK ATCT response that an "emergency was not declared, as the Controller in Charge (CIC) received no information from the pilots indicating the situation was an emergency."

Controller Statements

Each of the four controllers who was on duty in the ATCT at the time of the accident provided a written statement regarding the event. In three of those statements, the controllers explicitly stated that they did not observe the collision. The fourth statement, that of the LC, did not explicitly state whether the LC did or did not observe the collision, and did contain any explicit references to the collision. The LC's account of the events in his statement differed from the events evidenced by the recorded communications. The controller reported that he instructed the Pitts to turn right and exit runway 25L, whereas he actually instructed the Pitts (correctly) to turn left. In addition, the landing sequence reported by the controller in his statement was the reverse of that indicated by the communications.

ATC Communications Details

The ATCT radio communications were recorded and provided for the investigation, which enabled a development of the sequence of events, as summarized below.

At 1353:48, the LC cleared the Cessna for "the option" (pilots' choice to conduct either a full stop or touch-and-go landing) on runway 25L. At 1354:10, the Pitts made its initial communication to the LC, and announced that it was inbound for landing. The LC instructed the Pitts to make a straight in approach to runway 25R, and to report when it was on a "4 mile final," which the Pitts acknowledged. About 50 seconds later, the LC informed the Pitts that it was "number two" for the approach behind a Cirrus on a 1-mile final for runway 25R, and then cleared the Pitts to land. About 1 minute and 15 seconds after that, the LC informed the Pitts that it was "number one" for landing on 25R, which the Pitts acknowledged. About 40 seconds after that Pitts acknowledgement, the LC instructed the Cessna to "turn left at the end" of the runway and contact GC.

At 1357:37, in the first communication between the LC and the Pitts since the "number one" acknowledgement transmission from the Pitts about a minute earlier, the LC asked the Pitts if it was destined for the "south side" of the airport. The Pitts replied in the affirmative, and was then instructed by the LC "if able turn left at taxiway golf hold short of runway 25L remain this frequency," which the Pitts acknowledged.

At 1358:01 the Cessna first transmitted on the GC frequency, reported its position on taxiway golf, and requested taxi clearance. GC did not respond to that request, although the GC controller did communicate with other aircraft that contacted the GC subsequent to the Cessna request.

At 1358:50, the LC instructed the Pitts to cross runway 25L, and contact GC, which the Pitts acknowledged.

At 1359:17, the Cessna transmitted "Livermore ground eh." That transmission terminated, and was not overridden by any other transmissions.

At 1400:12, the Cessna advised that it had been struck, and requested parking instructions. GC did not respond. Twelve seconds later, the Pitts informed GC that it was on GC frequency, and that it just collided with the Cessna. GC did not respond.

Another airplane then contacted GC with a taxi request, to which the GC responded by providing taxi instructions. At 1401:03, the Pitts radioed GC that it needed "priority on the radio please." The GC responded, and asked whether the Pitts was "still on the runway."

Subsequent to that, the Cessna, the Pitts, and GC communicated to clarify the situation, and to coordinate taxi, parking, and other activities. Refer to the public docket for additional details.

Additional Information

FAA Guidance to Pilots re Taxiing at Tower-Controlled Airports

Relevant FAA guidance regarding the responsibility of the Pitts crew to avoid the collision was contained in the Aeronautical Information Manual (AIM). Section 4-3-18 ("Taxiing"), paragraph b, stated that "clearances or instructions pertaining to taxiing are predicated on known traffic and known physical airport conditions. .... Although an ATC clearance is issued for taxiing purposes, when operating in accordance with the CFRs, it is the responsibility of the pilot to avoid collision with other aircraft."

FAA System Service Review (SSR)

On November 12, 2013, the FAA conducted a formal System Service Review (SSR) of the ATCT, and identified "many lapses in overall performance," including:

- While scanning was conducted by Local Control, discussion with Ground Control did not occur to determine the intentions of the Cessna on taxiway Golf prior to issuing instructions for the Pitts to cross

runway 25L on taxiway Golf.
- The CPC-IT did not scan the entire movement area and did not observe N698SP on taxiway Golf or Pitts N15TA holding between the runways on taxiway Golf.
- Crew Resource Management [between local control and ground control] was not employed properly. .
- Traffic was not issued in accordance with JO 7110.65, paragraph 3-1-6.
- Ground control traffic volume was greater than the CPC-IT's ability
- Use of tower team resources: assistance was not requested from the CIC to record and broadcast the ATIS. In addition, actions should have been taken to assist Ground Control.
- The OJTI or CIC did not take proactive steps when the CPC-IT fell behind.
- The Accident Checklist was not followed nor were required accident forms completed.
- During a brief period leading up to the accident, the tower team situational awareness was not maintained.

The SSR concluded that "In summary, team breakdowns in communication and coordination were identified as primary reasons for the accident" but "determined that this was an isolated event. There were no other known situations or records where a tail-dragger and another fixed-wing aircraft collided with one another on the movement area."

The FAA citation of "an isolated event" refers specifically to the collision, and not the conditions and circumstances that led to the collision. The Pitts instructor reported that nine days after that accident, while instructing in another taildragger at LVK, the accident circumstances were essentially duplicated; his airplane was cleared to cross a runway when there was another airplane in their path on the opposite side of the runway. Although the instructor's pilot accepted the clearance, the instructor over-rode him, and likely prevented a collision.

Administrative Information

Investigator In Charge (IIC):	Huhn, Michael
Additional Participating Persons:	David Jensen; FAA FSDO; Oakland, CA
Original Publish Date:	February 17, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=88254

Aviation Investigation Final Report

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Date & Time:	October 20, 2013, 13:59 Local	**Registration:**	N698SP
Aircraft:	Cessna 172 - S	**Aircraft Damage:**	Substantial
Defining Event:	Ground collision	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

While taxiing after landing at a controlled airport, a Pitts tailwheel-equipped airplane collided with a Cessna that was standing with its engine operating. Both airplanes were on instructional flights with a flight instructor and a rated pilot who was receiving instruction aboard.

The airport was equipped with two parallel runways, designated as 25L and 25R. Taxiway G was situated at the end of 25L, was oriented perpendicular to the runways, and extended slightly south of 25L where it terminated at a parallel taxiway. The air traffic control tower (ATCT) was staffed by four persons serving three positions. One person was serving as controller in charge (CIC), one person was serving as local controller (LC), and two people were assigned to the ground controller (GC) position. A controller-in-training (CIT) was actively performing the GC duties, and he was being trained by a full performance level controller.

The Cessna landed on 25L and, as instructed by the LC, exited south onto taxiway G, stopped, and called the GC to obtain clearance to taxi; however, the GC did not respond to the taxi request. The Pitts then landed on runway 25R, and the LC instructed the pilots to turn the airplane left onto taxiway G, hold short of 25L, and remain on the LC's frequency, which the pilots of the Pitts did. At that point, the two airplanes were facing in the same direction, separated by runway 25L and at least 300 feet.

About 50 seconds after the Cessna made its taxi request to the GC, the LC cleared the Pitts to cross 25L, and although required to do so, she did not advise the Pitts of the Cessna in its path. The pilots of the Pitts were unaware of the Cessna's presence until the propeller of the Pitts struck the empennage of the Cessna.

The pilots of the Pitts did not see the Cessna due to the limited forward visibility of tailwheel-equipped Pitts, their failure to S-turn while taxiing, and the limited tail-on visibility of the Cessna. Had the pilots of the Pitts performed S-turns while crossing runway 25L, the collision likely would not have occurred. In addition, the pilots of the Pitts had no expectation that the Cessna was in their path because they were

operating in the movement area of a controlled airport and had not been warned of the Cessna by the LC.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

Failure of the pilots of the Pitts airplane to maneuver the airplane as necessary to observe the taxi route and avoid the Cessna airplane ahead. Contributing to the accident was the local controller's failure to provide the required warning of traffic ahead to the pilots of the Pitts airplane when clearing the Pitts to taxi.

Findings

Personnel issues	Lack of action - Pilot of other aircraft
Environmental issues	ATC clearance procedure - Effect on operation

Factual Information

History of Flight

Standing-engine(s) operating Ground collision

On October 20, 2013, about 1359 Pacific daylight time, a Pitts/Aviat S2C, N15TA, substantially damaged a Cessna 172S, N698SP, when it taxied into the Cessna at Livermore Municipal airport (LVK), Livermore, California, after receiving taxi clearance from the air traffic control tower. The Pitts was owned and operated by Attitude Aviation of LVK, while the Cessna was operated by West Valley Flying Club (WVFC) of Palo Alto, California. None of the two persons on board either airplane was injured. Both flights were conducted under the provisions of Title 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed.

According to the certificated flight instructor (CFI) in the right front seat of the Cessna, he was providing a flight checkout for the private pilot in the left seat. Their flight originated from Palo Alto Airport of Santa Clara County (PAO), and they had landed uneventfully on LVK runway 25L. They exited 25L to the south at taxiway G, and then radioed LVK ground control (GC) for taxi clearance. Although GC was contacted by and responded to other aircraft subsequent to that request, GC did not respond to the Cessna crew. About 1 minute and 15 seconds later, having not received a response from GC, the Cessna crew initiated another radio call. During that transmission they heard "a lot of noise" coming from the rear of their airplane, and realized that their airplane had been struck in the empennage by the propeller of another airplane.

According to the CFI in the front seat of the Pitts, he was providing aerobatic instruction to the pilot in the rear seat. They landed uneventfully on 25R, and exited 25R to the south at taxiway G. In accordance with the local controller's (LC) instruction, the Pitts crew stopped between runways 25R and 25L, and radioed LVK GC for clearance to cross 25L. The two pilots in the Pitts watched an unspecified experimental airplane land on 25L, and saw that airplane stop and exit 25L to the south at a taxiway east of their position. LVK GC then cleared the Pitts across 25L, but the controller did not advise them of the Cessna that was holding just south of 25L on taxiway G. The Pitts taxied across 25L. Due to the tailwheel configuration and limited forward visibility of the Pitts, neither pilot in the Pitts was aware of the presence of the Cessna until their propeller struck the empennage of the Cessna.

After their airplane was struck by the Pitts, the Cessna pilots requested and received GC clearance to taxi to the ramp, which they did. The Pitts shut down in place, and the pilots exited the airplane. After some preliminary scene documentation, the Pitts was relocated clear of the traffic movement area.

Flight instructor Information

Certificate:	Commercial; Flight instructor	**Age:**	36
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	July 12, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	June 8, 2013
Flight Time:	965 hours (Total, all aircraft), 50 hours (Total, this make and model), 894 hours (Pilot In Command, all aircraft), 39 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Private	**Age:**	44
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	May 11, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 9, 2013
Flight Time:	141 hours (Total, all aircraft), 2 hours (Total, this make and model), 38 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Cessna Crew

The instructor held commercial and CFI certificates, including an airplane single engine instructor rating. He had approximately 965 total hours of flight experience, including about 50 hours in the accident airplane make and model. His most recent flight review was completed in June 2013, and his most recent FAA third-class medical certificate was issued in July 2011.

The pilot under instruction held a private pilot certificate, with an airplane single-engine land rating. He had approximately 141 total hours of flight experience, including about 2 hours in the accident airplane make and model. His most recent flight review was completed in August 2013, and his most recent FAA third-class medical certificate was issued in May 2012.

Pitts Crew

The instructor held multiple certificates and ratings, including flight instructor. He had approximately 10,500 total hours of flight experience, including about 700 hours in the accident airplane make and

model. His most recent flight review was completed in September 2013, and his most recent FAA medical certificate was also issued in September 2013.

The pilot under instruction held a private pilot certificate, with an airplane single-engine land rating. He had approximately 701 total hours of flight experience, including about 63 hours in the accident airplane make and model. His most recent flight review was completed in March 2013, and his most recent FAA third-class medical certificate was issued in February 2013.

Pitts Crew Statements

The pilot receiving instruction taxied the Pitts across 25L. In his written statement regarding the accident, he reported that he looked both east and west for landing or departing traffic, and "looked in front but wasn't looking for an airplane." He reported that he angled slightly to his right, and that his attention was primarily focused on navigating the airplane into the limited confines of its cleared location.

The instructor also reported that the pilot angled the airplane to the right near the end of its crossing of 25L, and at first believed that the pilot was executing a clearing S-turn. The instructor believed that there was insufficient lateral pavement clearance for that maneuver, and advised the pilot to "move left," which the pilot did. The instructor then focused his attention to his right side, to monitor the pavement edge.

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N698SP
Model/Series:	172 - S	**Aircraft Category:**	Airplane
Year of Manufacture:	2000	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	172S8639
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	October 14, 2013 100 hour	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3781 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	IO-360
Registered Owner:	Blue Granite Consulting	**Rated Power:**	180 Horsepower
Operator:	West Valley Flying Club	**Operating Certificate(s) Held:**	None

Cessna (N698SP)

The Cessna was manufactured in 2000, and was equipped with a Lycoming IO-360 series engine. The airplane was a four-place high wing configuration, with tricycle-style landing gear.

Pitts (N15TA)

The Pitts was manufactured in 2001, and was equipped with a Lycoming AEIO-540 series engine. The airplane was a two-place, tandem cockpit, biplane configuration, with conventional-style landing gear. The configuration of this airplane limited the forward visibility of the flight crew when the airplane was in the taxi attitude.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LVK,400 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	13:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	29.93 inches Hg	**Temperature/Dew Point:**	29°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Palo Alto, CA (PAO)	**Type of Flight Plan Filed:**	
Destination:	Livermore, CA (LVK)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class D

The LVK 1353 automated weather observation included wind from 240 degrees at 4 knots, visibility 10 miles, clear skies, temperature 29 degrees C, dew point 1 degree C, and an altimeter setting of 29.93 inches of mercury.

At the time of the accident, the sun was at an azimuth of 201.76 degrees True, and an elevation of 39.13 degrees. Both the sun and the accident location were generally south of the ATCT, separated by about 35 degrees of azimuth; the accident site was to the controllers' right of the sun.

Airport Information

Airport:	Livermore Municipal LVK	**Runway Surface Type:**	Asphalt
Airport Elevation:	400 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	25L	**IFR Approach:**	None
Runway Length/Width:	2699 ft / 75 ft	**VFR Approach/Landing:**	

LVK was equipped with two parallel runways, designated 7/25 R and L. Runway 7L/25R measured about 5,300 by 100 feet, and runway 7R/25L measured about 2,600 by 75 feet. The two runway centerlines were separated by about 500 feet, and the threshold of runway 25L was staggered about 1,300 feet west of the 25R threshold. Taxiway G ("golf") was situated at the end of 25L, oriented perpendicular to the runways, and extended both north of 25R and south of 25L. The south end of

taxiway G terminated at taxiway L, which paralleled the runway.

Taxiway G narrowed to about 40 feet on the south side of 25L. The distance from the Taxiway G holding position marking south of 25L to the north edge of the perpendicular taxiway which defined the end of taxiway G was about 80 feet. The distance between the holding position marking north of 25R (the approximate location of the Pitts) and the holding position marking south of 25R (just beyond which the Cessna was stopped, and where the collision occurred), was about 280 feet.

The ATCT was located about 1,240 feet north of 25L, and about 2,150 feet east of taxiway G. The collision location was situated about 2,500 feet from the ATCT, in a direction of about 236 degrees true.

The FAA had designated six "hot spots" at LVK. According to the FAA Airport/Facility Directory, a hot spot "is a location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary. ... The area of increased risk has either a history of or potential for runway incursions or surface incidents, due to a variety of causes, such as but not limited to: airport layout, traffic flow, airport marking, signage and lighting, situational awareness, and training. Hot spots are depicted on airport diagrams as open circles designated as "HS 1", "HS 2", etc." The collision occurred at LVK HS 4.

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	37.692222,-121.824996(est)

The collision occurred immediately south of the holding position marking on taxiway G, south of runway 25L. Both airplanes were on the taxiway centerline, facing south, and the Pitts taxied directly into the empennage of the Cessna. The propeller of the Pitts made multiple contacts and cuts in the Cessna's rudder, fin, elevator, and horizontal stabilizer, which resulted in substantial damage to the Cessna.

Communications

ATCT Staffing and Positions

LVK was equipped with an air traffic control tower that was operated and staffed by FAA personnel. At

the time of the accident, the ATCT was operating, and both airplanes were communicating with and being controlled by LVK ATCT controllers.

At the time of the accident, the ATCT cab was staffed by four persons serving three positions, including two positions of operation. They included a controller in charge (CIC), and the two positions of operation of local control (LC), and combined ground control/clearance delivery (GC/CD). One person each served the CIC and LC positions, and the GC position was staffed by two persons; a full performance level (FPL) controller designated as the "OJTI" (on the job training instructor) and a controller in training (designated CPC-IT). The CPC-IT was actively performing the GC duties and communications, and was being overseen by the GC OJTI. Unless otherwise noted, all references to "GC" communications are from or to the CPC-IT.

Review of the LVK ATCT facility operation logs revealed the following duty and position time-related information for the controllers. At the time of the accident:

The GC OJTI came on duty at least 03:12 (hours:minutes) prior, and most recently resumed that position 00:15 prior. The minimum duration between the GC OJTI's earliest position sign-on and latest sign-off on that day was 10:09.

The LC came on duty at least 06:00 prior, and most recently resumed that position 00:19 prior. The minimum duration between the LC's earliest position sign-on and latest sign-off on that day was 09:53.

The CIC came on duty at least 07:10 prior, and most recently resumed that position 00:41 prior. The minimum duration between the CIC's earliest position sign-on and latest sign-off on that day was 11:57.

The duty times for the CPC-IT were not provided for the investigation.

ATCT Equipment and Orientation

The ATCT cab was equipped with four controller stations, designated positions 1 through 4. Position 1 did not have the ability to transmit, and the Position 4 training jack was out of service. The equipment outages were repaired subsequent to the accident.

The CIC was plugged into Position 1 wearing a headset. The LC1 and LC 2 duties were combined at Position 2. The GC and FD duties were combined at Position 3 due to the training jack at Position 4 being out of service. Position 4 is the normal GC/FD location. The CIC was monitoring the LC, who was at Position 2. The CIC cannot monitor more than one position at the same time.

The ATCT cab was hexagonal, with the four positions situated along three of the sides. Position 3, which was manned by the GC OJTI and CPC-IT, was located on the hex side that faced directly towards the runways (south). The hex side to the right (southeast) contained Positions 1 and 2, staffed respectively by the CIC and the LC. Those positions faced away from the accident location. Unoccupied Position 4 was on the hex side to the left (southwest) of Position 3, and was the ATCT position that most directly faced the accident location.

ATCT Positional Responsibilities and Actions

FAA Order LVK TWR 7210.9G, issued July 2013 designated the "standard operating responsibilities to specific positions of operation," as well as the sequence for combining those positions as a function of the number of available controllers. The Order stated that the "front line manager/controller-in-charge" had the authority to combine the positions.

The Order provided specific information for staffing levels of from one to three controllers. The Order specified that when two controllers were available, the positions of LC1 and GC would be opened, and those positions would assume the duties of LC2 and FD, respectively. At the time of the accident, the ATCT operation was using two controllers, and was in compliance with that portion of the Order.

Paragraph 5 b (2) stated that one GC responsibility was to maintain "a close observation of all airport traffic and remains alert to circumstances affecting the movement area."

The portion of taxiway G south of runway 7R/25L was the responsibility of the GC.

Paragraph 5 c (1) of the Order stated that the LC was "on a permanent basis, delegated control of the portions of taxiway C and G between" the two parallel runways.

FAA Order 7110.65, "Air Traffic Control," paragraph 2−1−1 (ATC Service) stated that the "primary purpose of the ATC system is to prevent a collision between aircraft operating in the system and to organize and expedite the flow of traffic."

Paragraph 2−1−2 (Duty Priority) stated that controllers were to "Give first priority to separating aircraft and issuing safety alerts." That guidance also contained an explanatory "NOTE" that stated that "controllers must exercise their best judgment based on the facts and circumstances known to them" when prioritizing their actions.

Paragraph 2−10−3c (Tower Team Position Responsibilities) delineated the primary responsibilities of the tower team positions. That paragraph stated that GC and LC were to "ensure separation, initiate control instructions, scan tower cab environment, and perform any functions of the tower team, which will assist in meeting situation objectives."

Paragraph 3−1−4 (Coordination between Local and Ground Controllers) stated that "Local and ground controllers must exchange information as necessary for the safe and efficient use of airport runways and movement areas." The investigation did not obtain any evidence that the LC or the GC either initiated or coordinated information about the positions or movements of the Pitts and the Cessna with each other.

Paragraph 3−1−6 (Traffic Information) required controllers to. "Describe vehicles, equipment, or personnel on or near the movement area in a manner which will
assist pilots in recognizing them," and to "Describe the relative position of traffic in an easy to understand manner." When the LC instructed the Pitts to cross runway 25L on taxiway G, he did not provide a traffic advisory regarding the Cessna that was stopped on taxiway G just south of 25L. The Cessna was directly in the path of the Pitts, and was stopped in the location that the Pitts was cleared to.

FAA Order 7210.3Y, "Facility Operation and Administration", paragraph 2−2−3, (Position

Responsibility) stated that "When a developmental and an instructor are both signed on at a position, the instructor is responsible for all activity at that position." Review of the communications recordings did not reveal any indications that the GC instructional controller attempted to override the GC trainee before, during or subsequent to the accident.

Order 7110.65, paragraph 10−1−2, (Obtaining Information) required controllers to "Obtain enough information to handle the emergency intelligently. Base your decision as to what type of assistance is needed on information and requests received from the pilot because he/she is authorized by 14 CFR Part 91 to determine a course of action." Review of the communications recordings revealed that neither of the involved flight crews declared an emergency, and that GC did not query the pilots in an effort to ascertain if an emergency existed. An NTSB query to LVK ATCT that asked whether an emergency had been declared, or whether the ATCT had dispatched emergency vehicles in response to the accident, garnered the LVK ATCT response that an "emergency was not declared, as the Controller in Charge (CIC) received no information from the pilots indicating the situation was an emergency."

Controller Statements

Each of the four controllers who was on duty in the ATCT at the time of the accident provided a written statement regarding the event. In three of those statements, the controllers explicitly stated that they did not observe the collision. The fourth statement, that of the LC, did not explicitly state whether the LC did or did not observe the collision, and did contain any explicit references to the collision. The LC's account of the events in his statement differed from the events evidenced by the recorded communications. The controller reported that he instructed the Pitts to turn right and exit runway 25L, whereas he actually instructed the Pitts (correctly) to turn left. In addition, the landing sequence reported by the controller in his statement was the reverse of that indicated by the communications.

ATC Communications Details

The ATCT radio communications were recorded and provided for the investigation, which enabled a development of the sequence of events, as summarized below.

At 1353:48, the LC cleared the Cessna for "the option" (pilots' choice to conduct either a full stop or touch-and-go landing) on runway 25L. At 1354:10, the Pitts made its initial communication to the LC, and announced that it was inbound for landing. The LC instructed the Pitts to make a straight in approach to runway 25R, and to report when it was on a "4 mile final," which the Pitts acknowledged. About 50 seconds later, the LC informed the Pitts that it was "number two" for the approach behind a Cirrus on a 1-mile final for runway 25R, and then cleared the Pitts to land. About 1 minute and 15 seconds after that, the LC informed the Pitts that it was "number one" for landing on 25R, which the Pitts acknowledged. About 40 seconds after that Pitts acknowledgement, the LC instructed the Cessna to "turn left at the end" of the runway and contact GC.

At 1357:37, in the first communication between the LC and the Pitts since the "number one" acknowledgement transmission from the Pitts about a minute earlier, the LC asked the Pitts if it was destined for the "south side" of the airport. The Pitts replied in the affirmative, and was then instructed by the LC "if able turn left at taxiway golf hold short of runway 25L remain this frequency," which the Pitts acknowledged.

At 1358:01 the Cessna first transmitted on the GC frequency, reported its position on taxiway golf, and requested taxi clearance. GC did not respond to that request, although the GC controller did communicate with other aircraft that contacted the GC subsequent to the Cessna request.

At 1358:50, the LC instructed the Pitts to cross runway 25L, and contact GC, which the Pitts acknowledged.

At 1359:17, the Cessna transmitted "Livermore ground eh." That transmission terminated, and was not overridden by any other transmissions.

At 1400:12, the Cessna advised that it had been struck, and requested parking instructions. GC did not respond. Twelve seconds later, the Pitts informed GC that it was on GC frequency, and that it just collided with the Cessna. GC did not respond.

Another airplane then contacted GC with a taxi request, to which the GC responded by providing taxi instructions. At 1401:03, the Pitts radioed GC that it needed "priority on the radio please." The GC responded, and asked whether the Pitts was "still on the runway."

Subsequent to that, the Cessna, the Pitts, and GC communicated to clarify the situation, and to coordinate taxi, parking, and other activities. Refer to the public docket for additional details.

Additional Information

FAA Guidance to Pilots re Taxiing at Tower-Controlled Airports

Relevant FAA guidance regarding the responsibility of the Pitts crew to avoid the collision was contained in the Aeronautical Information Manual (AIM). Section 4-3-18 ("Taxiing"), paragraph b, stated that "clearances or instructions pertaining to taxiing are predicated on known traffic and known physical airport conditions. .... Although an ATC clearance is issued for taxiing purposes, when operating in accordance with the CFRs, it is the responsibility of the pilot to avoid collision with other aircraft."

FAA System Service Review (SSR)

On November 12, 2013, the FAA conducted a formal System Service Review (SSR) of the ATCT, and identified "many lapses in overall performance," including:

- While scanning was conducted by Local Control, discussion with Ground Control did not occur to determine the intentions of the Cessna on taxiway Golf prior to issuing instructions for the Pitts to cross

runway 25L on taxiway Golf.
- The CPC-IT did not scan the entire movement area and did not observe N698SP on taxiway Golf or Pitts N15TA holding between the runways on taxiway Golf.
- Crew Resource Management [between local control and ground control] was not employed properly. .
- Traffic was not issued in accordance with JO 7110.65, paragraph 3-1-6.
- Ground control traffic volume was greater than the CPC-IT's ability
- Use of tower team resources: assistance was not requested from the CIC to record and broadcast the ATIS. In addition, actions should have been taken to assist Ground Control.
- The OJTI or CIC did not take proactive steps when the CPC-IT fell behind.
- The Accident Checklist was not followed nor were required accident forms completed.
- During a brief period leading up to the accident, the tower team situational awareness was not maintained.

The SSR concluded that "In summary, team breakdowns in communication and coordination were identified as primary reasons for the accident" but "determined that this was an isolated event. There were no other known situations or records where a tail-dragger and another fixed-wing aircraft collided with one another on the movement area."

The FAA citation of "an isolated event" refers specifically to the collision, and not the conditions and circumstances that led to the collision. The Pitts instructor reported that nine days after that accident, while instructing in another taildragger at LVK, the accident circumstances were essentially duplicated; his airplane was cleared to cross a runway when there was another airplane in their path on the opposite side of the runway. Although the instructor's pilot accepted the clearance, the instructor over-rode him, and likely prevented a collision.

Administrative Information

Investigator In Charge (IIC):	Huhn, Michael
Additional Participating Persons:	David Jensen; FAA FSDO; Oakland, CA
Original Publish Date:	February 17, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=88254