

**AIRCRAFT ACCIDENT INVESTIGATION COMMITTEE
STATE SECRETARIAT OF CIVIL AVIATION
KINGDOM OF CAMBODIA**

**AIRCRAFT ACCIDENT INVESTIGATION REPORT
VIETNAM AIRLINES**

TUPOLEV RUSSIA TU-134 B-3, VN-A120

NEAR POCHENTONG INTERNATIONAL AIRPORT

03 SEPTEMBER 1997

CONTENTS

SYNOPSIS..... 1

1. **FACTUAL INFORMATION**

1.1	History of the Flight.....	2-3
1.2	Injuries to Persons.....	4 ✓
1.3	Damage to Aircraft.....	4 ✓
1.4	Other Damage.....	4 ✓
1.5	Personnel Information.....	5 ✓
1.6	Aircraft Information.....	6
1.7	Meteorological Information.....	7
1.8	Aids to Navigation.....	7
1.9	Communications.....	7
1.10	Aerodrome Information.....	7
1.11	Flight Recorders.....	8
1.12	Wreckage and Impact Information.....	8
1.13	Medical and Pathological Information.....	9
1.14	Fire.....	9
1.15	Survival Aspects.....	10
1.16	Tests and Research.....	10
1.17	Additional Information.....	10
1.18	Useful or Effective Investigation Techniques.....	10

2. **ANALYSIS**

2.1	General.....	11-12
2.2	Weather Condition at Phnom Penh Airport.....	13
2.3	Human Factors.....	14-16

3. **CONCLUSIONS**

3.1	Findings.....	17
3.2	Probable Cause.....	18

4.

SAFETY RECOMMENDATIONS

The Aircraft Accident Investigation Committee of Cambodia..... 19

5.

APPENDIXES

Appendix 1	Aircraft TU-134B № 66360 Accident Layout near Pochentong International Airport, Phnom Penh.....	21
Appendix 2	Projection of Horizontal and Vertical Plan of Approach Trajectory of Aircraft to Pochentong Airport (Phnom Penh)	22
Appendix 3	Landing Approach Parameters of TU-134B № 66360 Depend on sending off the Runway Center Line and Its Threshold	23
Appendix 4	Projection of Horizontal and Vertical Plan of Approach Trajectory of Aircraft to Pochentong Airport (Phnom Penh)	24
Appendix 5	Landing Approach Parameters of TU-134B № 66360 Depend on sending off the Runway Center Line and Its Threshold.....	25
Appendix 6	Landing Approach Parameters of TU-134B No 66360 Depend on sending off the Runway Center Line and Its Threshold.....	26
Appendix 7	Cockpit Voice Recorder Transcript.....	27-35

**STATE SECRETARIAT OF CIVIL AVIATION, KINGDOM OF CAMBODIA
AIRCRAFT ACCIDENT INVESTIGATION BOARD**

**VIETNAM AIRLINES TU-134 B-3, VN-A120
CRASHED NEAR POCHENTONG AIRPORT
PHNOM PENH, KINGDOM OF CAMBODIA
SEPTEMBER 03, 1997**

Aircraft Model Tu-134-B3, bearing Vietnam registration marks VN-A120, was operating on an international scheduled passenger SGN-PNH-SGN route under the Flight Number HVN 815, with 6 crew members and 60 passengers on board. The flight departed SGN airport at 06:21:00 hours on 3 September 1997, and was scheduled to land at Pochentong Airport in Cambodia at 06:47:00 hours. Flight 815 made an NDB approach to PNP and elected for Visual Approach to land on Runway 23. The aircraft reached the minimum descent altitude (MDA), despite the fact the runway was not in sight (because of bad weather and poor visibility). The pilot however continued to descend at his own discretion without the ATC's instructions. At about 30 meters above the ground the flight crew were still not having the Runway in sight. At this point the Pilot tried to pull up, by then it was too late because the aircraft's port wing hit a tree which is about 15 meters high and located on the left hand side about 260 meters from the threshold of Runway 23. The accident occurred at 06:44:51 hrs. The accident site was in the vicinity of Thmor Kol village in Chom Chao district, about 500 meters south of Pochentong International Airport.

The Vietnam Airlines Company notified SSCA of the accident. The SSCA, in turn, notified Russia, the State of manufacture, and the Vietnam Government. The Russians sent an accredited representative and an adviser to assist in the investigation.

All times in this report are UTC.

1. FACTUAL INFORMATION

1.1 HISTORY OF FLIGHT

On the 3rd of September 1997 Vietnam Airlines aircraft, TU-134-B3, registration VN-A120, Flight number HVN 815, was on an international scheduled passenger flight from Ho Chi Minh to Phnom Penh with 6 crew members and 60 passengers on board. HVN 815 departed Saigon Airport at 06:21:00 with IFR clearance from Saigon Area Control Center to Phnom Penh Airport via R468 FL100 Squawking 5513. The flight was estimated to land Pochentong Airport at 06:47:00. At 06:28:00, Ho Chi Minh Control Center radioed HVN 815 on SAPEN, advising that the radar observation was completed and instructed the pilot to continue to FL140 and contact Phnom Penh Approach for inbound at 123.8 MHz.

HVN 815 first established contact with Phnom Penh Approach at 06:28:30 from FL 140. The crew reported to Phnom Penh Approach Controller that it was maintaining FL140 and gave the estimated time for landing at 06:47:00. Phnom Penh Approach Controller copied the report and directed the pilot to maintain FL140, head for PNP-NDB, on track inbound 114 and informed the pilot that the weather at Phnom Penh was wind 160/04 knots, visibility 6 Km, cloud broken at 3000 feet, temperature 32, QNH 1007 and Runway in use was 23. HVN 815 copied the instructions. Then at 06:38:47 PNH Approach Controller cleared HVN 815 to descend to 3000 feet, HVN 815 requested for a visual approach to Runway 23. At 06:41:38 PNH Approach Controller asked HVN 815 to continue descend to 2000 feet, call back when flight was over head PNP and call for action confirmation when runway was in sight.

At 06:41:53, PNH Approach Controller radioed HVN 815 that the weather in the vicinity of Pochentong Airport was bad and it is raining over the airfield and visibility from Runway 23 to the north was approximately 3 Kilometers.

At 06:42:13, PNH Approach Controller asked HVN 815 to report its present position. HVN 815 reported that it was 17 Kilometers away. At 06:42:29, the aircraft Cockpit Voice Recorder recorded the copilot saying "Pass through it [the cloud]. The rain will be stopped. We are caught by rain". PNH Approach Controller asked HVN 815 to recheck its altitude and distance. When the Approach Controller heard HVN 815 reporting 2000 feet without the runway in sight, he, the Controller, immediately ordered HVN 815 to join right downwind runway 05 and at the same time the Controller made correction to join left downwind Runway 05 because the wind was 090 / 12knots and asked HVN 815 to report when it had the runway in sight. HVN815 copied the instructions.

The Cockpit Voice Recorder then indicated the flight engineer reporting to his pilots that they had just passed NDB. However, the pilot did not follow the order of Approach Controller to join runway 05 but instead continued to descend for runway 23. The Cockpit Voice Recorder further recorded the captain asking the first officer to verify that the flaps are fully extended and ordered him to "Look out for the runway for landing, continuously keep stay calm to land please, Keep the direction". At 06:44:14, when the aircraft reached an altitude of 60 meters above ground level they still did not have the runway in sight. All this time, the captain kept descending even when the first officer asked the captain to pull up. The first officer said, "Don't see Don't see, Captain ! Turn back;" but the captain replied "OK, wait a little." They continued to descend until the aircraft reached 30 meters without the runway insight. The first officer and flight engineer both said "Turn back, turn back ."

Four seconds after the Flight Engineer said 30 meters, the aircraft hit the top of a tree. The pilot tried in vain to power both engines, but he noticed that the aircraft's altitude did not increase, because they did not realize that the right engine was damaged by the impact and was not providing enough power for the lift. Only at 06:44:43 the pilot realized that one engine was damaged when the Captain said "dead, dead, one engine stopped". The aircraft yawed to the left. At that moment, Pochentong Approach Controller saw HVN 815 flying with the left wing down(banking to the left) and then crashed, at 06:44:51 hours at a site about 1920 meters down from the threshold of the runway 23 and 535 meters off the right of the Center Line of the runway 05. Immediately Pochentong Tower initiated rescue operations with all the local concerned units. There were only two survivors in the accident.

1.2 INJURIES TO PERSONS

Injuries	Crew	Passengers	Other
Fatal	6	58	-
Serious	-	2	-
Minor / None	-	-	

1.3 DAMAGE TO AIRCRAFT

The aircraft was completely destroyed.

1.4 OTHER DAMAGE

3 palms, 2 cows and some trees had a minor damage. Rice crops damage was 665 hectares.

1.5 PERSONNEL INFORMATION

1.5.1 THE PILOT-IN-COMMAND

Named PHAM VAN TIEU aged 59, held an Airline Transport Pilot Licence (ATPL) Number 713003. Issued by the Civil Aviation Administration of Vietnam CAAV, valid until 19/11/1997. His licence carried a rating for Aeroplane, Multi Engine, Land Pilot for IL 28, AN-30, AN-24, AN-26, B-707 and TU-134 with instrument Rating entered in the licence. He also held a valid medical Certificate issued by Medical center of Civil Aviation Administration of Vietnam CAAV on 22/04/97 valid until 22/10/1997. His flying experiences are as follows:

Total flying time	11,228 Hours.
Flight time on the TU-134 B3	4,658 Hours.
Flight time for the last 90 days	129:11 Hours.
Flight time for the last 30 days	52:15 Hours.
Flight time for the last 24 Hours	2 Hours.
Rest Period	4 Hours.

1.5.2 THE CO-PILOT

Named HOANG VAN DINH aged 49, held co-pilot licence and Navigator's licence Number 91112 P/A and 91013 N/P issued by Civil Aviation Administration of Vietnam CAAV, valid until 30/01/1998. His licence carried a rating for Multi engine Airplane, and has been co-pilot for TU-134, IL-14, AN-26 with instrument Rating entered in the licence. He also held a valid Medical Certificate issued by Medical Center of CAA of Vietnam on 24/03/1997 valid until 30/01/98. His flying experiences are as follows :

Total flying time	6,144 Hours.
Flight time on TU-134	3,893 Hours.
Flight time for the last 90 days	122:56 Hours.
Flight time for the last 30 days	60:04 Hours.
Flight time for the 24 Hours	2 Hours.
Rest Period	4 Hours.

1.5.3 THE FLIGHT ENGINEER :

Named LUU THANH TAN aged 53, held Flight Engineer Licence Number 91021 F/E issued by CAA of Vietnam, valid until 24/10/97. His licence carried Multi Engine, Land, for AN-30, AN-26, TU-134. He also held a valid Medical Certificate issued by Medical Center of CAA of Vietnam on 24/04/97, valid until 24/10/97. His flying Experiences are as follow:

Total flying time	9,212 Hours.
Flight time on TU-134	6,306 Hours.
Flight time for the last 90 days	98:12 Hours.
Flight time for the last 30 days	36:16 Hours.
Flight time for the last 24 Hours	2 Hours.
Rest Period	4 Hours.

1.6 AIRCRAFT INFORMATION

1.6.1 AIRFRAME

1.6.1.1 Aircraft Nationality and Registration Marks VN-A 120.

1.6.1.2 Aircraft Type, TU-134 B-3.

1.6.1.3 Serial Number 66360, Manufactured on 27/7/84.

1.6.1.4 Registration Certificate Number 017 on 30/9/90.

1.6.1.5 Airworthiness Certificate Number 057 valid from 31/07/1997 until 30/07/1998.

1.6.1.6 Time since New 11,723 Hours.

1.6.1.7 Numbers of cycles 8,209 cycles.

1.6.1.8 Owner Vietnam Airlines.

1.6.1.9 Manufacturer OKB TUPOLEV of Russia .

1.6.1.10 Operated by Vietnam Airlines.

1.6.2 ENGINES

1.6.2.1 D-30 Series III.

1.6.2.2 Turbo-Jet.

1.6.2.3 Power 1780kg (- 2%)

1.6.2.4 Port serial Number CO 3313043 and starboard serial Number CO 4313015.

1.6.2.5 Time since New 3,834 and 3,106 Hours respectively.

1.7 METEOROLOGICAL INFORMATION

Pochentong Approach had informed that :

At 06:28:49 UTC the wind was 160°/ 04 knots visibility 6 KM, Cloud BKN 3000 feet, Temperature was 32° QNH 1007.

At 06:39:00 the weather become misty and it started to rain [remarked by Pilot (CVR)].

At 06:41:53 UTC it was raining over airfield and visibility from runway 23 to the North was reduced to approximately 3 Km.

At 06:42:29 HVN 815 was caught in the rain.

1.8 AIDS TO NAVIGATION

- NDB at Pochentong Airport was operating normally during the accident of HVN 815.
- No VOR / DME.
- Runway lighting systems were operating normally.

1.9 COMMUNICATIONS :

The communication between HVN 815 and Pochentong was normal. It was no discrepancy reported on the communication.

1.10 AERODROME INFORMATION :

Pochentong Airport is operated by Cambodia Airport Management Service (CAMS). It is located at Lat. 11° 32 ' 9 North; Long 104° 51'2 East. The Runway is 3000 meters long and 40 meters wide with an asphalt surface. The Airport elevation is 39 feet, Runway 05 / 23 true Bearing 046° / 226°.

ATC is operated by State Secretariat of Civil Aviation.

1.11 FLIGHT RECORDER

1.11.1 The Flight Data Recorder System was a Soviet Union production; part Number MSRP - 64M-2

- a) The primary FDR part Number was MLP -14-5 Serial Number 31338.
- b) The secondary FDR part Number was MLP -14-6 Serial Number 11311.

This system recorded 62 parameters.

1.11.2 The CVR was a Soviet Union production part Number MARS and Serial Number 8028.

- 1.11.3**
- a) The primary FDR was installed on 57th Aircraft frame.
 - b) The secondary FDR and CVR were installed on 28th aircraft frame.
 - c) The MLP-14-5 FDR and CVR had a slight exterior damage.
 - d) MLP-14-6 has found without the cover. The magnetic band was dirty and was lost some meters. There were hand carried by members of the Cambodia Aircraft Accident Investigation Committee to Hanoi Engineering section A76 for primarily readout and sent to Moscow Interstate Aviation Committee for secondary readout. Full data was retrieved from Digital Flight Data Recorder. Details are in Appendices.

1.12 WRECKAGES AND IMPACT INFORMATION

At first point of impact the Aircraft hit a tree top of 14 meters high. Then second point of impact the port wing of aircraft hit another tree this time at the trunk less than one meter high and then smashed some trees and palms before crashing on a rice field, located 535 meters from the right hand side of runway 05. (See in the Appendix).

1.12.1 POSITION NO 1 (shown on the Map) [Long.104°59 (East); Lat. 11°32 North]

The first position is on the left hand side of Runway 23 and is 260 meters from the threshold of the runway 23. Many branches of the trees and some wreckage parts of aircraft were found on the ground. The left wing tip wreckage hung on top of the tree, first point of impact.

1.12.2 POSITION NO 2

Its distance from :

- First point of impact is 1980 Meters, Direction 218°
- Axis of Runway is 560 meters, Some branches were cut off by left wing of aircraft.

1.12.3 POSITION NO 3

The port wing tip of Aircraft hit the tree trunk at 0.1 meter from ground surface and cut off some trees and palm.

1.12.4 POSITION NO 4-5

Is 535 meters from axis of runway 05 and on 1920 meters from threshold of runway 23.

1.12.5 POSITION NO 6-7-8 AND 9

Had many pieces of wreckage of the Aircraft, distance from Position 2 to position 6-7-8-9 is 250m. Most of aircraft wreckage was found at position 9 and 5 with the other smaller pieces scattered all over the other positions.

1.13 MEDICAL AND PATHOLOGICAL INFORMATION

The two injured passengers were sent to CALMETTE HOSPITAL for treatment. They completely recovered from all injuries after a few days treatment and medication.

1.14 FIRE

Post-impact fire occurred in this accident, because more than 800 Kilograms of TC-1 fuel leaked from Aircraft.

1.15 SURVIVAL ASPECTS

Two children survived this accident.

1.16 TESTS AND RESEARCH

None

1.17 ADDITIONAL INFORMATION

None

1.18 USEFUL OR EFFECTIVE INVESTIGATION TECHNIQUE

The accident investigation board used evidence from the read out of black boxes and communications from ATC voice recording tape between ATC and HVN 815 and video cassette and pictures and field diagram of accident and voice recording of interviews between investigators and witnesses.

2. ANALYSIS

2.1 GENERAL

- 2.1.1 All flight crew members held valid licences and rating issued by CAA of Vietnam. They were qualified for their respective duties according to the laws and the regulations of the Socialist Republic of Vietnam.
- ✓ 2.1.2 Controller of Pochentong Airport held Air traffic control licence endorsed with Approach Control non-Radar Rating and Tower Control non-Radar Rating issued by the State Secretariat of Civil Aviation, Kingdom of Cambodia.
- 2.1.3 Data from Flight Digital Data Recorder (DFDR) and Cockpit Voice Recorder (CVR) revealed that the aircraft, powerplants, and flight control systems were normal.
- 2.1.4 From the Original Assignment by Vietnam Airlines Company the pilots performed their respective duties on the HVN-815, Flying Officer Mr. Pham Van Tieu aged 59 was assigned as the pilot-in-command, Mr. Hoang Van Dinh aged 49 was assigned as the co-pilot and Mr. Luu Thanh Tan aged 53 was assigned as the flight engineer. All the cockpit crew acted according to their assignment.
- 2.1.5 Phnom Penh Approach Controller advised HVN-815, at the beginning, to maintain Flight Level 140, clear direct to PNP, track inbound 114, visibility 6 Kilometers, and cloud scattered at 3000 feet QNH 1007 runway in use 23. Runway lighting systems were operating normally. When HVN 815 descended to 3000 feet, HVN 815 requested visual approach for runway 23. At that moment Approach controller asked HVN 815 to confirm

if it had the runway in sight. HVN 815 replied NEGATIVE and still requested visual Approach for runway 23. Later on, Approach Controller advised that it was raining over the airfield and visibility from runway 23 to the north was approximately 3 Kilometers. When the aircraft reached 2000 feet HVN-815 confirmed that they did not get runway in sight. The Approach controller immediately instructed HVN-815, to proceed to join left down wind runway 05, due to wind 090/12 knots and asked him to report when he had the runway in sight. The Pilot copied the instructions. The Cockpit Voice Recorder recording revealed that the Captain continued to descend from altitude 2000 feet to Land on runway 23 without instructions of Approach controller. The crew descended to 30 meters and it was too late to go around.

Details are in Appendix.

2.1.6 From Cockpit Voice Recorder we understand that when the altitude was 2000 feet, the flight crew continued to descend, even when they did not have the runway in sight. We quote, after Approach Controller asked HVN-815 to join left down wind runway 05. The Captain continued to approach for landing on runway 23, he said " Look at runway for landing continuously keep stay calm to land, Please, keep the direction". Flight Engineer followed up with the altitude, speed and reported every time when there was an altitude change 100 met ers, 80 met'ers, 60 met'ers and 30 met'ers.

2.1.7 Approximately 13 seconds before the aircraft hit the top of a tree, the aircraft was at 60 meters altitude. The pilot should right away decide to go around because they did not have the Runway in sight. Flight Engineer reported to the Captain to be careful at altitude 60 met ers. Captain said "OK, OK, look at Runway please". First Officer remarked to the Captain that

"Don't see don't see Captain turn back", but the Captain still said " OK, wait a little ".

2.1.8 The Digital Flight Data Recorder revealed that the trajectory of this aircraft was not aligned to the Center Line of the Runway. **Details are in the Appendix.**

2.1.9 When the aircraft reached 2000 feet altitude and did not have the runway in sight the Approach Controller instructed the crew to join left down wind runway 05. If the aircraft had followed the last instruction from the Controller it would be seen behind the Control Tower, but after 1 minute 8 seconds the aircraft appeared from the cloud and was still flying in front of the Control Tower. The Approach Controller's instruction "VN join right base runway 05, call Tower 118.0".

2.1.10 It took only 04 seconds from the time the Flight Engineer said altitude 30 meters to the time when the aircraft hit the top of a tree. Just then the crew tried to turn back but, it was not possible.

2.1.11 Before starting the flight the Pilot did not set the new date and the new flight number with correct timing, therefore the records in the Flight Data Recorder had the previous date (31/08/1997), flight number (919) and a different time.

2.2 WEATHER CONDITION AT PHNOM PENH AIRPORT

There is no meteorological forecast station at Phnom Penh Airport, but there is a METAR information available. According to the testimonial of controllers of Phnom Penh Approach during HVN-815 first contact of Phnom Penh Approach at 06:28:30, the weather in the vicinity of Phnom Penh Airport was not good and there was no rain but at 06:41:53 there was raining over the airfield and visibility from runway 23 to the north was reduced to approximately 3 kilometers. Phnom Penh Approach instructed HVN-815 to use runway 23 to

landing, at the beginning. Later when HVN-815 informed approach controller that they did not see the runway, when they were at 2000 feet altitude Approach Controller then advised HVN-815 to change runway from 23 to 05. The rain at that time was moving from East to West heading for the airport and the visibility was very bad. The rain began with consecutive passing drizzle and is followed by heavy down pour. The characteristic of the rain was similar to a thunderstorm, but we are unable to prove that it was thunderstorm. There was no proof too that the aircraft was hit by a downdraft of thunderstorm too.

2.3 HUMAN FACTORS

2.3.1 During the flight Pham Van Tieu, Director of Safety Security Department and Pilot in command, was acting as a Pilot in command, Hoang Van Dinh, navigator and co-pilot, was acting as first officer and Luu Thanh Tan, Flight Engineer, was acting as the Flight Engineer. From the Communication between Pilot and Dinh (first officer) throughout the flight it was apparent from the Cockpit Voice Recorder that the Pilot in command (Pham Van Tieu) was in command of the aircraft and insisted on making the approach for landing.

2.3.2 During the flight approach to Phnom Penh NDB, First officer Hoang Van Dinh informed the Pilot in command Pham Van Tieu that they could fly into the cloud but if they descended to 2000 feet then there will be no clouds then they decided to fly into the clouds. Pilot in command, Pham Van Tieu, replied " yes, I see the lake " First officer Hoang Van Dinh also saw it. After that the First officer, Hoang Van Dinh, requested visual approach to runway 23 from the Phnom Penh Controller. When Phnom Penh Controller asked whether he had the runway in sight the first officer, Hoang Van Dinh, said "Negative" and requested again for a visual approach for runway 23 and

Phnom Penh Controller acknowledged and advised to descend to 2000 feet and report over Phnom Penh NDB.

2.3.3 Pilot in command Pham Van Tieu made visual approach for landing in spite of bad visibility. Before the accident, Pilot in command Pham Van Tieu did not pay attention to the information and instruction from the Phnom Penh controller because during that time Phnom Penh Controller informed that it was raining over the airfield and wind was 090/12 knots and announced the change of runway to 05. Pilot in command, Pham Van Tieu, carried on to make the approach for runway 23, as though he received instruction from Phnom Penh Controller to land on 23, by asking Flight Engineer, Luu Thanh Tan, to extend the flaps. When Flight Engineer, Luu Thanh Tan, reported altitude 100 meters, which is the Minimum Descent Altitude of Phnom Penh airport, the Pilot in command, Pham Van Tieu, did not take into consideration about Minimum Descent Altitude (MDA) of the airport.

2.3.4 Captain still maintained control

During low altitude, First officer Hoang Van Dinh advised Pilot in command Pham Van Tieu, to execute a miss approach because they were below Minimum Descent Altitude and could not see the runway. The only reaction was, Captain Pham Van Tieu replied to the first officer Hoang Van Dinh "wait a moment".

2.3.5 To go beyond limited time

Approximately 30 second before the accident occurred, Flight Engineer Luu Thanh Tan informed that the altitude was 30 meters, the First officer Hoang Van Dinh and Flight Engineer Luu Thanh Tan advised the Captain to turn back. Then there was a sound "Boom" was heard over the Voice Recorder and we deduced that the aircraft hit the tree and only then did the

Pilot in command started to execute a miss approach and the Flight Engineer pushed for full power but the aircraft was uncontrollable and banked towards the left.

3. CONCLUSIONS

3.1 FINDINGS

3.1.1 All the flight crew members held valid medical certificates and licences carrying ratings for their respective duties in accordance with the laws and the regulations of the Government of Vietnam.

3.1.2 The aircraft was certified, equipped and maintained according to rules and regulations of the Government of Vietnam.

3.1.3 There was rain over airfield. HVN 815, encountered bad weather while making approach runway 23.

✓ 3.1.4 Digital Flight Data Record was properly functioning.

✓ 3.1.5 The Cockpit Voice Recorder was efficient and recorded voice informations during the flight.

✓ 3.1.6 In accordance with the recording data and the information from DFDR, the aircraft did not suffer from any technical failure.

○ 3.1.7 As a result of the crew taking a very much delayed decision to go-around when the altitude was in fact less than 30 meters and the weather conditions not prevailing VMC the aircraft hit the tree at height of 14 meters. This caused partial damage on the left wing surface. The right engine stalled because of foreign object blocking the air inlet.

Finally the aircraft was pushed to a vertical speed of 10-11 meters per second at a 17° angle of attack. The correction and the lack of thrust (only one engine giving the power) caused the

aircraft to stall, and because the aircraft was so low to the ground it lost altitude very quickly and crashed.

3.1.8 The pilot could not see the runway. The final approach was well off the center line. The pilot did not know where the runway was.

3.2 PROBABLE CAUSE

The aircraft accident investigation committee of the Government of Kingdom of Cambodia has determined that the probable cause of accident is the spatial conviction of the captain which resulted in the execution of an improper landing procedure.

Principle factors which contributed to accident are as follows:

3.2.1 The Captain did not follow instruction of the Approach Controller. The pilot flew the aircraft into bad weather condition that had very little or no visual reference. After passing an altitude of below 60 meters the pilot continued the final approach to land even though the runway was not in sight at all.

3.2.2 The Captain did not pay any attention to the First officer and the Flight Engineer's advice.





3.2.3 The Captain insistence to continue engaging the autopilot even after passing minimum decision height and finally resorting to effect manual control at a very late stage.

3.2.4 The Captain's impulsive action to continue the approach even at such a low altitude reveals his psychological unreadiness to abort the landing and go-around.

4. SAFETY RECOMMENDATIONS

- 4.1 In authorizing a person to be a pilot-in-command of an aircraft, responsible persons should consider his past experience. If the person made a mistake by not following the rules, he must be suspended or his Licence revoked.
- 4.2 Flight crew members should be properly trained in order to gain knowledge of operation, communications and leadership.
- 4.3 The decision for landing must be correct, perfect and followed strictly by the rules or procedures of flight.
- 4.4 In conducting VFR flight, pilot must comply with Visual Flight Rules strictly and must not fly into instrument meteorological condition, he must rely on his flight instruments.
- 4.5 Commercial airport is regularly used by public transports and they should be provided with adequate navigation aids and Standard Approach Procedures should be followed.

BY THE AIRCRAFT ACCIDENT INVESTIGATION BOARD OF KINGDOM OF CAMBODIA.

1. Mr. Sok Sambaur  Chairman
2. Mr. Keo Sivorn  member
3. Mr. Chea Aun  member
4. Mr. Kim San  member

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VIETNAM AIRLINES TU-134 B-3 VN-A120 CVR TRANSCRIPT

LAST UPDATED SEPTEMBER 03 1997

RDO-FO ---- RADIO TRANSMISSION BY FO
 FDO-P ---- RADIO TRANSMISSION BY PILOT
 PHNOM PENH ---- PHNOM PENH AIR TRAFFIC CONTROL CENTER
 CAP ---- CAPTAIN
 FO , ---- FIRST OFFICER
 FE ---- FLIGHT ENGINEER

TIME (UTC) IDENT CONTENTS

=====

06:28:30	RDO-P	PNH CONTROL HVN 815 GOOD AFTERNOON
06:28:34	PHNOM PENH	HVN 815 GOOD AFTERNOON GO AHEAD
06:28:39	RDO-P	HVN 815 MAINTAINING 140 ESTIMATING
06:28:49	PHNOM PENH	HVN 815 ROGER COPY 0647 MAINTAINING FL 140 CLEAR DIRECT TO PNP TRACK INBOUND 114 PHNOM PENH WEATHER WIND 160/04 KNOTS VISIBILITY 6 KM AND CLOUD BKN 3000 FT TEMPERATURE 32 ⁰ QNH 1007 RUNWAY IN-USE 23
06:29:15	RDO-P	1007 RUNWAY 23 THANK YOU HVN 815
06:29:20	PHNOM PENH	15. . .
06:34:15	RDO-P	HVN 815 POSITION 060 DME LEVEL 140 REQUEST DESCENT
06:34:23	PHNOM PENH	HVN 815 DESCENT TO 10.000 FT CALL 30 NM INBOUND
06:34:28	RDO-P	DESCENT 10.00

VIETNAM AIRLINES TU-134 B-3 VN-A120 CVR TRANSCRIPT

LAST UPDATED SEPTEMBER 03 1997

RDO-FO ---- RADIO TRANSMISSION BY FO
 RDO-P ---- RADIO TRANSMISSION BY PILOT
 PHNOM PENH ---- PHNOM PENH AIR TRAFFIC CONTROL CENTER
 CAP ---- CAPTAIN
 FO ---- FIRST OFFICER
 FE ---- FLIGHT ENGINEER

TIME (UTC) IDENT FLIGHT ENG CONTENTS

=====

06:34:30	PHNOM PENH		REPORT RUNWAY IN SIGHT
06:36:15	RDO-P		HVN 815 10.000 POSITION 048 DME
06:36:23	PHNOM PENH		HVN 815 DOWN TO 5000 FT
06:36:27	RDO-P		DOWN TO 5000 HVN 815
06:38:47	PHNOM PENH		HVN 815 DOWN TO 3.000 FT CALL RUNWAY IN SIGHT.
06:38:51	RDO-P		DESCENT 3.000 HVN 815
06:38:54	PHNOM PENH		HVN 815 FROM PRESENT POSITION CLEAR DIRECT TO PNP
06:38:58	RDO-P		CHARLIE CHARLIE . . . APPROACH PNP
06:39:00	CAP		I SEE THE CITY
	FO		WHAT?
	CAP		I SEE THE CITY

VIETNAM AIRLINES TU-134 B-3 VN-A120 CVR TRANSCRIPT

LAST UPDATED SEPTEMBER 03 1997

RDO-FO ----- RADIO TRANSMISSION BY FO
 RDO-P ----- RADIO TRANSMISSION BY PILOT
 PHNOM PENH ----- PHNOM PENH AIR TRAFFIC CONTROL CENTER
 CAP ----- CAPTAIN
 FO ----- FIRST OFFICER
 FE ----- FLIGHT ENGINEER

TIME (UTC) IDENT CONTENTS

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06:41:33 RDO-FO NEGATIVE, REQUEST VISUAL APPROACH
 RUNWAY 23

06:41:38 PHNOM PENH HVN 815 ROGER, FUTURE DESCENT TO
 2000 FT REPORT OVERHEAD PNP

06:41:44 RDO-FO CHARLIE CHARLIE REPORT PNP

06:41:49 PHNOM PENH 815

06:41:53 PHNOM PENH HVN 815 NOW INFORMATION RAINING
 OVER AIRFIELD AND VISIBILITY FROM
 RUNWAY 23 TO THE NORTH APPROXIMA-
 TELY 3 KILO METERS

06:42:05 RDO-FO CHARLIE 3 KILOMETERS

FO VISIBILITY 3 KILOMETERS

06:42:13 PHNOM PENH VN 815 CHECK YOUR PRESENT POSITION
 NOW

06:42:17 RDO-FO POSITION NOW 17 KILOMETERS

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TIME (UTC) IDENT CONTENTS

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06:42:24	PHNOM PENH	VN 815 CONFIRM 17 KILOMETERS OR 17 NAUTICAL MILE
06:42:27	RDO-FO	CHARLIE, CHARLIE KILOMETER
06:42:29	PHNOM PENH	HVN 815 ROGER
	FO	PASS THROUGHOUT IT, THE RAIN WILL BE STOPPED
	FO	ABILITY TO APPROACH
	FO	MOTHER, WE ARE CAUGHT BY RAIN, BIP BIP. BIP, BIP, BIP
06:43:24	PHNOM PENH	HVN 815 CHECK ALTITUDE AND DISTANCE AGAIN NOW
06:43:27	RDO-FO	2,000
06:43:29	PHNOM PENH	HVN 815 CONFIRM YOU GET RUNWAY IN SIGHT ?
06:43:31	RDO-FO	NEGATIVE

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TIME (UTC) IDENT CONTENTS

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06:43:33 PHNOM PENH HVN 815 ROGER, PROCEED TO JOIN
 RIGHT DOWNWIND RUNWAY CORRECTION
 LEFT DOWNWIND RUNWAY 05 DUE TO
 THE WIND NOW 090/12 KNOTS REPORT
 RUNWAY IN SIGHT

FE PASS NDB

06:43:48 RDO-FO REPORT RUNWAY IN SIGHT

CAP ARE FLAPS FULLY EXTENDED ?

FE IS RUNWAY IN SIGHT ?

06:43:49 FE SPEED 350

FE FLAPS HAVE ALREADY FULLY EXTENDED

CAP WELL, I SEE

CAP LOOK AT RUNWAY FOR LANDING, CON-
 TINUOUSLY KEEP STAY CALM TO LAND
 PLEASE, KEEP THE DIRECTION.

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TIME (UTC) IDENT CONTENTS

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06:44:00 FE ALTITUDE 100 SPEED 310. IS RUNWAY IN
SIGHT ?

FO NEGATIVE

06:44:07 FE ALTITUDE 80 METERS

CAP OK, OK

FE 310

CAP WELL

06:44:14 FE ALTITUDE 60, BE CAREFUL

CAP OK, OK, LOOK AT RUNWAY PLEASE

FO DON'T SEE. DON'T SEE CAPTAIN TURN
BACK

CAP OK, WAIT A LITTLE

06:44:21 FE 310, 310

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TIME (UTC) IDENT CONTENTS

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06:44:23	FE	30 METERS
	FO	TURN BACK
	FE	TURN BACK
06:44:27		BOOM
06:44:28	CAP	TURN BACK, TURN BACK
	FE	CONTROL LEVERS ARE PUSHED ALREADY
	CAP	DON'T BE HURRY
	CAP	WHY ALTITUDE DOES NOT INCREASE ?
	FO	WHAT ?
	CAP	IT IS TAKEN TO OTHER SIDE
06:44:41	PHNOM PENH	VN JOIN RIGHT BASE RUNWAY 05, CALL TOWER 118.0

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TIME (UTC) IDENT CONTENTS

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	CAP	DEAD, DEAD, ONE ENGINE STOPPED
	FE	PLEASE, TAKE EMERGENCY LANDING. WE MUST TAKE EMERGENCY LANDING.
06:44:51	CAP	DEAD, DEAD, DEAD, DYING, DYING, DYING, DYING, DYING, DY. . . ING.
06:44:52		(END OF RECORDING)