NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

August 30, 2016

Specialist's Factual Report

HUMAN PERFORMANCE

WPR15MA243AB

I. ACCIDENT

Location:	Brown Field Municipal Airport, San Diego, CA
Date:	August 16, 2015
Time:	1100 Pacific daylight time (pdt)[1]
Airplane A:	Sabreliner, NA256-60SC, N442RM
Airplane B:	Cessna 172M, N1285U

II. HUMAN PERFORMANCE SPECIALIST

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III. SUMMARY

On August 16, 2015, about 1103 Pacific daylight time, a Cessna 172M, N1285U, and an experimental North American Rockwell NA265-60SC Sabreliner, N442RM, collided in midair about 1 mile northeast of Brown Field Municipal Airport (SDM), San Diego, California. The pilot (and sole occupant) of N1285U and the two pilots and two mission specialists aboard the Sabreliner died; both airplanes were destroyed. N1285U was registered to a private individual and operated by Plus One Flyers under the provisions of 14 Code of Federal Regulations (CFR) Part 91 as a personal flight. The Sabreliner was registered to and operated by BAE Systems Technology Solutions & Services, Inc., for the US Department of Defense as a public use aircraft under the provisions of 14 CFR Part 91 as a US Navy sensor testing platform. No flight plan was filed for N1285U, which originated from Gillespie Field Airport, San Diego/El Cajon, California. A mission flight plan was filed for the Sabreliner, which originated from SDM about

[1] All times are based on a 24-hour clock. Time of the accident is approximate.

0830 and was returning to SDM. Visual meteorological conditions prevailed at the time of the accident.

IV. DETAILS OF THE INVESTIGATION

The human performance specialist joined the investigation on September 28, 2015, to support the ongoing investigation. The specialist worked with the accident's NTSB investigator-in-charge and the Air Traffic Control Group Chairman to gather factual data. The Human Performance Specialist's Factual Report contains documentation relevant to the air traffic controllers and pilots involved in the accident; their backgrounds and pre-accident activities; and company training, policies and guidance relevant to the accident.

V. FACTUAL INFORMATION

1.0. Controllers on Duty

The controllers' information was documented through interviews, company records, and cellular telephone records.

1.1. Local Controller/Ground Controller/Controller-in-Charge

The controller transmitting on the tower frequency at the time of the accident was assigned to the combined local controller/ground controller/controller-in-charge (LC/GC/CIC) position[2]. He was 59 years old. His entrance on duty (EOD) date with Serco Management Services was October 8, 2007. He obtained a weather observers certificate on October 12, 2007, and a control tower operator certificate on November 26, 2007. His first duty station was Bellingham International Airport (BLI), Bellingham, Washington, and he transferred to Brown Field Municipal Airport (SDM), San Diego, California, on August 4, 2014. He completed the radar qualification exam on August 4, 2014. Prior to Serco, the LC/GC/CIC worked as an FAA controller from 1982 until 2006. He also served as a United States Air Force air traffic controller from 1975 to 1980.

The controller had a 2nd class medical certificate, dated September 23, 2014, with the limitation "must wear corrective lenses." Medications listed were over-the-counter pain relievers taken on an as needed basis.

During his most recent performance and development review, dated February 10, 2015, the LC/GC/CIC received "exceeds expectations" and "exceptional" ratings. Development areas discussed were not related to the accident scenario. During his previous performance and development review, dated February 5, 2013, and conducted at BLI, he received "highly successful" and "exceptional" ratings for areas reviewed. In addition, the following comments were made:

> [He] has been highly successful all aspects of air traffic control. He has a sixth sense that allows him to expect the and take any actions necessary before a problem erupts. His control technique is beyond reproach and it all comes with an ease that instills confidence

[2] The LC/GC/CIC controller will be referred to as the LC.

in the flying public. [He] is witty and extremely knowledgeable in FAA rules and is especially well versed in Bellingham local procedures. This is quite evident in the way he makes on-the-spot corrections. He phrases the correction in a way that promotes learning and not animosity. [He] is always looking for any way that he may aid his peers and the facility as a whole. He also has taken on the additional responsibility of keeping the publications up-to-date. [He] is a definite asset to Serco and the Bellingham Tower.

1.1.1. The LC/GC/CIC's Pre-accident Activities

The LC/GC/CIC was off duty August 13-14, 2015. On Thursday, August 13, his activities were unknown and he had limited cellular telephone use from 0848 until 1026. On Friday, August 14, his activities were unknown and he had limited cellular telephone use between 0810 and 1959.

On Saturday, August 15, he was scheduled to work from 1215 until 2015. Cellular telephone records indicate a call was received at 0908 but went to voicemail, a text message was sent at 1421, and 3 minutes of activity from 2054 until 2057.

On Sunday, August 16, he was scheduled to work from 1000 until 1800. There was no cellular telephone use that day prior to the accident.

1.1.2. The LC/GC/CIC's Training

He began qualification training at BLI, which included classroom and OJT (on the job training), on October 8, 2007, and completed OJT and CIC (controller in charge) training on November 23, 2007. He received a BLI facility air traffic rating on November 26, 2007. He completed OJTI (on the job training-instructor) on April 17, 2009.

He began qualification training at SDM on August 4, 2014, which included classroom and OJT, and completed training on September 1, 2014. He received a SDM facility air traffic rating on September 18, 2014, and completed CIC training on September 19, 2014. He completed one day of OJTI (on the job training-instructor) on February 10, 2015.

His most recent proficiency training received prior to the accident was completed on July 31, 2015, and included runway separation, visual separation, LAWRS (limited aviation weather reporting station) refresher test, and opposite direction operations. He received computer-based instruction on safety alerts and traffic advisories in March 2015.

1.2. The Controller in Training

When the accident occurred, the controller in training was not assigned a position but was present in the tower. About 4 minutes before the accident, he had signed off the LC/GC position after performing under supervision for approximately 53 minutes.

He was 27 years old. His EOD date with Serco Management Services was June 1, 2015, and his duty station was SDM. He was qualified to work the ground control position. He had previously been an air traffic controller and security specialist in the United States Marine Corps.

He had a second class medical certificate dated April 28, 2015, with no limitations. No medications were listed.

1.2.1. The Controller in Training's Training

He began qualification training at SDM on June 1, 2015, which included classroom and OJT. He completed the ground controller portion of training on June 25, 2015. He completed local controller classroom training on June 22, 2015, and began local controller OJT on June 27, 2015. No completion date was reported. He completed STARS[3] training on June 29, 2015.

His most recent proficiency training received prior to the accident was completed on July 31, 2015, and included runway separation, visual separation, LAWRS (limited aviation weather reporting station) refresher test, and opposite direction operations.

1.3. The Controller in Training's Recent Activities

Limited information was available regarding the controller in training's recent activities.

On Thursday August 12 and Friday, August 13, 2015, he worked from 1000 until 1800. On Saturday, August 14, he worked from 0900 until 1700. On Sunday, August 16, 2015, he arrived at work about 0950 and worked his regularly scheduled shift from 1000 until 1800. The accident occurred about 1100, shortly after he was relieved of his position for a break.

2.0. Flight Crew Information

The flight crew information was documented through company communications, FAA records, company records, travel receipts, and cellular telephone records.

2.1. Sabreliner – Pilot Monitoring

The left seat pilot, age 41, who was performing the duties of the pilot monitoring (PM), held an airline transport pilot certificate. His date of hire at BAE Systems was April 5, 2010, and he held the position of chief pilot/head of flying for business units he worked in; specifically, he was designated head of flying for Aerospace Systems in April 2010, Support Solutions in March 2013, and Intelligence & Security in July 2014. His date of hire at BAE was April 5, 2010. Prior to employment with BAE, he was in the US Air Force and began Specialized Undergraduate Pilot Training in May 1997 and held various positions, including instructor pilot, within the F-15 program until December 2008. He then worked for Epic Aircraft as the chief of flight test and engineering until February 2010.

After being hired by BAE Systems, the PM received initial training on the Sabreliner.[4] The training was one-on-one ground school training with a BAE Systems pilot and included differences between the Sabre 60SC and other aircraft, a review of the pilot checklist, and review of Sabre 60SC performance charts. Following this training, the PM attended a certified flight training course for the Sabreliner Series (N-265) at FlightSafety International. He received

[3] Standard Terminal Automation Replacement System
[4] Training information was provided via an email from BAE Systems dated January 12, 2016.

ground training, flight training and qualification training and was type rated successfully on the aircraft.

The PM received a rating of "5-Exceptional Performance" for all objectives in his most recent performance evaluation, dated January 8, 2015. His most recent airman proficiency/qualification check in the Sabreliner 40 occurred on April 13, 2015, at Mojave Air and Space Port (MHV), Mojave, California. All maneuvers were marked satisfactory. In the year prior to the accident, the PM flew in to or out of SDM 16 times; he flew in to and out of SDM the day prior to the accident.

2.1.1. The Pilot Monitoring's Medical

The PM's most recent first class medical, issued by the FAA, was dated April 30, 2015, and had no limitations. No medications were listed in his FAA medical records. His total time was listed as 5000 hours with 300 hours flown in the previous 6 months.

2.1.2. The Pilot Monitoring's Recent Activities

The PM was working August 8-16, 2015. On August 8-11, he worked 6 hours, 6 hours, 10 hours and 10 hours, respectively. His known activities for the 72 hours preceding the accident are summarized below.

On Wednesday, August 12, 2015, cellular telephone records indicate activity[5] from 0651 until 2022. He logged in to the BAE Systems VPN about 0738 and 1234. He took a commercial flight from Los Angeles International Airport (LAX), Los Angeles, California, to Tucson International Airport (TUS), Tucson, Arizona, scheduled to depart at 1950 and arrive at 2123. He checked in to a hotel in Tucson at 2230. His employee timesheet indicated he worked 10 hours.

On Thursday, August 13, 2015, cellular telephone activity began at 0617 and continued until 0053 on August 14. He checked out of his hotel in Tucson at 0647 on August 13. According to company personnel, he arrived at a hanger at TUS at 0800 and ferried a flight from TUS to Naval Air Weapons Station-China Lake/Armitage Field (NID), China Lake, California, departing at 1000 and arriving at 1200. He then participated in two local flights from 1300 until 1500 and from 1530 until 1545, flying in a DC-9. He picked up a rental car in between the flights at 1506. He logged in to the BAE Systems VPN about 2127 and 2136. His employee timesheet indicated he worked 10 hours, which included 6 hours of overtime.

On Friday, August 14, 2015, cellular telephone records indicated phone calls placed at 0201, 0202, and 0332. There was a 2.5 hour break in activity from 0332 until 0608. Cellular telephone activity continued until about 2127, with two extended breaks in activity from 0821 until 1008 and from 1603 until 1904. He logged in to the BAE Systems VPN about 1149. It is unknown when he departed China Lake but receipts indicate he returned his rental car at 1455 in Valencia, California. Pickup Valencia is about 120 miles from NID. The PF had secured a rental car for the PM which he picked up from him at an unknown time and location. The PM checked in to a hotel in San Diego, California, at 2057. San Diego is about 160 miles from Valencia. His employee timesheet indicated he worked 10 hours, all of which was considered overtime.

[5] Cellular telephone activity refers to outbound calls or text messages made, or inbound calls answered.

On Saturday, August 15, 2015, cellular telephone activity began at 0915 and continued throughout the day until 1321; incoming messages were received between 1411 and 1443, and at 1938, but no return messages were sent. According to company records, he began his work day with a test operations coordination meeting at 0915 and had a flight in the Sabreliner 60 (accident airplane) from 1000 until 1230. His work day concluded following a flight test team debrief scheduled to begin at 1305. His timesheet indicated he worked 7 hours.

On Sunday, August 16, 2015, there was no cellular telephone activity. It is unknown when he awoke or departed the hotel located about 22 miles from SDM. According to company records, the PM's work day began with a test operations coordination meeting at 0745 and he was scheduled to depart SDM on the accident flight at 0800 with a scheduled landing at SDM at 1100.

2.2. Sabreliner –Pilot Flying

The right seat pilot, age 66, who was performing the duties of the pilot flying (PF), held an airline transport pilot certificate and was a contractor pilot hired by BAE Systems. At the time of his hiring, he held a type rating to fly the Sabreliner 60. His last proficiency check in the airplane was administered by the PM on June 16, 2014. He flew in to and out of SDM 9 times in the year prior to the accident, 3 times of which were in the previous 30 days.

2.2.1. The Pilot Flying's Medical

The PF's most recent first class medical, issued by the FAA, was dated January 12, 2015, and had the limitation "must wear corrective lenses". He reported taking the medication Terazosin daily for nocturia[6] with no reported side effects. His total time was listed as 7150 hours with 40 hours flown in the previous 6 months.

2.2.2. The Pilot Flying's Recent Activities

The PF was working for BAE Systems August 12-16, 2015. His known activities for the 72 hours preceding the accident are summarized below.

On Wednesday, August 12, 2015, cellular telephone records indicate activity from 0732 to 1942 , with two breaks in activity over an hour from 0915 until 1029 and 1417 until 1742. He took a commercial flight from Phoenix Sky Harbor International Airport (PHX), Phoenix, Arizona, to Burbank Bob Hope Airport (BUR), Burbank, California, scheduled to depart at 1430 and arrive 1551. He obtained a rental car in Burbank at 1641 and checked in to a hotel in Lancaster, California, at 1830.

On Thursday, August 13, 2015, cellular telephone activity began at 0759 and continued until 2102 with breaks in activity over an hour from 0958 until 1258, 1317 until 1635, 1734 until 1848, and 1947 until 2054. He purchased gas in Mojave at 0819 and returned his rental car at 0931 in Burbank. He then picked up a rental car for the PM in National City, California, at 1018. According to company records, he was scheduled to ferry a flight from MJV departing "1000ish"

[6] Nocturia is a condition of frequent urination at night.

and arriving at SDM "1100ish". He then participated in test/data collection system checks scheduled at 1200 and the detachment/BAE mass debrief at SDM scheduled at 1400. He checked in to a hotel in San Diego at 1440.

On Friday, August 14, 2015, cellular telephone records indicated a 2.5 hour break in activity from 0845 until 2122 with breaks in activity over an hour from 0848 until 1050, 1051 until 1245, 1249 until 1654, 1715 until 1927, and 1936 until 2111. According to company records, he participated in a test operations final coordination meeting at 1245, BAE aircrew step/walk at 1300, flew the Sabreliner 60 from 1330 until 1600, and the flight test team debrief at 1635.

On Saturday, August 15, 2015, cellular telephone activity began at 0742 and continued throughout the day until about 2025 with breaks in activity over an hour from 0853 until 1502, 1618 until 1725, and 1753 until 2022. According to company records, he began his work day with a test operations coordination meeting scheduled at 0915 and had a flight in the Sabreliner 60 (accident airplane) from 1000 until 1230. His work day concluded following a flight test team debrief scheduled to begin at 1305. He had dinner with colleagues from 1830 until 1945 and then returned to the hotel.

On Sunday, August 16, 2015, there was no cellular telephone activity prior to the accident. It is unknown when he awoke or departed the hotel located about 22 miles from SDM. According to company records, his work day began with a test operations coordination meeting at 0745 and he was scheduled to depart SDM on the accident flight at 0800 with a scheduled landing at SDM at 1100.

2.3. Cessna Pilot

Limited information was available regarding the Cessna pilot, his background, and recent activities.

The Cessna pilot, age 60, held a private pilot certificate with an airplane single engine land rating dated December 2, 1997. According to his logbook, he had 277.9 hours total flight time. In the 30 days prior to the accident, he flew 2.8 hours and made 13 landings. In the 6 months prior to the accident, he flew 11.6 hours and made 52 landings. He was most recently checked out to fly the C172 on August 9, 2015, by Plus One Flyers, Inc.

2.3.1. The Cessna Pilot's Medical

The Cessna pilot's most recent third class medical, issued by the FAA, was dated November 20, 2014, and had the limitation "must wear corrective lenses for near and distant vision". No medications were listed in his FAA medical records.

2.3.2. The Cessna Pilot's Recent Activities

Cellular telephone records were acquired for the Cessna pilot. On Wednesday, August 12, 2015, cellular telephone records indicated activity from 0928 until 0950 and from 1356 until 1611. On Thursday, August 13, records indicated activity from 0902 until 0919, at 1139, from 1526 until 1527, and 1750 until 1819. On Friday, August 14, records indicated activity at 0251,

0617, and 759, from 1005 until 1104, at 1305, 1320 and 1608, and from 1720 until 1829. On Saturday, August 15, records indicated activity from 1451 until 1458. On Sunday, August 16, records indicated activity from 0933 until 1010.

3.0. Medical and Pathological Information

The controllers on duty at the time of the accident tested negative for drugs and alcohol after the accident.

Toxicology tests were performed by the FAA's Civil Aerospace Medical Institute on specimens from the three pilots involved in the accident. The Sabreliner PF's specimens tested negative for ethanol and positive for the previously reported medication Terazosin. The Sabreliner PM's specimens tested negative for carbon monoxide, ethanol and a wide range of drugs, including major drugs of abuse. The Cessna pilot's specimens tested negative for ethanol and a wide range of drugs, including major drugs of abuse.

4.0. FAA Guidance/Manuals

The FAA Air Traffic Control Order JO 711065V, effective April 3, 2014, chapter 2 "General Control", section 1 "General", subsection 2-1-1 "ATC Service", stated in part:

> 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, and to provide support for National Security and Homeland Defense.

The FAA Air Traffic Control Order JO 711065V, effective April 3, 2014, chapter 2 "General Control", section 1 "General", subsection 2-1-23 "Transfer of Position Responsibility", stated:

> The transfer of position responsibility must be accomplished in accordance with the "Standard Operating Practice (SOP) for the Transfer of Position Responsibility," and appropriate facility directives each time operational responsibility for a position is transferred from one specialist to another.

The FAA Air Traffic Control Order JO 711065V, effective April 3, 2014, chapter 3 "Air Traffic Control – Terminal", Section 1 "General", subsection 3-1-1 "Provide Service", stated in part:

> Provide airport traffic control service based only upon observed or known traffic and airport conditions.
>
> ***NOTE−***
> *When operating in accordance with CFRs, it is the responsibility of the pilot to avoid collision with other aircraft. However, due to the limited space around terminal locations, traffic information can aid pilots in avoiding collision between aircraft operating within Class B, Class C, or Class D surface areas and the terminal radar service areas, and transiting aircraft operating in proximity to terminal locations.*

The FAA Air Traffic Control Order JO 711065V, effective April 3, 2014, chapter 3 "Airport Traffic Control− Terminal", section 1 "General", subsection 3-1-9 "Use of Tower Radar Displays", stated:

a. Uncertified tower display workstations must be used only as an aid to assist controllers in visually locating aircraft or in determining their spatial relationship to known geographical points. Radar services and traffic advisories are not to be provided using uncertified tower display workstations. General information may be given in an easy to understand manner, such as “to your right” or “ahead of you.”

EXAMPLE−
“Follow the aircraft ahead of you passing the river at the stacks.” “King Air passing left to right.”

REFERENCE−
FAAO JO 7210.3, Para 10−5−3, Functional Use of Certified Tower Radar Displays.

b. Local controllers may use certified tower radar displays for the following purposes:

1. To determine an aircraft’s identification, exact location, or spatial relationship to other aircraft.

NOTE−
This authorization does not alter visual separation procedures. When employing visual separation, the provisions of para 7−2−1, Visual Separation, apply unless otherwise authorized by the Vice President of Terminal Service.

REFERENCE−
FAAO JO 7110.65, Para 5−3−2, Primary Radar Identification Methods. FAAO JO 7110.65, Para 5−3−3, Beacon Identification Methods. FAAO JO 7110.65, Para 5−3−4, Terminal Automation Systems Identification Methods.

2. To provide aircraft with radar traffic advisories.

3. To provide a direction or suggested headings to VFR aircraft as a method for radar identification or as an advisory aid to navigation.

PHRASEOLOGY−
(Identification), PROCEED (direction)−BOUND, (other instructions or information as necessary),

or

(identification), SUGGESTED HEADING (degrees), (other instructions as necessary).

NOTE−
It is important that the pilot be aware of the fact that the directions or headings being provided are suggestions or are advisory in nature. This is to keep the pilot from being inadvertently misled into assuming that radar vectors (and other associated radar services) are being provided when, in fact, they are not.

4. To provide information and instructions to aircraft operating within the surface area for which the tower has responsibility.

EXAMPLE−

"TURN BASE LEG NOW."

NOTE−
Unless otherwise authorized, tower radar displays are intended to be an aid to local controllers in meeting their responsibilities to the aircraft operating on the runways or within the surface area. They are not intended to provide radar benefits to pilots except for those accrued through a more efficient and effective local control position. In addition, local controllers at nonapproach control towers must devote the majority of their time to visually scanning the runways and local area; an assurance of continued positive radar identification could place distracting and operationally inefficient requirements upon the local controller. Therefore, since the requirements of para 5−3−1, Application, cannot be assured, the radar functions prescribed above are not considered to be radar services and pilots should not be advised of being in "radar contact."

c. Additional functions may be performed provided the procedures have been reviewed and authorized by appropriate management levels.

REFERENCE−
FAAO JO 7110.65, Para 5−5−4, Minima.

For additional information on traffic advisories, safety alerts and visual separation, see the ATC group chairman's factual report.

5.0. Serco Guidance/Manuals

The Serco standard operating procedures, section 2-16 "Position Responsibilities," subsection 6 "Responsibilities" stated in part:

A. Facility Air Traffic Manager (ATM): The ATM is responsible for all procedural, operational and administrative matters for SDM FCT. The ATM will assume the duties of CIC, listed below, whenever signing on a position other than Local Position.
B. Controller-in-Charge (CIC): The CIC is responsible for the entire shift unless the ATM is signed on. The CIC must be designated as the ATCS with the opening shift until relieved by the ATCS with the closing shift. **In the absence of the ATM, the closing shift CIC is responsible for approving spot leave for that day's shift only.** To the extent possible and when staffing conditions permit, the Controller in Charge (CIC) responsibility must **not** be combined with Local Control Responsibilities include:
    1) The requirement to provide guidance and goals for the shift.
    2) Monitoring/managing traffic volume/flow.
    3) Position assignments.
    4) Position Relief.
    5) Training Assignments.
    6) Processing leave requests (e.g., leave approval with ATM coordination).
    7) Configuring/monitoring/reporting equipment status.
    8) Data collection and reporting.
    9) Monitoring presidential aircraft movement.
    10) Situational awareness is defined as a continuous extraction of environmental information, integration of this information with previous knowledge to form a

coherent mental picture, and the use of that picture in directing further perception and anticipating future events. Simply put, situational awareness means knowing what is going on around you.

11) Management of the operational environment with a goal toward eliminating distractions.
12) Other tasks must include, but are not limited to:
    a) Ensuring the Watch Checklist is completed.
    b) Maintaining the Report of Facility Operation, FAA Form 7230-4.
    c) Maintaining the Status Information Area (SIA).
    d) Making all notifications of incidents and accidents as required.
    e) Ensuring traffic data is properly recorded.

C. Local Control (LC): Must
1) Broadcast on all frequencies announcing the resumption or termination of ATC Services.
2) Responsible for issuing clearances, control instructions and traffic advisories to aircraft operating within the SDM Class D airspace.
3) Responsible for operations on the active runway(s) and taxiway(s) Bravo & Charlie between runway(s) 26R and 26L.
4) Ensure appropriate spacing.
5) Ensure integrity of runway(s) surfaces by scanning of unauthorized incursions of aircraft, vehicle, personnel or animals.
6) Verbally approve a GC request to cross an active runway with an aircraft or vehicle.
7) Notify GC of potential or actual emergency situations.
8) Solicit PIREPs in accordance with FAA Orders JO 7110.65 and JO 7210.3 and relay to GC.
9) Verbally coordinate with GC any Helicopter operations to/from the movement area other than the active runway(s) and the use of the Tri-pads.
10) Strip marking responsibilities.
    a) Enter departure time on IFR/SVFR aircraft.
    b) Enter contact/down times on IFR, SVFR and VFR aircraft making practice IFR approaches.

D. Ground Control (GC): Includes FD, must:
1) Control aircraft and vehicles on taxiway(s) Alpha; Alpha1; Bravo and Charlie as depicted, not to include taxiways Bravo and Charlie between runway(s) 26R and 26L.
2) Advise LC of: Aircraft ID; RWY/Intersection departing from, unless from primary RWY (26R/8L); direction of departure (NE/Pattern).
3) Obtain Verbal approval from LC prior to:
    a) Taxiing an aircraft to other than the active runway.
    b) Allowing vehicles or aircraft to cross the active runway
    c) Approving any operation which could affect the use of the active runway.
4) Issue IFR clearances to aircraft via FIDO generated clearances, (Ensure that the entire route between the plus-signs is issued to the aircraft) or in accordance with the SDM /SCT LOA.

5) Operate the Crash Phone as required.
6) Pass all SDM arrival strips to LC.
7) Coordinate SVFR departures with LC using flight progress strips.
8) Coordinate NOTAMs with PRC AFSS and SCT FD.
9) Receive post and disseminate PIREPS, SIGMETS, AIRMETs and CWAs to/from LC and SCT FD. Also pass significant PIREPs to PRC AFSS.
10) Take and record weather observations and record the ATIS. Pass the current weather, runway in use, and ATIS code to SCT, San Diego Area FD, via the FIDO.
11) Assist LC and CIC as needed.

The Serco "Training Program," Appendix 4, stated in part:

TRAINING ON CONSOLIDATED POSITIONS:

A. Ground Control and Flight Data positions are worked combined on a daily basis. Training may be conducted with the GC/FD positions combined.

B. Local Control, Ground Control, and Flight Data positions are combined during various situations. Training may be conducted on consolidated positions at Local Control, only during light traffic, at the discretion of the OJTI. The OJTI will take into consideration the developmental's progress in training prior to making this decision.

6.0. Controller Training

The SDM LC/GC/CIC and controller in training received training through Serco which included training that was developed by Serco as well as the FAA Training Academy. Recent training modules included, but were not limited to, initial separation of departures and arrivals (July 2014), situational awareness (October 2014), VFR conflicts (November 2014), parachute operations (November 2014), CIC (November 2014), unusual AT situations (January 2015), safety alerts and traffic advisories (March 2015), runway separation (July 2015), visual separation (July 2015) and arrival/departure briefing (August 2015). Excerpts from these training modules relevant to the accident scenario are included in attachment 1 to this report.