



**Aviation Safety Council**

**Taipei, Taiwan**

**GE235 Occurrence Investigation  
Factual Data Collection  
Group Report**

**ATC/Weather Group**

**July 2, 2015**

**ASC-FRP-15-07-004**

## **I. Team Organization**

Chairman:
Kuo-Chih Chang Aviation Safety Council
Members:
1 Chih-Ting Hsu Chief, Air Traffic Services Management Office, ANWS, CAA, MOTC
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(i) MOTC - Ministry of Transportation and Communication

(ii) CAA - Civil Aeronautics Administration

(iii) ANWS - Air Navigation and Weather Services

## **II. History of Activities**

<b>Date</b>	<b>Activities</b>
Feb. 4, 2015	<ol style="list-style-type: none"><li>1. Collected initial weather information.</li><li>2. Arranged Interviews of the airport tower.</li><li>3. Obtained ATC radio and hotline communication recordings and transcripts.</li><li>4. Obtained MSTTS track data, flight plan &amp; NOTAM</li></ol>
Feb. 5, 2015	<ol style="list-style-type: none"><li>1. Observed the recovery of wreckage at occurrence site.</li><li>2. On duty at air disaster central response center.</li><li>3. Interviewed the supervisor and local controller of Songshan Tower.</li></ol>
Feb. 6, 2015	<ol style="list-style-type: none"><li>1. Prepared request of documents/data list and sent to CAA.</li><li>2. Reviewed ATC recordings.</li></ol>
Feb. 7, 2015	<ol style="list-style-type: none"><li>1. Wrote interview notes.</li><li>2. Reviewed weather information.</li></ol>
Feb. 8, 2015	<ol style="list-style-type: none"><li>1. Finished interview notes.</li><li>2. Reviewed ATC communication transcripts.</li></ol>
Feb. 9, 2015	<ol style="list-style-type: none"><li>1. Interview notes translation.</li><li>2. Checked and synchronized the ATC radio &amp; hotline communication transcripts.</li></ol>
Feb. 10, 2015	<ol style="list-style-type: none"><li>1. Obtained and reviewed documents/data from CAA.</li></ol>
Feb. 11, 2015	<ol style="list-style-type: none"><li>1. Translation of the ATC hotline communication transcripts and interview notes.</li></ol>

### **III. Factual Description**

[Note: Paragraphs 1.1-1.6, 1.10-1.17 are covered in other Group Reports.]

#### **1.7 Weather Information**

Aerodrome routine meteorological report (METAR) of Songshan airport after the occurrence is as follows:

METAR at 1100 hours, wind from 100 degrees at 10 knots, visibility greater than 10 kilometers, few clouds at 1,500 feet, broken at 2,800 feet, broken at 4,000 feet, temperature 16°C; dew point temperature 13°C, altimeter setting 1024 hPa, trend forecast-no significant change, Remarks: altimeter setting 30.25 in-Hg

There was no low level wind shear detected around the time of the occurrence.

#### **1.8 Aids to Navigation**

There were no reported difficulties with navigational aids along the GE235 flight path.

#### **1.9 Communication**

The frequencies used by Songshan tower are 121.9 and 118.1 MHz. The ATC radio and hotline communication transcripts are shown in appendix 1.

#### **1.18 Additional Information**

##### **1.18.1 Interview Summaries**

###### **1.18.1.1 The Local Controller of Songshan Tower**

The interviewee was on the local controller shift from 1030 hours and the work load was moderate to light. Around the time of occurrence, visibility was greater than 10 km but there were some patches of low-level clouds to the east of the airport. Because of a landing aircraft approached to Runway 10, the GE235 was instructed to hold short of the runway initially. The process from entering runway to take-off was normal. The interviewee then instructed GE235 to change frequency to

Taipei Approach after it climbed through 1,000 feet right after passing the end of the runway. She directed her attention to the other aircraft and vehicles after the pilot read back and everything continued as normal. Afterwards, Taipei Approach called “tower transfer transasia two tree five again” via loud speaker and GE235 called her simultaneously. The sound from the loud speaker was louder so the interviewee didn’t hear what the pilot said through her headphone. The interviewee instructed GE235 to contact Taipei Approach again when she thought there was a communication problem, but no answer received. Taipei Approach asked her if she saw the aircraft, she then observed the departure route but found nothing. Afterwards she discovered that the tracking of the occurrence flight on the radar display did not coincide with the normal flight path of Mucha departure and there was no indication of its altitude, even Taipei Approach couldn’t contact GE235, so the interviewee began to call it several times but got no response. Because the situation of the occurrence flight was unknown, she informed Taipei Approach and the supervisor of the status quo, and then she was ordered to suspend take-off and landing operation, and proceeded with accident notification procedures by directives from her supervisor.

### **1.18.1.2 The Supervisor of Songshan Tower**

The interviewee was on duty from 0800 hours to 1800 hours. Before the occurrence, he was dealing with paper works and his work load was close to light, in the meantime his fellow colleagues were working normally. While the local controller performing the duty, he heard from loudspeaker (on the right of the local controller and front right side of him) that there was no contact from GE235 and Taipei Approach requested the local controller to transfer it again. He immediately got up to look for the traffic, and asked the take-off status of the occurrence aircraft. The local controller replied the aircraft had taken off. The interviewee roughly remembered that the position of occurrence flight appeared on the radar display for a while (but it was not stable), and he was not very sure about this. In addition to the runway extension lines, he also observed the whole area of the airport, he could not find the occurrence flight. According to the narrative of the local controller, in order to determine whether the aircraft was in the airport, he immediately requested the local controller to call the aircraft at channel 118.1 continuously, and he called by the emergency channel and observed the airport and its surroundings with a telescope. There was still no reply during the broadcast of the call, the interviewee considered this situation as an emergency and instructed the local controller to stop the next aircraft entering the runway from take-off, and carry on the observation

and broadcast. At that time, there was a controller under familiarization training beside him, so he asked that controller to inform the tower chief at the 4th Floor. Due to the departure route might overlap with the accident site and not knowing the exact location of GE235 (due to situation unknown), the interviewee asked his colleagues to suspend aircraft take-off and landing, and began to clear the airspace through notification. He then examined the airport and its surroundings again by telescope, and asked his colleague to notify Flight Operations Office to conduct a runway inspection to see if the runway could be operational.

The visibility was more than 10 kilometers as per the weather report at that time, but he observed the clouds were not very high. After the airport resumed normal operation for take-off and landing, the observation of departure aircraft was not in sight (in clouds) within one minute from take-off rolling.

## IV. Appendices

### Appendix 1: The ATC radio and hotline communication transcripts

GC: Ground Controller of Songshen Tower

LC: Local Controller of Songshen Tower

GE235: GE235 pilots

SP: Supervisor of Songshen Tower

WR: West Songshen Radar Position Controller of Taipei Approach

WM: Songshen Monitoring Position Controller of Taipei Approach

NM: North Taoyuan Monitoring Position Controller of Taipei Approach

Note: shaded columns indicate the hotline communications between Songshen Tower and Taipei Approach

TIME	COM.	CONTENTS
1034:28	GE235	songshan ground good morning transasia two tree...uh five at bay one two request start ... uh flight level one four zero to kinmen with sierra
1034:38	GC	transasia two tree five songshan ground copy clearance cleared to sandy d m e fix via mucha two quebec departure whiskey six maintain five thousand squawk four six zero two
1034:51	GE235	cleared to sandy via mucha two quebec departure ...uh join whiskey six maintain five thousand squawk four six zero two transasia two tree five
1034:59	GC	transasia two tree five clearance read back correct
1040:51	GE235	songshan ground transasia two tree five bay one two request start up and push back
1040:55	GC	transasia two tree five start up and push back approved runway one zero
1040:59	GE235	start up and push back approved runway one zero transasia two tree five
1044:59	GE235	songshan ground transasia two tree five request taxi
1045:01	GC	transasia two tree five runway one zero taxi via whiskey
1045:05	GE235	taxi via whiskey to runway one zero transasia two tree five
1045:52	GC	transasia two tree five contact tower one one eight decimal one good day
1045:55	GE235	contact tower one one eight one transasia two tree five good day

1046:06	GE235	songschan tower good morning transasia two tree five taxi with you
1046:10	LC	transasia two tree five songschan tower due to initial separation hold short runway one zero for landing traffic
1046:16	GE235	hold short runway one zero transasia two tree five
1050:09	LC	transasia two tree five line up and wait runway one zero
1050:12	GE235	line up and wait runway one zero transasia two tree five
1050:14	LC	復興兩三五 起飛五兩 [transasia two tree five take off at five two]
1050:17	WR	好 [okay]
1051:13	LC	transasia two tree five runway one zero wind one zero zero degrees niner knots cleared for takeoff
1051:19	GE235	cleared for takeoff runway one zero transasia two tree five
1052:34	LC	transasia two tree five contact taipei approach one one niner decimal seven good day
1052:38	GE235	one one niner seven transasia two tree five good day
1053:35	GE235	tower transasia two tree five mayday mayday engine flame out
1053:37	WR	塔臺 復興兩三五再換 [tower transfer transasia two tree five again]
1053:39	LC	transasia two tree five please try again contact taipei approach one one niner decimal seven
1053:44	LC	我再換一次給你 [i transfer it to you again]
1053:47	WR	好 謝謝 [okay thanks]
1054:08	WM	塔臺你有看到復興兩三五嗎 [tower do you see transasia two tree five]
1054:14	LC	我看不到實機 [i cannot see the aircraft]
1054:33	WM	塔臺 你再幫我叫一下復興兩三五 [tower please help me to call transasia two tree five again]
1054:35	LC	叫 叫他 然後呢 [call call him and than]



1054:38	WM	和他確認一下叫他換近場臺啊 他高度一直往下掉 [confirm with him and instruct to contact approach he is losing altitude]
1054:41	LC	transasia two tree five songshan tower
1054:47	LC	transasia two tree five songshan tower
1054:53	LC	教官我叫不到復興兩三五 [sir i cannot contact transasia two tree five]
1055:03	LC	transasia two tree five songshan tower
1055:12	NM	塔臺 approach 復興兩三五剛剛有滾行嗎 [tower approach did transasia two tree five have rolling take off a moment ago]
1055:15	LC	有有有 [yes yes yes]
1055:16	NM	然後咧 [and than]
1055:17	LC	有爬到高度么千 有有換出來 [climbed to one thousand and was handed off]
1055:20	NM	他有跟你講話是嗎 [did he speak with you]
1055:22	NM	叫不到他耶 [i cannot contact him]
1055:23	LC	我現在也叫不到他 [i also cannot contact him now]
1055:24	NM	OK
1055:58	WR	你們也叫一下復興哦 [please call the transasia too]
1056:05	LC	transasia two tree five songshan tower
1056:09	LC	transasia two tree five songshan tower
1056:20	LC	教官我還是叫不到他 [sir i still cannot contact him]
1056:23	NM	所以他剛剛有爬到一千多 [so he did climbed to more than one thousand a moment ago]
1056:25	LC	有 [yes]

1056:26	NM	完全看不到 完全 coast 掉了 <i>[cannot see him entirely has been coasted entirely]</i>
1056:33	NM	塔臺 guard 波道叫叫看啊 謝謝 <i>[tower try to call him by guard channel thanks]</i>
1056:47	LC	transasia two tree five songshan tower
1056:53	LC	transasia two tree five songshan tower
1057:09	WR	塔臺 approach <i>[tower approach]</i>
1057:11	LC	請 <i>[go ahead]</i>
1057:11	WR	取消自動放行 <i>[cancel auto release]</i>
1057:12	LC	好 <i>[okay]</i>
1057:13	WR	好 <i>[okay]</i>
1057:14	SP	我們持續的呼叫啦 厚 阿你那邊也叫一下 <i>[we continue to call him oh you call him too]</i>
1057:38	NM	塔臺 approach 妳不要再放起飛的了 先暫停 暫停放行 喔 <i>[tower approach please don't release take-off suspend release oh]</i>
105743	SP	取消自動放行 我們先等一下 看一下情況再跟你講喔 <i>[cancel auto release we wait a while look at the situation and then tell you oh]</i>
1059:09	SP	欸 哈囉 <i>[hey hello]</i>
1059:12	WR	請 是 <i>[go ahead]</i>
1059:13	SP	欸那個我們叫不到啦 厚 <i>[hey we cannot contact him oh]</i>
1059:15	WR	教官你們叫他換的時候有回你們嗎 <i>[sir did he read back when you instructed him to change frequency]</i>
1059:17	LC	有 有 <i>[yes yes]</i>
1059:17	SP	有他有回 <i>[he did read back]</i>

1059:18	WR	他有回是不是 <i>[he did read back yes or no]</i>
1059:19	SP	有換走 換么么 <i>[has been transferred transferred to one one]</i>
1059:20	WR	因為沒有來我們這裡 <i>[because he didn't contact us]</i>
1059:21	SP	蛤 <i>[what]</i>
1059:22	WR	我們 他們沒有跟我們聯絡 我們也叫不到他 <i>[we they didn't contact us we cannot contact him]</i>
1059:24	SP	好 好 <i>[okay okay]</i>
1059:24	WR	對 <i>[right]</i>
1059:25	SP	OK 好
1059:24	WR	好 <i>[okay]</i>
1104:38	NM	塔臺 approach 請問跑道有可以正常進去嗎 航務有出來巡跑道嗎 <i>[tower approach could the runway be entered normally does the flight operations go checking the runway]</i>
1104:46	LC	教官 我問一下好了 <i>[sir i ask for it]</i>
1104:47	NM	好 謝謝 <i>[okay thanks]</i>
1105:11	LC	approach 塔臺 <i>[approach tower]</i>
1105:12	WR	請講 <i>[go ahead]</i>
1105:13	LC	教官我們請航務組出來巡 預計要等五分鐘 <i>[sir we ask the flight operations to go checking the runway expected to wait five minutes]</i>
1105:18	WR	要等五分鐘 好 <i>[wait five minutes okay]</i>
1107:13	SP	Approach 塔臺 <i>[approach tower]</i>
1107:16	NM	請講

		<i>[go ahead]</i>
1107:17	SP	那個我們請航務組做場面最後確認 那沒有問題跑道就開放 會儘快通知你 <i>[we ask the flight operations office to do the final surface confirmation if there are no problems the runway will be open will tell you soon]</i>
1107:23	WR	暫時不進去嘛喔 <i>[not to enter temporarily oh]</i>
1107:24	SP	唉 對 先暫時 對 不好意思 <i>[alas yes temporarily sorry]</i>
1107:28	WR	好 <i>[okay]</i>
1109:49	LC	Approach 塔臺 跑道現在開放 <i>[approach tower the runway is open now]</i>
1109:53	WR	好 <i>[okay]</i>
1109:59	LC	Approach 塔臺 是否恢復自動放行 <i>[approach tower could auto release be resumed]</i>
1110:03	WR	好 <i>[okay]</i>
1110:31	WR	塔臺 approach <i>[tower approach]</i>
1110:32	LC	請 <i>[go ahead]</i>
1110:33	WR	那個 放行還是先暫停 等確切的消息 <i>[suspend release wait for the exact message]</i>
1110:40	LC	教官 那要等多久 <i>[sir how long]</i>
1110:42	WR	等塔臺長告訴我們 <i>[wait for the chief]</i>
1110:44	LC	好 好 <i>[okay okay]</i>

## Attachments

No	Item
3-1	The telephone communication recordings between Songshen tower and Taipei approach
3-2	ATC recordings and transcripts of GE235
3-3	Interview recordings
3-4	Air Situation Display videos and screen captures
3-5	72hrs. rosters of the Songshen tower controllers
3-6	The work reports and duty logs of the Songshen tower controllers
3-7	GE235 Flight plan
3-8	Songshen airport ATIS recordings and transcripts
3-9	NOTAMs of Songshen airport
3-10	ATC general operations manual
3-11	Taipei Approach operations manual
3-12	Songshen Tower operations manual
3-13	AIP Taipei FIR
3-14	METAR/SPECI and TAFs
3-15	AWOS records of Songshen airport
3-16	Central Weather Bureau weather radar data
3-17	AIRMETs
3-18	SIGWX charts
3-19	Satellite images
3-20	Weather analysis charts

Note: Attachments 5-4 to 5-20 are currently not cited in the report. These may be used as future references for the investigation.