

**ACCIDENT INVESTIGATION BOARD “A”**  
**HEADQUARTERS 220<sup>TH</sup> AIRLIFT WING**  
Brigadier General Benito N E buen Air Base,  
Lapulapu City

**C-130 L-100-20 NO. 4593 INVESTIGATION REPORT**

**I. AUTHORITY**

By virtue of SO # 20, Hqs, 220<sup>th</sup> AW dtd 16 June 2008, the following officers, opposite their designation, are directed to compose the Wing Accident/Incident Investigation Board “A” effective 01- July 31 December 2008.

COL GERALDO D JAMORABO 0-8602 PAF	- Chairman of the Board	MAJ
RAMIL G OLOROSO 0-11101 PAF	- Pilot Member	
CPT KIM ERIC ALEXANDER D AGATEP 0-11646 PAF	- Pilot Member	
CPT EUGENE J ESTAÑA 0-12910 PAF	- Investigation Officer	
CPT RIC MICHAEL G BARING 0-130999 PAF	- Maintenance Officer	
1LT MERITTO JAY E QUIJANO 0-14063 PAF	- Recorder	
Medical Officer from MBEAB Hospital	- Flight Surgeon	

**II. BACKGROUND**

**A. HISTORY OF FLIGHT**

**a.1) Crew Line Up**

MAJ MANUEL A ZAMBRANO JR 0-11429 PAF	- Instructor Pilot
CPT ADRIAN B DEDIOS 0-12908 PAF	- Student Co-Pilot
TSgt Constantino Enrique P Lobrigas 747288 PAF	- Instructor Flight Engineer
SSgt John M Areola 785134 PAF	- Student Flight Engineer
SSgt Garry F Diñoso 793276 PAF	- Crew Chief
SSgt Felix Pedro M Patriarca 747239 PAF	- Flight Mechanic
SSgt Petronilo F Fernandez 770021 PAF	- Loadmaster
SSgt Patricio R Clair Jr 785 745 PAF	- Loadmaster
SSgt Aldrin A Illustrisimo 793171 PAF	- Student Loadmaster

**a.2) Authority**

Flight Order Number: 03-08-25

Itinerary: LL-LV-MD-VI-LL

Mission: Airlift SR CL 169-08 students and equipment from Fort Magsaysay for Davao. Pick up PSG Personnel from Iloilo all for Manila (**See Attachment A**)

27°, dew point 26, QNH 1012.1 or 29.89 in Hg, (Remarks: CB all quadrants, Slight TS)

- 7 Runway in use at that time is Runway 05
- 8 The pilots requested for Standard Instrument Departure 4 (SID 4) instead of SID 4A
- 9 The Pilot requested take-off clearance for Runway 23, Charlie intersection departure
- 10 Departure Time for Iloilo 25 2051H August 2008
- 11 The Pilot made a left turn to perform this Take-off Procedure: Left turn within 5NM. Climb and intercept DVO VOR Radial 180 to 4000 ft. Make a left climbing procedure turn within 10 NM to cross DVO VOR at 8000 ft or above. Track out on Radial 321 to cross RABIV at FL 130 or above.
- 12 The last transmission by the Pilot was to report when establish Radial 180 outbound.
- 13 About nine (9) seconds after that last transmission, Davao Approach called Air Force 4593 but no response was heard from the latter. Successive frantic call from Davao Approach immediately followed. (See Attachment E)

### III. COMPOSITION OF TASK FORCE C-130

#### A. JOURNAL OF ACTIVITIES

##### a.1) Movement and Deployment

#### TASK FORCE PAF C-130 “HERCULES”

26 AUGUST 2008

Task Group	Assets	Date/Time	Deployment/Assignment	Remarks
PN	DF 340 Rubber Boat Boston Whaler EWC75 NAVSOU7 -SEAL Team	0140H 0218H	Sarangani to Davao Gulf Talomo Davao City	SAR Opns SAR Opns
		0700H	Talomo and Talicud Island	SAR Opns
CG	SARV 3501 CG SOG Rubber Boat CG Ilander684 CGS DAVAO CATHCMENT MEP TEAM	1645H	Talomo Davao City	SAR Opns
NP	DCPO MARIG CIDG SOCO		PCG Station, Davao City	Inspecting, Leveling Identifying body parts and debris of aircraft parts
AF	NOMAD B-12 NOMAD B 18	0555H-0755H 0605H-0940H	Davao City Area Sibulan Samal Is, Subasta, Talicud Island	SAR Opns SAR Opns
	UH-1H # 512	0714H-0857H	Calinal, Gumalang, Tugbuk, Mintal	SAR Opns

Volunteers	Divers Samal LGU's Davao LGU Wind and Wave			
10 <sup>th</sup> ID, PA	1106 Ready Reserve Bat CDC Metro Davao 10 <sup>th</sup> ID Rescue DRRU			

TASK FORCE PAF C-130 "HERCULES"

27 AUGUST 2008

Task Group	Assets	Date/Time	Deployment/Assignment	Remarks
PN	DF 340 VU 471 Rubber Boat Boston Whaler EWC75 NAVSOU7 -SEAL Team	07635H 0633H 0630H 0630H 0633H	Sector "B" Astorga Sector "A" Sirawan Eastern shoreline area(Taong PT to Maputian PT) Panacan PT to Pagulaya PT Distributed on Board PN floating assets	SAR Opns SAR Opns     SAR Opns
CG	SARV 3501 CG SOG CG Ilander684 CGS DAVAO CATHCMENT MEP TEAM(Rubber Boat)	0505H  1330H  1146H	Sector "C"  All Sector  Suspected Crash Site	SAR Opns
NP	DCPO MARIG CIDG SOCO		PCG Station, Davao City	Inspecting, Leveling Identifying body parts and debris of aircraft parts
AF	NOMAD UH-1H # 512 B205A #321 S 76- 745 505 SRS Rubber Boat	ATD    ATA 1210H 1342H 0957H 1027H 0847H 1110H 0730H 1245H	Posible Crash Site Sector "A" Talikud Island Sector "A" Suspected Crash Site	SAR Opns SAR Opns SAR Opns SAR Opns
GU'S GO'S villian Volunteers	911 APPA(MBCA Barracuda) Samal Island (MBCA sting ray)	0705H  0705H	Sector "A" (Samal Island)  Sector "A" (Samal Island)	SAR Opns  SAR Opns

	DRRU(MBCA Camotes 3)			
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TASK FORCE PAF C-130 "HERCULES"

28 AUGUST 2008

Task Group	Assets	Date/Time	Deployment/Assignment	Remarks
PN	DF 340 VU 471 Rubber Boat Boston Whaler EWC75 NAVSOU7 -SEAL Team	0640H 0730H 0730H 0645H	Sector "A" Sector "A" Sector "A" Sector "A"  Disributed on Board PN Floating Assets	SAR Opns SAR Opns SAR Opns SAR Opns  SAR Opns
CG	SARV 3501 CG SOG CG Ilander684 CGS DAVAO CATHCMENT MEP TEAM	0920H	All Sector	SAR Opns
NP	DCPO MARIG CIDG SOCO		PCG Station, Davao City	Inspecting, Leveling Identifying body parts and debris of aircraft parts
AF	NOMAD UH-1H # 512 B205A #321 S 76- 745 505 <sup>th</sup> SRS Rubber Boat 505 <sup>th</sup> SRS 7 <sup>th</sup> ARCEN(MBCA Camotes)	ATD ATA 1045H 1212H 1324H 1415H 0847H 1110H 0730H 1245H  1400H 1600H	Talicut Island Sector "A" Talicut Island Sector "A" Suspected Crash Site  Suspected Crash site	SAR Opns SAR Opns SAR Opns SAR Opns  SAR opns
GU'S GO'S villian plunte ers	911 APPA Samal Island Divers Samal LGU's Davao LGU Wind and Wave (camotes 3)	0821H	Sector "A" Suspected Crash site	SAR Opns
10 <sup>th</sup> ,PA	1106 Ready Reserve Bat CDC Metro Davao 10 <sup>th</sup> ID Rescue			

roup				
PN	DF 340 VU 471 Rubber Boat Boston Whaler NAVSOU7 -SEAL Team	0730H 0834H 0758H 0758H 0758H	Penalata down to talikud Island Western Shorlines panacan down to talomo pt Western shoreline panacan upto mansaca pt Western shoreline panacan upto mansaca pt Disributed on Board PN Floating Assets	SAR Opns SAR Opns SAR Opns SAR Opns SAR Opns
'CG	SARV 3501 CG SOG CG Ilander684 CGS DAVAO CATHCMENT MEP TEAM			
'NP	DCPO MARIG CIDG SOCO		PCG Station, Davao City	Inspecting, Leveling Identifying body parts and debris of aircraft parts
'AF	NOMAD UH-1H # 512 B205A #321 S 76- 745 505 <sup>th</sup> SRS Rubber Boat 505 <sup>th</sup> SRS 7 <sup>th</sup> ARCEN(MBCA Camotes) (MBCA barracuda)	ATD    ATA  1143H 1322H 0920H 1225H  0830H  0900H  1400H	Tibungco pt Gensan  Sector "A"  Suspected Crash Site  Suspected Crash site	SAR Opns Pick up Sonar Eqpt  SAR Opns  SAR opns
3U'S 3O'S vilian lunte ers	911 APPA Samal Island Divers Samal LGU's Davao LGU Wind and Wave Baracuda	0900H	Sector "A" Suspected Crash site (sirawan)	SAR Opns
10 <sup>th</sup> ,PA	1106 Ready Reserve Bat CDC Metro Davao 10 <sup>th</sup> ID Rescue DRRU(MBCA Camotes 3)			

**a.2) Situation Report**

PAF and SSGt Aldrin Illustrimo PAF, Two (2) unidentified PA personnel were reportedly passengers of the plane. On 252230H Aug 2008 NMEF OC receive telephone call from ATO Davao City reporting the loss of radio contact with PAF C-130 plane which took off from Davao International Airport, Davao City. Said operations center immediately relayed the information to COC, EMC and NOC, HPN and alerted NTF 71 for possible SAR operations. As NTF 71 Prepares VU-71 to conduct SAR operations, COL ISAGANI SILVA PAF (GSC) Commander TOG 11, requested NTF71 to conduct SAR operations on missing PAF C-130 on 260013H August 2008. VU471 proceeded to the suspected crash site as directed, with negative result. The whereabouts of the aircraft and the status remained uncertain through the morning. On 260140H Aug 2008 DFF34) departed Glan, Sarangani province en-route to the Davao to conduct SAR operations. On 260700H Aug 2008, EWC&% conducted SAR operation at vicinity Talumo Davao City and Talikud Island, the fate of flight nr 4593 was finally determined when human body parts and aircraft debris were reportedly recovered in the coastal area of Davao City specially barangay bucana and and barangay lapulapu in Agdao district. With the confirmation of the crash, an inter-agency task force was formed comprising AFP units NFEM, TOG XI, and 10ID: PNP, PCG, LGU's, OCD XI, and 101D, PNP, PCG, LGU's, OCD XI, civilian volunteers, and NGO's to facilitate search and rescue efforts, recovery and retrieval operations.

## II. CHRONOLOGY OF EVENTS

### DAY ONE- 26 August 2008

1030H- Briefing of all agencies participating in the SAR conducted at Brgy Hall of Barangay Bucana, Davao City with PNP/PAF/911/PCG/NFEM.

1000H- Received call from Davao TUG/Davao Pilot found floating wheel assembly or tire assembly of missing aircraft near Legaspi oil 10 o/a 260500H Aug 08.

1130H- Briefing at Barangay Hall og Barangay Bucana was conducted based on interviewed account from witness that the missing C-130 might have crashed at vicinity 2 NM Punta del sol.

1230H- Search coordinates were established at the suspected crash site per eyewitness account.

1300H- Dive Boat with fish finder, DF 340, EW 75 and 1 PAF Helicopter continued search.

1345H- Text from Councilor Avila that recovered head part of human body found near Brgy Lapu-lapu /CP Nr 0929-5353492

1400H- Taskforce C-130 was formally formed. Command Post located at CGS Davao City, Sta Ana Pier with Commander, NFEM designated as OSC. CGS Davao designated as catchment area for recovered bodies/parts and aircraft debris.

1620H- Private Helicopter airborne at vicinity CP with Hon. Duterte and Commander, NFEM on board.

1630H- Dive Boat with fish finder and divers reported coordinates of C-130 at lat 07 Deg 1 Min N, Long 125 Deg 37.9 E at vicinity 25 NM of Brgy Bucana, Davao City. Observed jet fuel slick and bubbles on the surface of the waters at vicinity of said coordinates.

1645H- Private helicopter back Hon Duterte escorted by CNFEM visited Command post.

1730H- Dive Boat reported back to CP.

1740H- Task Group Civilian Volunteers temporarily terminated

## III. RESULTS OF OPERATION

A. Recovered body parts: Part Lungs (left portion), Mons Pubis soft tissue, small intestine (portion), 6 cm portion of mesentery parts of scalp, skin with soft tissue. Others unrecorded brought to DOH for freezing.

B. Recovered aircraft parts and personal belongings: Aircraft tire assembly, Bandage plaster (4inches), four (4) vials, two (2) Amps distilled water, Fexipen 120 mg cap, Fansilar Chlorthiazide cap, Back pack parts, Black xtripl 2.0 Manual combat boots, Other parts

- G. In day 1, there was a well coordinated effort by all the agencies including the volunteers in the conduct of SAR operations.
- H. The recovery of body parts and aircraft debris from practically along the shorelines of Davao City specifically Agdao District and Barangay Bucana indicates that the tidal current at the time of the crash which is flooding brought this item inwards.
- I. Eyewitness accounts disclose that at the time of the crash, there was a heavy downpour, heavy clouds in the area, strong winds and lightning. One witness recall seeing a long streak of lightning that seemed too close followed by a bigbang.
- J. Most eyewitnesses pointed at the sea area wets of Talikud island as the possible crash site.

ROSAURO ARNEL Q GONZALES  
 CAPT PN (GSC)  
 Commander, TF C-130 Hercules

TASK FORCE C-130  
 SITUATION REPORT AS OF 27 AUGUST 2008

I. SEARCHPLAN

With the suspected crash site as point of reference, each watercraft including aircraft is designated sectors to maximize SAR operations in the area. The following are the designated sectors on the SAR area; Sector "A", 5 NM south from Sta Ana Pier and 14.5 NM east from Sirawan Pt, Toril Davao City to Samal Island. Sector "B", 5 NM south from sector "A" AND 15 NM east from Astorga Pt, Sta Cruz Davao Del Sur to Maglinang , Bagacay Pt. Sector "C", 9 NM south from sector "B" and 19 NM east from Digos Pt. PCG Islander 684 will conduct search and rescue patrol operations at Secto "A","B","C" and may extend outward as situation warrants. PAF Helicopter continues to cover the whole Davao Gulf.

Per coordination made with the administrative officer of IGACOS, search teams composed of volunteers from said LGU will scour the shorelines of Samal at the vicinity of the suspected crash site.

II. UNITS DEPLOYED

- A. Task Group PN (NTF 71): DF340, VU471, Boston Whaler, EWC75, Rubber Boat, NAV SOU7 (SEAL Team)
- B. Task Group PCG: SARV 3501,CGSOG,CG Islander 684,
- C. Task Group PNP: DCPO, MARIG, CIDG, SOCO.
- D. Task Group PAF: Nomad, UH-IH Nr 512
- E. LGU's, NGO's Civilians Volunteer:911.APPA,Samal Island divers, Davao LGU, Samal LGU, Wind and Wave Divers

III. CHRONOLOGY OF EVENTS

DAY TWO -27 AUGUST 2008

0505H - SARV 3501 departed Sta ANA pier for SAR mission at designated Sector  
 0630H - PN rubber boat departed NSVDVO to conduct SAR operation on the

- Speed boat Tristan equipped with SONAR conduct search and recovery operation and to sweep area of suspected crash site

0750H- “ MBCA camotes 3 of wind and wave davao city conduct SAR vicinity at suspected crash site area Sector “A”

0957H – 1027H – PAF B205A-1 nr 321 conducted search and recovery operations at suspected crash site.

1017- Three (3) PCG personnel on board marine environmental protection rubber boat departed to conduct investigation on the jet fuel slick at the suspected crash site.

1100H- APPA temporarily terminated search and recovery operations.

1130H- Maj Gen Perez AFP, 3AD Commander, Maj Gen Gammad AFP and members of the PAF Investigating Team visited command post and were given briefing about the on going SAR and recovery operations.

1146H- PCG MEP personnel aboard rubber boat reported that there was no more jet fuel slick at the suspected crash site.

1200H- As directed by CTF C-130 Hercules thru TG PCG under COMMO DABI PCG SARV 3501 transferred search efforts from sector “C” to sector “B”

1205H-PAF Team departed

1210H- UH-1H H512 conducted search and rescue operations.

1330H- PCG Islander 684 conducted search and rescue patrol operations at sector “A,”B”.”C”

1615H-Pilots of PCG Islander conducted debriefing at operations center.

1800H- Task Force C-130 Hercules search and retrieval operations were temporarily terminated.

#### IV. RESULT OF OPERATIONS

C. Recovered body parts: Pieces of decomposing intestines with very foul odor (buried by SOCO operatives) and pieces of body tissues

D. Recovered aircraft parts and personal belongings: Part of aircraft, bag patch, cockpit sofa, Thai Hercules patch, Insulation debris and shattered marine plywood used to be the floor shoring of the plane.

#### V. ACTION PLAN ON DAY 3 (28 August 2008)

A. Dive boat Tristan with SONAR will Sweep the immediate vicinity of suspected crash site to detect object under water:

B. Continue air search at Davao Gulf from sector “A” “B” “C”

C. Continue sector search by PN floating assets DF 340, VU 471, Boston whaler, EWC 75, PCG SAR 3501, civilian volunteers water crafts and PAF PCG aircrafts.

D. Task force C-130 Hercules to prepare Assessment Report

#### VI. COMMENTS AND OBSERVATIONS

E. There was marked decline in recovered human body parts and aircraft debris.

F. The reported cylinder like object detected by fish finder and believe to be the body of an aircraft at the suspected crash site in day 1, has move to deeper portion of the sea bottom (from 600 ft to 800ft deep) that may be attributed to strong under current as reported by dive boat Tristan which conducted a SONAR sweep of the are. Likewise, the reported jet fuel slick was observe was dissipated.

G. All search team which scoured the surrounding shorelines reported negative signs of any survivor of the plane crash



TASK FORCE C-130 "HERCULES"  
SITUATION REPORT AS OF 28 AUGUST 2008

I. SEARCH PLAN

The ongoing search and retrieval operation that has already covered an area of approximately 280 square nautical miles will be further extended outward from the suspected crash site as point of reference. Floating assets from PN, PCG and other task groups will scour the eastern and western shorelines of Davao Gulf. PAF air assets and PCG Islander 684 will continue the conduct of air search over the Davao Gulf area.

11 UNITS DEPLOYED

- a. Task Group PN (NTF71): DF340, VU 471, Boston Whaler, EWC75, Rubber boat, NAVSOU7(SEAL TEAM).
- b. Task Group PCG: SARV3501, CGSOG, CG Islander 684,
- c. Task Group PNP: DCPO, MARIG, CIDG, SOCO
- d. Task Group PAF: NOMAD, UH-1H nr 512
- e. Task Group PA: 10<sup>th</sup> ID, 11 OG ready reserve battalion CDC Metro Davao, Davao, 10<sup>th</sup> ID Rescue DRRU
- f. LGU's, NGO's, Civilians Volunteer: 911, Aquamarine protection and preservation Alliance (APPA), Samal Island Divers, Davao LGU, Samal LGU, Wind and Wave Davao Divers.

CHRONOLOGY OF EVENTS

DAY 3 –(28 AUGUST 2008)

0640H – DF 340 and Boston Whaler departed CFT, NSDVO to conduct search and retrieval operations at Sector "A".

0750H - PNVU 471 and rubber boat departed CTF, NSDVO to conduct search and retrieval operations at designated Sector "A" (vicinity 2NM northeast off Sta Ana Pt.)

0821H- PAF 505 personnel onboard MBCA, "Camotes 3" of Wind and Wave Davao departed Sta. Ana Wharf to conduct search and retrieval operations at suspected crash site.

0847H – PAF S 76 #745 conducted search patrol over waters near Talicud Island.

0920H – PSG Islander Nr 684 conducted search patrol at all sectors.

1035H – Task Force C-130 "Hercules" conducted press conference.

1045H – PAF UH- #322 conducted search and retrieval operations at talicud Island

1110H – PAF S-76 #745 Temporarily halted operation.

1200H – Task Force C130 "Hercules" press conference adjourned.

1212H – PAF UH-IH # 322 Temporarily halted operation.

1245H – PAF 505 ARS personnel on board "Camotes 3" temporarily halted operation.

1320H - PCG SARV 3501 conducted search and retrieval operation at Sectors "B" and "C".

1324H – Bell 205 # 321 conducted search patrol at Sector 'A'.

1400H – PAF 505 personnel on board MBCA. "Camotes 3" of Wind and Wave Davao departed Sta. Ana Wharf to conduct search and retrieval at suspected crash site.

1415H – Bell 205# 321 temporarily halted operations.

1545H – NAVSOU7 and PAF 505 SRS personnel turned over the recovered pieces of marine plywood.

1600H – PAF 505 SRS on board MBCA "Camotes 3" temporarily halted operation

- A. To request the assistance of civilian vessels equipped with sonar to detect the actual location of C130 wreckage.
- B. Continue air search of Davao Gulf from Sectors 'A', 'B', 'C' and to be extended outward from the recent site.
- C. Continue sector search by PN floating assets DF 340, VU 471, Boston Wharf, PCG SAR 3501, civilian volunteers water crafts and PAF and PCG aircrafts.

VII. COMMENTS AND OBSERVATIONS

- A. There was a marked decline in the recovered human body parts and aircraft debris. These and debris were recovered farther away from the suspected crash site.
- B. The ongoing search and retrieval operation was disrupted in the afternoon due to bad weather condition.
- C. All search teams which scoured the surrounding shorelines reported negative signs of any survivor of the plane crash.

ROSAURO ARNEL Q GONZALES JR  
CAPT PN(GSC)  
Commander, TF C-130 Hercules

**a.3) Evidence Collected by SOCO**

Republic of the Philippines  
Department of the Interior and Local Government  
PHILIPPINE NATIONAL POLICE  
REGIONAL CRIME LABORATORY OFFICE  
Candelaria ST., Ecoland, Davao City

**EVIDENCE COLLECTED**

OOA 1130H 26 August 2008 retrieved by Elements of PS1 (Sta. ANA)

Black Cellophane Bag # 1 – Upholsteries of Interior parts of aircraft

- Black Cellophane Bag # 5 - AFP ID – SSg Petronillo Felix Fernandez  
 Driver's License of SSg Petronillo F  
 Fernandez.  
 - ID # 853044 – Presidential Aircraft  
 Wing 250T Bureau of Brando F Herrera with cell Nr  
 09209818090  
 - 1 pc 20 peso bill  
 - 1 pc black wallet  
 - Partially damage PAF Pay Voucher of Petronillo F  
 Fernandez for the month June  
 - 4 pcs rubberized material with marked Soft  
 R411N1Q74.  
 - Aircrew Manual
- Black Cellophane Bag # 6 - Upholsteries interior parts  
 - Damage insulations covered inside the aircraft  
 - one (1) damaged rubber maid, color white
- Black Cellophane Bag # 7 - Allegedly parts human body 2 or more persons,  
 mostly human skin and fats and some parts of  
 the bones on chest.
- Black Cellophane Bag # 8 - Main landing gear assembly CR Nr 388058-9
- Black Cellophane Bag # 9 - 1 pc of right combat boots color black  
 - 1 pc wallet color brown partially damage  
 - 1 pc ladies bag color brown  
 - 1 pc of sandal color blue  
 - 1 pc of ladies bag color black  
 - 1 pc of black t-shirt

OOA 1330H 26 August 2008

- Black Cellophane Bag # 10 - 1 pc of colored picture size 2x2 of SSg John Areola  
 - pc small lighter with Spot light color red  
 - Document of Propeller Malfunction
- Black Cellophane Bag # 11 - Parts of Head sets  
 Cellphone pouch of Motorola  
 - 1 pc bag pack marked extreme sports partially damaged.  
 - Fexophenadine tablets  
 - Upholsteries of Interior parts of Aircraft
- Black Cellophane Bag # 12 - Alleged pats of human body

OOA 1605H 26 August 2008 RETRIEVED BY ps1 (Sta. Ana)

- Black Cellophane Bag # 13 - Pexophine 120 mg  
 - 4 pcs vials  
 - Hydrochlothiazide capsules  
 - 1 pc of bandage  
 - 2 pcs Ampules
- Black Cellophane Bag # 14 - Damage portion of bag pack  
 - 1 pc drift 2 0

Black Cellophane Bag #19- - 1 pc pack bag marked CLIFFS K partially Damage  
- 1 pc ladies bag marked boboli color black  
- 1 pc of airforce pack bag totally damage  
1 pc plastic box color red partially damage with marked rubber maid.  
- Upholstery parts of aircraft  
- Foam  
- Alleged Insulation Heat absorbance

Black Cellophane Bag # 20 - Alleged parts of human body

Black Cellophane Bag # 21 - Alleged parts of human body

Republic of the Philippines  
Department of the Interior and Local Government  
National Police Commission  
PHILIPPINE NATIONAL POLICE  
CRIME LABORATORY  
Ecoland, Davao City

27 August 2008

RECOVERED FROM C130 CRASHED SITE

Bag # 20-A

Date: 27 August 2008

ITEM RECOVERED FROM BAG # 20:

- a) Human Tissues
- b) Leather Upholstery
- c) Two (02) pcs Communication Wiring

Bag # 22

Date/ Time/ Place recovered: 261700H August 2008 at 76-A Bucana Shoreline

ITEM RECOVERED:

- a) One (01) pc Sofa seat leatherette (Cockpit area)

Bag # 24

Date/Time/Place recovered: 270615H August 2008 at Lapu-lapu Shoreline

ITEM RECOVERED:

- a) One (01) pc Thai Hercules Patch

Republic of the Philippines  
Department of the Interior and Local Government  
National Police Commission  
PHILIPPINE NATIONAL POLICE  
CRIME LABORATORY  
Ecoland, Davao City

28 August 2008

RECOVERED FROM C130 CRASHED SITE

Bag# 27

Date/Time recovered: 1120H 28 August 2008

Place Recovered: Bucana Shoreline, Brgy. 76-A, Davao City

Recovered by: P03 Eleazar Libay PNP of PS2, DCPO (San Pedro Police Station)

ITEM RECOVERED:

- a. Several broken parts window/windshield
- b. Burned foam

Bag# 28

Date/Time recovered: 1130H 28 August 2008

Place recovered: Panacan shoreline, Davao City

Recovered by: Civilian fishermen of wit:

- a. Isang Maali
- b. Jenly lumanas
- c. Kennedy Majeri
- d. Iamin Emani

Recovered by: Civilian fisherman Hadji Abubakar Samlani

ITEM RECOVERED

- a) Right side black Magnum Sympatex combat shoe
- b) Parts of Human right leg and foot
- c) Black sock

Bag# 30

Date/Time recovered: 1400H 28 August 2008

Place Recovered: Paradise Beach Resort, Babak, Island Garden City of Samal

Recovered by: 505 PAF LED BY Msg Danny Lial

ITEM RECOVERED:

- a) Several pieces of marine plywoods (served as C130 flooring)

*NOTE:* Above-cited items were properly indorsed to Msg Joey A Mañibo PAF except two (2) pcs parts of human legs and feet which were brought to Angel Funeral Parlor for preservation and examination.

AIRCRAFT DEBRIS/PARTS RECOVERED ICOW REPORTED MISSING C-130

QTY	DESIG CODE	DESCRIPTION	DATE & TIME	LOCATION	TURNED OVER BY	RECEIVED
	12	Tire Assembly	26114H Aug 08	Legaspi Corp	PNP Stn 4	POI Loriza
	13	Bandage Plater4". 4 vials, 2 amps distilled H2O Mg. Cap. Fansitar Chlorthiazide cap	261530H Aug 08	Off shore Brgy. Lapulapu	PNP Sta. Ana & LCDR GUIEB PCG	SOCO
	14	Backpack parts black, CTRI PT 2.0	261530H Aug 08	Off shore Brgy. Lapulapu	PNP Stn 1	SOCO
	15	Parts Aircraft Manual	261530H Aug 08		PNP Stn. 1	SOCO
2	22	Aircraft Insulation Debris	270920H Aug 08	Offshore Brgy Bucana	Civilian Volunteers	SOCO
1	22	Part of Patch	270920H Aug 08	Offshore Brgy Bucana	Civilian Volunteers	SOCO
1	22	Part of Bag	270920H Aug 08	Offshore Brgy Bucana	Civilian Volunteers	SOCO
1	23	Part of Cockpit Sofa	271000H Aug 08	2 NM E of Puhon Pt.	PAF 505	SOCO
1	24	Thai Hercules Part	271028H Aug 08	Offshore Brgy Lapulapu	PNP Stn. 1	SOCO

SURVIVOR/BODY PARTS RECOVERED ICOW REPORTED MISSING C130

QTY	DESIG CODE	DESCRIPTION	DATE & TIME	LOCATION	TURNED OVER BY	RECEIVED BY
1	16	Parts of lungs (left portion), mons. Pubis, soft tissue portion, about 6 cm small intestine, portion of mesetery, part of scalp	261530H Aug 08	Offshore Brgy Lapulapu	PNP Stn 1	SOCO/DMC
1	21	Skin with soft tissue	262055H Aug 08	Offshore Sta. Ana	PNP Sta. Ana & LCDR GUIEB PCG	SUPT LINY T CORPUZ PNP & SOCO/DMC
1	22	Skin, fats, pieces of internal organs, pieces of bones	261030H Aug 08f	Offshore of Brgy Bucana	Civilian Volunteers/Local Fisherman	SOCO/DMC
1	23	Pieces of intestines	271030H Aug 08	I Km off shore seagull Beach	NAVSOU7 Person board boston whaler	SOCO
5	24	Pieces of Soft tissue	271030H Aug 08	Kaputihan Island	NAVSOU7 Pers	SOCO

Authenticated By:

MARK LUELL E CORTEZ  
ENS PN  
OIC, Command Post, TF C-130

AIRCRAFT DEBRIS/PARTS RECOVERED ICOW REPORTED MISSING C-130

QTY	DESIG CODE	DESCRIPTION	DATE & TIME	LOCATION	TURNED OVER BY	RECVD BY
		Pcs Marine plywood	280900H Aug 08	Legaspi oil log fond	NAVSOU7	SOCO
		Parts of broken windshield/ foam	281120H Aug 08	Brgy Bucana 76-A	PO3 ELEAZAR LIBAY, SAN PEDRO PNP	SOCO
		Pcs Marine plywood	281400H Aug 08	505SRS	SOCO	SOCO
2		Pcs Foam	290920H Aug 08	3.3 NME Off Dumlagat	CGS SARV 501	SOCO
2		Pcs Foam	290920H Aug 08	3.3 NME Off Dumlagat	CGS SARV 501	SOCO
1		A/C DEBRIS	290920H Aug 08	San Jose Penaplata	PN DF340	SOCO
1		Wet look Shoe (right)	290920H Aug 08	San Jose Penaplata	PN DF340	SOCO
1		Civ Shoe (left)	290920H Aug 08	San Jose Penaplata	PN DF340	SOCO
3		Pcs Marine plywood	291205H Aug 08	Panacan Shoreline	Civ Fishermen	SOCO
1		Pcs of color red strap	291205H Aug 08	Panacan Shoreline	Civ Fishermen	SOCO
		Damage T shirt color brown	290930H Aug 08	Panacan Shoreline	Civ Fishermen	TOG11
		1 foot aluminum tube	290930H Aug 08	Panacan Shoreline	Civ Fishermen	TOG11



## IV. INVESTIGATION

### A. OPERATION

#### a.1) Air Crew Qualifications

**Instructor Pilot** – MAJ MANUEL A ZAMBRANO JR PAF was checked-out as qualified Pilot in the C-130B/H/L-100-20 aircraft on 21 August 2004 and as qualified Instructor Pilot in the said aircraft on 26 September 2007. He has logged a total of 4,188.5 flying hours in his flying career. He is also a Flight Examiner and Test Pilot in the N-22B/C aircraft. Subject Officer was also checked-out in the N22B/C aircraft as Pilot on 16 August 1996, Instructor Pilot on 10 July 1999, and as Test Pilot on 18 August 2000.

**Co Pilot** - CPT ADRIAN B DE DIOS PAF is a student Co-Pilot, has completed the Co-Pilot Qualification Course academic phase on 20 June 2006 and was undergoing operational ride (requirements prior to check-out as Co-Pilot). He has logged a total number of 1,213.4 flying hours in his flying career. Subject Officer was also checked-out in the N22B/C aircraft as Pilot on 23 September 2005 and Instructor Pilot on 19 Mar 2008.

**Instructor Flight Engineer** – TSG CONSTANTINO ENRIQUE R LOBRIGAS PAF was checked-out as qualified Flight Engineer in the C-130B/H/L-100-20 aircraft last 27 November 2001 and as qualified Instructor Flight Engineer in the said aircraft last 01 September 2006. He has logged a total of 680.9 flying hours (Opns, 222<sup>nd</sup> AS records) in the C-130 aircraft. And subject NCO has undergone a series of courses and trainings under the 6<sup>th</sup> SOS USAF, MTT, and RAAF MTT.

**Student Flight Engineer** – SSG JOHN M AREOLA PAF is a student flight engineer undergoing flight phase training, has completed the academic phase of the Flight Engineer Qualification Course last 17 May 2008. Subject NCO was also checked-out as qualified Instructor Loadmaster in the C-130B/H/L-100-20 aircraft last 03 August 2006. He has logged a total of 868.6 flying hours (Opns, 222<sup>nd</sup> AS records) in the C-130 aircraft.

**Load Master** – SSG PETRONILO F FERNANDEZ PAF was checked-out as qualified Loadmaster in the C-130B/H/L-100-20 aircraft last 09 June 2000. Subject NCO has also completed the Flight Engineer Qualification Course last 17 May 2008. He has logged a total of 1,367.6 flying hours (Opns, 222<sup>nd</sup> AS records) in the C-130 aircraft.

**Load Master** – SSG PATRICIO R CLAUDR JR PAF was checked-out as qualified Loadmaster in the C-130B/H/L-100-20 aircraft last 08 July 2000. Subject NCO has also completed the Instructor Loadmaster Qualification Course last 15 July 2008. He has logged a total of 1,193.3 flying hours (Opns, 222<sup>nd</sup> AS records) in the C-130 aircraft.

**Student Loadmaster Master** – SSG ALDRIN A ILUSTRISIMO PAF is a student

in General Course in the C-130B/H/L-100-20 aircraft on 16 June 1999 (Prerequisite course to qualify as Crew Chief). He has logged a total of 147.2 flying hours (Opns, 222<sup>nd</sup> AS records) in the C-130 aircraft.

**SUMMARY**

NAME	QUALIFICATION	DATE OF LAST A.P.E.	DATE OF CHK OUT	FLYING TIME C-130(HRS)
MAJ MANUEL A ZAMBRANO	IP / PIC	02/01/08	10/21/04	4,191.0
CPT ADRIAN B DE DIOS	OPN'L CP	04/23/08		90.9
TSGT CONSTANTINO ER LOBRIGAS	IFE / FE	03/10/08	11/27/01	680.0
SSGT JOHN M AREOLA	LOAD MASTER STUDENT F.E.	10/23/07	12/11/00	763.4
SSGT PETRONILO FERNANDEZ	LOAD MASTER	07/21/08	06/09/00	1,375.8
SSGT PATRICIO R CLAUJR	LOAD MASTER	05/05/08	07/06/00	1,191.8
SSGT GARRY F DINOSO	CREW CHIEF	11/08/08	04/05/08	103.4
SSGT FELIX PEDRO M PATRIRCA	FLT MECH	01/16/08		153.0
SSGTALDRIN A ILUSTRISIMO	STUD L.M.			15.9

**a.2) Medical Records & Proficiency Exams ( See Attachment H)**

**a.3) Nature of Flight Missions for that week ( See Attachment I)**

#### **a.4) Analysis**

The data gathered from the Aircrew's background based on their qualification, education, and training were all satisfactorily in accordance with the minimum requirements of 228 Transport Crew Training Squadron and Wing Safety Office. The medical records as well show no hindrances that may have an effect on the physical ability, mental judgment and decision of the following aircrew.

The Aircrews were all highly experienced, professional and has impressive high flying hours with the C130 aircraft. With the above references, said aircrew that flew the ill fated C-130 which crashed at Davao gulf were very much qualified to fly the said aircraft. Also, their annual physical examinations are updated. Except for the three members of the crew, all were qualified and are regular aircrew. Although, Cpt De Dios was undergoing operational ride as CO-pilot in the C-130 type of aircraft, he also accumulated considerable flying time as Instructor Pilot and Pilot in Command in Nomad type of aircraft.

On the other hand the flight mission on the previous week shows on the Flight Follow that the aircrew flew an average of two to four sorties a day with an equivalent of 5 to 6 hours a day. It seem that flight fatigue on this multiple leg is manageable on the part of the crew since two aircraft were deployed and three sets of crew were deploy at that time in CJVAB.

Based on the data gathered the aircrew were all qualified to fly the mission, in good shape, met all Wing Safety Office requirements, and were not subjected to fatigue prior to that mission.

**Synoptic Situation:** At 1400H today, a tropical depression named “LAWIN” was estimated based on the satellite and surface data at 590 kms SouthEast Catanduanes (13.0°N-130.0°E) with maximum sustained winds of 55 kph near the center. It is forecast to move west northwest of northern Palawan (13.7°N-116.3°E). Intertropical Convergence Zone (ITCZ) affecting Central and Southern Luzon and Visayas.

**Forecast over Davao:** Weather: Wind 350 at 5 knots, TS SO 15CB B 090/290, Temperature 27°, dew point 26, QNH 1012.1 or 29.89 in Hg, (Remarks: CB all quadrants, Slight TS) (See Attachment D)

**b.2) Analysis**

Based on the weather report from PAGASA, the tropical depression named “LAWIN” was estimated over Catanduanes with sustained winds of 55kph and it is forecast to move west northwest of northern Palawan. ITCZ is also affecting Central and Southern Luzon and Visayas. The weather forecast over Davao has a Wind 350 at 5 knots, TS SO 15CB B 090/290, Temperature 27°, dew point 26, QNH 1012.1 or 29.89 in Hg, (Remarks: CB all quadrants, Slight TS).

With the report gathered the weather over Davao has no problem for aircrafts like C130 to fly. However, during the time of the incident all quadrants have CB and slight Thunderstorm over Davao. **With the capabilities of the C130 aircraft the weather over Davao was not a factor that could cancel the mission since no tropical depression was reported.**

With the accounts of the witnesses the C130 aircraft flew inside the clouds and lightning strike was seen before it when down. **With these accounts lightning strike is possible to happen, however the C130 aircraft has a lightning arrester that serves as the static discharger whenever lightning strike hits the aircraft.**

*There are many factors that the lightning strikes might affect the aircraft. However, the Board cannot establish that the weather / lightning strikes were cause factor of the incident but the possibility is still open.*

**C. MAINTENANCE**

**c.1) Maintenance activity after the last Major Inspection (See Attachment G)**

**PDM & SMP**

4593 L-100-20	LAST SMP 04 APRIL 2006	DUE FOR 3 YEARS SMP 04 APRIL 2009	DUE FOR PDM 04 APRIL 2011	DUE FOR 6 YRS SMP 04 APRIL 2012
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**ENGINE & COMPONENT**

Eng Nr	Engine Time	Turbine Time	Comp Time	RGB Time	Tqmtr Time
1	2,724.20	2,724.20	2,724.20	2724.2	2,724.20
2	4,567.3	4,567.3	4,567.3	3,484.2	3,484.2
3	3044.1	868.1	3044.1	3,044.10	3,044.10
4	426.30	1,973.30	426.30	426.30	426.30

**c.2) Discrepancies for last three months**

02 Jun 08	02 Jun 08	#2 Eng TIT still 40oc elow compared to other engine during takeoff and flight opn	#2 eng T.D chk performed
02 Jun 08	02 Jun 08	#4 engf slow to accelerate on speed after starter release Note: start TIT 780c during start	# 4 eng TD valve null orifice adjusted to 3 increments
02 Jun 08	02 Jun 08	Low battery voltage during self contain start	Troubleshooting performed RCCR broken wire reconnected & removed & replaced batt receptacle
02 Jun 08	02 Jun 08	Acft pressurization stuck at 2 in HG during landing and press alt will go to negative at auto press opn. Needs to man press to zero the cabin diff press & press alt	Rate of climb ind & pressure controller removed & replaced (for flight observation)
02 Jun 08	02 Jun 08	Acft press stuck at 2 in hg during landing and press alt will go to negative at auto press to zero the cabin diff press & press alt	Rate of climb indicator & press controller removed and replaced
02Jun 08	02 Jun 08	Rudder trim indicator intermittent opn	Rudder trim tab indicator cannon plug cleaned nd tightened, opn'l chk and exercise found satisfactory
07 Jun 08	08 Jun 08	a/c will pressurize when aircon master switch is placed in auto press & cabin pressure goes to negative. (note: operating at manual press OK)	Pressure controller removed and replaced
28 Apr 08	28 Apr 08	#2 eng rpm fluctuate at normal governing	#2 eng pulse generator cleaned & secured
07 Jun 08	08 Jun 08	#2 engine TIT is lower by 20oc compared to oth engine	Thermocouple removed & replaced
08 Jun 08	08 Jun 08	Suction boost pump booster side intermittent opn	Suction boost pump cannon plug cleaned
08 Jun 08	08 Jun 08	Ess AC Bus off lt illuminate when aux pump sw to ON but voltage, frequency normal, and B C pop out CB of aux pump	Hyd aux pump relay cleaned, ground wiring cleaned
08 Jun 08	08 Jun 08	# 2 eng TIT indication lower of 50 deg C compared to other eng 1 3 4 TIT setting is 1010 deg C while the #2 is 960 deg C with the same TQ and FF	#2 eng TIT indicator resistance chk performed, (pin A and B, pins D and E
		#2 prop goes to 103% rpm above	

12 Jun 08	12 Jun 08	#2 eng rpm goes to 104% rpm during power up at normal governing, when nsw to mech rpm fluctuate then stabilize to 101 % rpm	Prop synchrophaser removed and replaced
12 Jun 08	12 Jun 08	#2 eng mech gov rpm indicating 101 %	#2 prop mech adjusting screw adjusted to decrease psn 4 clicks
12 Jun 08	12 Jun 08	#2 eng oil temp rapidly rises to 95 deg C during ground opn	#2 prop blade angle chk performed, adjusted beta sched adjusting nut to increased psn
13 Jun 08	13 Jun 08	Elevator trim tab wont actuate in down psn at normal (note: emergency ok)	#2 and #4 elevator trim tab control relay removed and replaced
13 Jun 08	13 Jun 08	#2 eng TQ delayed at 2,000 lbs during fwd movement of throttle	#2 prop assy removed and replaced
13 Jun 08	13 Jun 08	#2 prop rpm goes to 102.5 rpm at mech during cruise and 102.5 % during approach at normal governing and it will decrease only at 101.5 %	#2 prop assy removed and replaced
13 Jun 08	13 Jun 08	#2 & #4 RPM goes to 97% -98% when selecting # 3 as master during synchrophasing opn	Re indexing performed
13 Jun 08	13 Jun 08	Unusual sound at CP window during climbing	CP window applied with selicon
13 Jun 08	13 Jun 08	#3 prop or inspection of hyd leak (note: #3 prop low oil lite illuminate in ground & prop is static, service with 1 Qrt	Inspection on #3 prop performed
13 Jun 08	13 Jun 08	#2 eng oil temp rapidly rises on ground	#2 eng oil drained and serviced
13 jun 08	13 Jun 08	#4 LSGI button sometimes engages to normal	#4 LSGI wire chk cannon plug governor reset solenoid cleaned and fixed
20 Jun 08	20 Jun 08	Transponder negative reply on secondary radar and negative mode C on primary radar	Cannon plug on CAD G2 adapter cleaned
23/06/08	23 Jun 08	LH forward MLG tire for change	LH Forward MLG tire removed and replaced
24/06/8	24 Jun 08	# 2 engine torque fluctuating	# 2 engine torque pick-up cleaned and secured
24/06/8	24 Jun 08	# 1 engine oil quantity is only 7 US gals on flight	# 1 engine serviced with 4 quarts of oil
26/06/8	26 Jun 08	Co-pilot window for sealant reapplying	Co-pilot window applied with silicon
26/06/8	26 Jun 08	# 2 engine RTBS assy broken	Tail pipe removed and broken casing of RTBS secured
27/06/08	27 Jun 08	# 1 and #4 eng RPM fluctuates approx 3-5% during take-off &	Synchrophaser removed and

		direct vision window during climb and cruise	
27/06/08	27 Jun 08	LM ICS cord for replacement	LM ICS cord removed and replaced ground opns check found OK
27/06/08	27 Jun 08	Nr 4 eng for removal and for installation to Nr 2 position of acft 4704	Removal of Nr 4 eng performed
27/06/08	27 Jun 08	Acft for fuel transfer	Fuel transfer performed
28/06/08	28 Jun 08	Several rivets loosen at LH wing station	Several rivets loosen at LH wing station are replaced
29/06/08	29 Jun 08	Nr 4 eng for installation	Nr 4 eng assembly SN: CAE110133
29/06/08	29 Jun 08	Nr 2 prop for removal due to excessive vibration	Nr 2 prop removal performed and replaced with prop SN: 215239
29/06/08	29 Jun 08	Nr 2 eng for change due to damaged on the fourth stage turbine blades/rubbing	Nr 2 eng assembly removed and replaced with eng SN: CAE110133
29/06/08	29 Jun 08	Nr 4 prop removed and install to 4704 Nr 2 position	Nr 4 prop assembly SN: 236094 installed
01/07/08	01 Jul 08	Nr 4 eng for oil, fuel, hydraulic and bleed air leak test	Nr 4 eng oil fuel hydraulic and bleed air leak test performed
01/07/08	01 Jul 08	Nr 2 eng for oil, fuel, hrydraulic and bleed air leak test	Nr 2 eng for oil, fuel, hydraulic and bleed air leak test performed
01/07/08	01 Jul 08	Nr 4 eng hydraulic leak	Nr 4 eng hydraulic press line tightened
01/07/08	01 Jul 08	Nr 4 eng for compressor washing	Nr 4 eng compressor washing performed
01/07/08	01 Jul 08	Nr 4 eng no fuel correction light	Toubleshooting performed Nr 4 eng misc Nr 4 firewall cannon plug pin w loosen fixed and secured, 2 times op'n'l check found ok
01/07/08	01 Jul 08	Nr 2 eng torque for calibration check	Nr 2 eng torque calibration performed
01/07/08	01 Jul 08	Nr 4 eng torque for calibration check	Nr 4 eng torque calibration performed
01/07/08	01 Jul 08	Nr 4 eng above crossover TIT is 850°-860°C no cut-back (normal value of above crossover TIT is 820°± 20°C	Nr 4 eng TD chk performed
02/07/08	02 Jul 08	Nr 4 eng LH upper cowlings six (6) fastener missing	Missing fastener replaced with cam lock & ring
03/07/08	03 Jul 08	Nr 4 eng start TIT is 833°C (Note: Null start TIT is 785°C)	Nr 4 eng TD valve null orifice adjusted to decrees
03/07/08	03 Jul 08	Nr 4 eng start TIT rapidly rises above 830°C with TD valve sw & auto at null start TIT exceeds 810°C	Nr 4 eng TD valve cannon plug inspected tightened and secured
03/07/08	03 Jul 08	Nr 4 eng start TIT rapidly rises above 830°C with TD valve sw & auto at null start TIT exceeds 810°C	Nr 4 eng TD valve cannon plug inspected tightened and secured

03/07/08	03 Jul 08	Nr 4 eng TIT rapidly rises above 840°C during start with tailpipe torching	Nr 4 eng TD valve R/R, fuel nozzle removed, cleaned and re-installed
04/07/08	03 Jul 08	Nr 4 eng TIT rapidly rises with delayed ignition, ign occur at 30% RPM in auto and 28% RPM in null during starting	#4 eng ignition exciter removed and replaced
04/07/08	03 Jul 08	Nr 4 eng fuel continuous dripping even when motored	#4 eng drip valve removed and replaced
04 Jul 08	04 Jul 08	#4 eng start TIT reaches 830oC	#4 eng null orifice adjusted to decrease
04 Jul 08	04 Jul 08	#2 eng won't pitch lock and RPM stable at 100% even throttle is fwd to max. urng gov and pitchlock chk	#2 eng fuel control governor adjusted to increase
04 Jul 08	04 Jul 08	Syncrophaser chk performed but still slave prop won't follow the master	Syncrophaser removed & replaced
04 Jul 08	04 Jul 08	Reverse TQ diff is 1200 in lbs for TQ #1 eng reverse TQ is 4700 lbs, #4 eng reverse TQ is 3700 lbs	#4 propeller reverse adjusting nut adjusted to increase
06 Jul 08	06 Jul 08	#4 eng start TIT is 835oC	#4 eng null orifice adjusted toward decreased position
07 Jul 08	07 Jul 08	Booster suction boost pump sounds metal rubbing when sw is turn to "on" operation (Note: Static press is ok)	Booster suction boost pump removed & replaced
03 Aug 08	03 Aug 08	#3 prop excessive oil	#3 prop removed and replaced
03 Aug 08	03 Aug 08	Nose wheel wobbling during taxi and vibration after take off	Servicing of NLG tire from 48 psi tp 60 psi
03 Aug 08	03 Aug 08	#4 eng start TIT is 835 deg C	TD valve null orifice adjusted to decrease psn
03 Aug 08	03 Aug 08	#4 eng FF is 200PPH higher and TQ is 1000 lbs higher compared to other eng at same TIT setting during T/O	#4 eng TD check performed
03 Aug 08	03 Aug 08	#1 eng belly is wet with hydraulic every after landing	#1 eng hyd press line tightened
03 Aug 08	03 Aug 08	#4 eng gear box oil press is 230 psi on flt	#4 eng RGB oil filter removed and replaced
06 Aug 08	06 Aug 08	#3 prop low oil warning lite illuminate during start	Serviced of hydraulic fluid
06 Aug 08	06 Aug 08	#2 eng gearbox oil press fluctuating more than 20 psi during cruise	#2 eng gear box loose TX R/R
06 Aug 08	06 Aug 08	NLG indicator always indicates UP w/ gear lever down and gears visually check down and lock	Nose UP limit sw removed and replaced
06 Aug 08	06 Aug 08	Severe vibration felt on nose landing gear immediately after the gears reaches UP and lock	All outer and inner NLG bearing removed and replaced
06 Aug 08	06 Aug 08	Vibration felt on #3 prop during start approx 30 – 50 % rpm	Blade angle chk on #3 prop and adjusted Beta sched adjusting nut



		first eng start	
13 Aug 08	13 Aug 08	#4 eng is always high FF and TQ with same TIT on all eng at any throttle settings	TD chk performed
13 Aug 08	13 Aug 08	DME 42 antenna cracked	DME 42 antenna removed and replaced
14 Aug 08	14 Aug 08	#2 engine starter removed	#2 engine removed & installed to #4 engine
15 Aug 08	15 Aug 08	#2 engine & low oil warning light illuminate during flt & gear box oil pressure drops to almost zero	Transcribed 781K
15 Aug 8	15 Aug 08	#4 engine rotation during start	#4 eng pneumatic starter R/R
15 Aug 08	15 Aug 08	P side altimeter dial advanced of 300 ft to actual altitude assign	Transcribed to 781K
15 Aug 08	15 Aug 08	#2 starter for removal	#2 eng pneumatic starter removed and installed to #4 eng
15 Aug 08	15 Aug 08	#2 eng for removal	#2 eng removed due to metal chucks
16 Aug 08	16 Aug 08	#2 eng for installtion	#2 eng #AE110219 installed w/ prop taken fm# eng
17 Aug 08	17 Aug 08	Acft for MOC due to newly installed eng #2	MOC performed chk (see noted disc)
16 Aug 08	17 Aug 08	Visual/Radiographic inspections of outer wing lower surface skin panels (SP-76)	No Discrepancy
16 Aug 08	17 Aug 08	Visual / Eddy current inspection of outer wing panel, surface spanwise fasteners from OWS 160 to OWS 199 (SP-90)	No Discrepancy
16 Aug 08	17 Aug 08	Visual/Radiographic inspections of outer wing lower surface skin panels (SP-76)	No Discrepancy
17 Aug 08	17 Aug 08	Acft for MOC due to newly installed eng #2	MOC performed chk (see noted disc)
18 Aug 08	18 Aug 08	#4 eng RPM fluctuates during start	#2 eng RPM indicator R/R
19 Aug 08	18 Aug 08	Booster accumulator press charge only 700psi	Booster accum serviced 1500 psi

**14 Note: Discrepancies written from Maintenance Logbook**

<u>Discrepancy</u>	<u>Findings</u>
1. Vibration felt in the yoke at 230 knots during descent	Uneven tension of flight control cables of P and CP
2. Elevator trim tab LH	Removed and replaced. <b>(Cannibalized items)</b>

7<sup>th</sup> skill in aircraft technician (APG) and he has no training on the C130 flight controls. SSg Dumagan said that no personnel in the **Wing have a formal training regarding flight controls of the C130 aircraft. His last participation with the said maintenance work when the C130 #4593 had the last PPI wherein he is part of the team that cleaned the flight control cables and greased the flaps and landing gears.**

2. SSg Albaracin reported to the Board and again the Chairman reminds him the purpose of the Board. SSg Albaracin then elaborated that he was then part of the team that works and corrected the discrepancy. SSg Albaracin said with the use of Tension meter they discovered that the cables tension have a big difference with the P and CP side. Their corrective action was they adjusted the turn buckles to even the tension cables of the P and CP. Regarding the Trim Tabs discrepancy they have discovered that the trim tabs hinges were already dilapidated. Since there were no available spare parts **they cannibalized the trim tabs from 0961 and installed at 4593.** The Board then asked SSg Albaracin if he is qualified to do the said job. **SSg Albaracin said that he is not qualified to do the said job however;** he followed the job guide that stated in the maintenance manual. SSg Albaracin was asked by the Board on who authorizes him to do the job he answered that his supervisors authorized him; they were TSg Evangelista and TSg Cordero

3. SSg Michael Lazo reported to the Board and the Chairman. The Chairman said the Board wants to know all the facts especially on the part of the maintenance. The Chairman said that he will be a source person in the investigation and the Board wants to get information that will help the Wing. SSg Lazo said as Flight Engineer, they have experienced the vibration of the aircraft together with MAJ TORRES as his Pilot. They have noticed and felt the vibration coming from the yoke and the #2 Throttle during climb and descent, months before the incident.

Regarding the inspection of the discrepancy concerning the vibration SSg Lazo has no involvement on the said maintenance work; however, he was the Flight Engineer when the aircraft performed FCF of the aircraft. During the FCF there were no problems encountered and no vibration felt. Regarding the discrepancy concerning the elevator trim tab SSg Lazo said that he was the duty Flight Engineer that time and MAJ MADARANG instructed them to check the elevator because of the strange sound heard. **They found out that at center position of the yoke the elevator flap is already 5 degree below the desired position.** They also found out that the LH elevator hinge guide already dilapidated which has a big hole and a crack. That's the time the maintenance personnel rig the said elevator and replaced the trim tab. Again SSg Lazo has no idea on how the maintenance personnel do the rigging and replacement of the trim tab; however, he was aware of the parts that the maintenance personnel have adjusted.

SSg Lazo said if cables were cut out the flight controls possibly will not freeze but rather position of the elevator will be on the last/primary/zero position. He said that there's no possibility that the boost pack will explode, the possibility would only be leak. He said that when one push rod cuts out the other side would be independent, wherein it has no control on the other side. He said that the boost pack has no safety features because it's a piston type.

**SSg Lazo pointed out that as of now we cannot eliminate the idea that the cables were cut out was the cause of the incident because of some questionable circumstances like; what was the exact position of the elevator? What would be the effect of the air towards the elevator? And what was the trim position? He also gave his assessment on what might cause the incident. He said that one factor that can cause the incident was the bleed air explodes with a fuel leak. He also said that the auto pilot was removed from the aircraft before the incident happened.**

4. TSg Evangelista reported to the Board and the Chairman. The Chairman said the Board wants to know all the facts especially on the part of the maintenance. The Chairman said that he will be a resource person in the investigation and the Board wants to get information that will help the Wing in the future.

installed from the aircraft. Regarding the discrepancy about the elevator trim tabs he has no idea since he was on passes that time.

5. TSg Cordero reported to the Board and again Chairman. The Chairman said the Board wants to know all the facts especially on the part of the maintenance. The Chairman said that he will be a resource person in the investigation and the Board wants to get information that will help the Wing in the future.

TSg Cordero was also a supervisor (APG) and he said that his experienced in doing the rigging is during the time of MSg Sampang. He said that the rigging is just like what they were doing in the Nomad aircraft but they don't remove the cables. They just place rig pins from end to end of the cable and check the cable tension. He said that SSg Dumagan has more experience in rigging. However, he has no idea about the rigging of the aircraft 4593.

TSg Cordero participation in the maintenance work was during the cannibalization of the trim tabs from the aircraft 0961 wherein he was the one who removed the trim tabs. They got the trim tabs from 0961 because there were no available spare parts and according to him it's somehow new because it is not exposed to heat and it is located inside the aircraft. They inspected the trim tabs and he said that the hinges were intact. **However, he said that the trim tabs did not go through NDI inspection.** He said that the trim tabs they got from 0961 did not fit at aircraft 4593 maybe because of the design. He also said that their action taken was they reduced or grinded some of the hinges and he thinks that the hinge pins used was the one cannibalized.

TSg Cordero said that TSg Evangelista was the over-all supervisor and that the duty MOD was the one who gave the order to cannibalize the trim tab. He said that his participation during the aircraft 4593 has the SMP at Clark, Pampanga was only during the attachment of the landing gears and fender door cover. He said that he has no idea on the boost pack that explodes at Clark, Pampanga and they only change the aileron boost pack. TSg Cordero has no idea to share or any speculation to give on what had happened during the incident.

#### **c.4) Analysis**

In the calendar year February 19, 2004 the aircraft was accepted by the Asian Aerospace Corporation in compliance to the 24 year SMP 515 Inspection according to and written at Depot Statement of Work. Though the aircraft next PDM if followed is on Calendar Year 2002 the depot Inspection however was change into SMP since the PAF has adapted this Maintenance Philosophy to their C-130 fleet.

The scope of job were all written in Statement of Work wherein the following has been undertaken specially in the documentation, inventory, removals of flight controls and its accessories, and inspection. This has been documented from date inclusive of February 19 to March 3, 2004 in which 129 total man-hours were spent on this early stage of aircraft acceptance in the Depot Facility. All through out in the course of the inspection of detached component within the specified date of 13 April 2004 to 03 November 2004, some reveals significant cracks and suspected cracks which can be found on the list written in Significant Historical Data given by the Asian Aerospace.

On the other side some discrepancies and corresponding action taken, and work document were all accomplish by the Depot Contractor from 14 Feb 2004 up to 27 February 2006. **However there is a confusion of using the Technical Order on the SMP procedures done by Asian Aerospace in which some of the jobs are completed. This might give an overlooked to other important workload that supposed to be done for example on the compliance on structural matters pertaining to the remove and replace condition or the Time Change Schedule of some Flight Controls and Cables.**

Aside from the data on the last SMP the aircraft should had been due for three years SMP by Calendar Year 2009. Meaning there should be a three year inspection that has to be done until 2009 in accordance with the SMP1515C manual. And if satisfactorily followed the six year SMP will be finish by

## D. AIRCRAFT HISTORY

### d.1) History Profile

#### GENERAL INFORMATION

TYPE OF AIRCRAFT:	382E-33C L-100
LOCKHEED SERIAL NUMBER:	4593
USAF SERIAL NUMBER:	71-4593
MANUFACTURER:	LOCKHEED AERONAUTICAL SYSTEM CO. MARIETTA GEORGIA
ENGINE TYPE:	T56 – A – 15
PROPELLER TYPE:	54H60-117/91
DATE MANUFACTURE:	MAY 1971
DATE DELIVER TO PAF:	30 JULY 1983
DATE LAST PDM:	04 APRIL 2006
PLACE LAST PDM:	AAC, CLARK, PAMPANGA
ACFT FOR 3 YEARS INSPECTION (SMP):	04 APRIL 2009
ACFT FOR PDM	04 APRIL 2011
ACFT FOR 6 YEARS INSP (SMP)	04 APRIL 2012
TOTAL AIRCRAFT FLYING TIME:	13, 107.9 HOURS, as of 15 August '08
AIRCRAFT TIME WHEN ACCEPTED BY PAF	5,636.50 HRS

### d.2) Analysis

The aircraft was formerly own by Philippine Aerospace Development Corporation until it was deliver to the Philippine Air Force on 30 July 1983. Since its manufactured in May 1971 by Lockheed Aeronautical System Company up to the time it was receive by Philippine Air Force, the aircraft time is not that old that it accumulated only an hour of 5,636.50. As per record, the aircraft underwent PDM in Taiwan dated 15 July 1981, in Malaysia dated 03 June 1997, and SMP in Asian Aerospace Company, Clark, Pampanga dated 04 April 2006 respectively.

After 3 years of its flying operation to the Philippine Air Force after its SMP, the mishap happened where it accumulated the total of 13,107.9 hours aircraft time. The said aircraft time however did not reach yet its economic service life base on its severity factor and expected to undergo 3 years inspection base on the SMP which the 220<sup>TH</sup> AW embrace its procedure into its maintenance philosophy.

Besides, the aircraft should had been finish its 6 years SMP 04 April 2012 or its PDM on 04 April 2011. Furthermore, no major accident or incident that has been noted on this aircraft history of service.

del Norte. Reportedly, during the period, these armed units are focusing on mass recovery, resource generating through extortion activities to banana plantations, business firms and mining operations in the area. Likewise, said armed group also focus on IPO, and mass organizing works as well as recruitment activities to beef-up their depleting strength. The group also conducted attacks/harassment to banana plantation companies in the area that failed to comply with their extortion demand as well as undermanned AFP/PNP detachments to acquire more firearms thru “agaw armas” activities. Meanwhile, the group also deployed their SOG liquidation team targeting personalities that hampers their activity and movements.

b. Significantly, undetermined number of fully-armed CTs led by CTL Leoncio PITAO @ Comdr PARAGO/AGU/TIGUWANG/TATAY, CO of PBC-1, SMRC strafed/harassed the land guard post of Lapanday Development Corporation (LADECO) located in Sitio Coog, Brgy Mandug, Buhangin District, Davao City on or about 301745H Jul 08. Reportedly, said armed group had carted away two (2) shotguns from the security guards thereat and was able to inflict damage to the property of said company by burning some of its equipment. Afterwhich, the group immediately withdrew towards Brgy Acacia of same district. Allegedly, the group is also eyeing for a possible harassment at TOG-11, PAF since it is very near to the recent attack/harassment conducted by said armed in LADECO.

c. Meanwhile, security had been intensified to different entry and exit points within Davao City. Evidently, Davao City Police Office (DCPO) were also alerted and even conducted road checkpoints as part of the plan for the security preparation for the upcoming yearly celebration of the Kadayawan sa Davao on the 2<sup>nd</sup> week of Aug 08.

d. Further, the CPP/NPA operating in Southern Mindanao Region recently ordered its tactical guerilla fronts to show its support to the MILF by conducting sympathy attacks against the government forces in the area. Accordingly, the CPP voiced full support to the struggle of the Bangsamoro people for national self-determination and return of their ancestral lands. Moreover, the statement also disclosed that all guerilla fronts in the country to conduct intensified tactical offensives against the fascist armed forces as a concrete step to support the resumption of the revolutionary armed struggle of the entire Muslim in Mindanao.

### **Moro Islamic Liberation Front (MILF)**

a. The MILF operating in Davao City is the 112<sup>th</sup> Base Command, under the leadership of Comdr Gerry DAVAO @ GERRY which covers the municipalities of Bansalan, Sta Cruz, Malalag, Malita, Sta Maria, Jose Abad Santos, Don Marcelino, Sulop, Hagonoy, Padada, all of Davao del Sur, Digos City, Toril District and Davao City. Accordingly, said group will not participate on the conflict in Central Maguindanao due to their big respect to Davao City Mayor Rodrigo DUTERTE and Davao del Sur Governor Douglas CAGAS, who chaired the Regional Peace and Order Council (RPOC) in the region. However, there were reported consolidations of forces in Sirawan, Toril District, Davao City and in Pantukan, Compostela Valley Province and in Tarragona, Davao Oriental in which the 111<sup>th</sup> Base Command is based under Comdr Sonny Davao.

b. However, reports disclosed that said MILF groups are on defensive positions in the area and once attack; they will defend themselves as well as their communities.

### **Sectoral Organizations**

During the period, different sectoral organizations to include religious and youth sectors in Davao City and affected areas on the recent conflict in Cotabato and Lanao provinces joined calls for the stoppage on the intensified operations being launched by the government forces against rouge MILF commanders after the failed signing of MOA-AD between the MILF and the government.

Persistent report indicates that the KFRG and the MILF build an alliance to support each other on their respective cause. With the ongoing conflict in Cotabato and Lanao provinces, the KFRG in the area also participates in their fight against the government in support of the MILF in the area. Moreover, reports also indicated that other MILF rebels participate in Kidnap for Ransom activities in the area. Likewise, it is also a way of fund generating of the MILF in Central Maguindanao in support to their ongoing activities in the area.

### **Others**

Two (2) days after the PAF C-130 aircraft accident, an Improvised Explosive Device (IED) was found at the back of Vicente Hizon Elementary School located in Brgy Pampanga, Davao City which was about a kilometer away from TOG-11, PAF on or about 271230H Aug 08. Reportedly, a certain Pepe VALLEROS, around 40 years old and a resident of Phase 8, Doña Asuncion, same brgy found an 81mm mortar with installed wire in it at the vacant lot owned by a certain Bingco REYES, which is just at the back of the said school. Immediately, VALLEROS reported the said IED to Mr REYES who subsequently contacted thru cellphone Sgt Eldie FLORES PAF, assigned with TOG-11, PAF re the said IED. Immediately, EOD teams from 722nd SOS, 710th SPOW, PAF and Sgt Eldie FLORES PAF, EOD of TOG-11, PAF, together with some personnel of TOG-11, PAF rushed to the said area to cordon and verify the said report. Afterwhich, PNP, Sasa, Davao City also arrived in the area. With the approval of COL ISAGANI P SILVA PAF (GSC), Group Commander, TOG-11, PAF to dispose the IED, the EOD team from 722<sup>nd</sup> SOS, 710<sup>th</sup> SPOW, PAF led by Sgt Eldie FLORES PAF, EOD of TOG-11, PAF blasted in place the item by putting a small amount of C-4 explosives to the said IED at around 1430H same day. It is believed that the said recovered IED in intended for the Kadayawan sa Davao Festival. However, with the tight security being implemented and road checkpoint along Brgy Lanang which is 500 meters away from the scene, the perpetrators decided to leave the said IED in the area to avoid being compromised.

4. Based on the above facts, it can be assessed that threat groups in the area has no direct involvement on the said PAF C-130 aircraft accident. However, it cannot be discounted the possibility that the group of CTL Leoncio PITAO @ PARAGO of PBC-2, SMRC planned to attack TOG-11, PAF due to its air power that caused major set backs to major CT operations in the area. Likewise, the MILF operating in Davao area claimed that they will not participate to the ongoing conflict in Central Mindanao.

5. Meanwhile, LTC OLIVER ARTUZ, the Acting U2, EASTMINCOM and other Intel counterparts based in Davao City recently stated that the MILF forces in the area or any lawless elements, particularly the CTs has no possession of SAM weapons or no capability to shot down aircraft like the C-130. Although there were reports possessing thereof but this cannot be proven to be true. They also stated that if said lawless group has the capability, this can already be proven during various air strikes of PAF air assets in the area. They also believed that the cause of said incident is due to nature or human/mechanical problem.

### **\* Other security concern in Davao old Ramp as observe by the Investigation Board**

- The flight line area is vulnerable for enemy attack because of the presence of abandon building of ATO that will serve as harbor point.
- Inspection of passengers and cargoes is not that very extensive, although Canine is provided.
- The open area near the flight line is serve only as lobby area for the passengers and no security lights was observe during night loading and off loading operation
- Loading of cargoes is not organized because some personnel even civilian come close to the crew to ask permission to accommodate personal cargoes.
- Passengers especially at night were not confined in one area but instead they're moving around the perimeter close to the aircraft.
- Aircraft Park at the old ramp can easily be a target area when the enemy is outside the perimeter fence.

## F. WITNESSESS ACOUNT

NAME	AGE	DESCRIPTION	ADDRESS
Noli Adgile	51	Fisherman	Brgy. KM 11
Danilo Mansueto	56	Carpenter	Alcantara Resort, Samal Island
Zenaida San Gabriel Schwengsbier	47	Wife of German National	Seventh Day Adventist, Samal Island
Cita Dillinger Sapper	54	Visitor	Samal Island
Enis Ragudo	74	Resident	Samal Island
Benjamin Ragudo Jr	54		Holy Trinity Vill, Buhangin
Vanessa Ragudo	17	BSED-1 Student	Rizal Memorial College
Jolly Cinco	37	Fisherman	Southbay, Seaside, Brgy Lapulapu
Marivic Fortin Mara	26	Resident	Brgy. 76-A, Purok, Bucana
Darwin Prieto	33	Captain, Tugboat	
Felix Angam		Onboard Tugboat	
Gilbert Gabon	59	Fisherman	Purok 10, Southbay, Seaside, Brgy. Lapulapu
Jose Alegria	73	Fisherman	Southbay, Seaside, Brgy. Lapulapu
Doris Tangente		Resident	Brgy. 76A Purok 12, Bucana
Mario Paloma	47	Boat-maker	Brgy. 76A Purok 12, Bucana
Elizabeth Piala	30	Resident	Purok 12, Bucana
TSg Leotero Antonio		Retired Air Force Personnel	Purok 12, Bucana,

- A. Noli Adgile, 51, a resident of Muslim Village I, Barangay Sasa, Davao City, states that he saw some sort of a huge fire in the sky, which he believed to be an aircraft flying above Davao Gulf. He said that while trying to pull his fishing net out of the waters, he saw the said aircraft diving towards the water like a fireball. He heard a big “bang” after the aircraft hit the water. He said he was about 200 to 300 meters away from the site of impact and that the splash was approximately 15 meters high. Frightened, he then went home immediately. The following day, he reported the incident at the Barangay Hall.
- B. Danilo Mansueto, 56, a carpenter of Alcantara Resort, Samal Island, was inside his home when he heard the big bang like a the sound of a dynamite thrown into the water. He had no idea of what it really was.

aircraft disappear in a cloud then he saw a blaze of light which he thought was lightning, before the aircraft plunged into the sea. He said that when he saw the aircraft pass by, he noticed that its sound was rather strange or unusual, as if there was trouble with the engine (*palyado*). After a few seconds, the aircraft fell like a meteor rock (*bulalakaw*) from the sky.

- E. Marivic Fortin Mara, 33, a resident of Brgy. 76-A, Purok, Bucana was watching TV on the second floor of her house when she heard the sound of an aircraft passing overhead. Noticing how loud the sound was, she thought the aircraft must be flying very low so she ran out to the deck of that same floor and saw red and yellow lights over the sea then she saw something, which she suspected to be the aircraft, plunge into the water with a loud “bang”. Then she saw huge waves rise and she felt the ground shake. She also saw a boat out in the sea, which she even thought was a rescue boat for the aircraft that crashed. It turns out that that tug boat was the one piloted by Darwin Prieto, another witness.
- F. Darwin Prieto, the pilot of a tugboat was going to ferry another pilot to the MV Kalapiana that was already out at sea. He said he did not see or hear the aircraft in the sky because of the fog building up on his windshield due to light rain and the noise of his boat’s engine. Prieto’s companion, Felix Angam advised him to reduce the boat’s speed because it was already dark and they were still looking for the MV Kalapiana. Prieto heeded Angam’s advice and slowed down. Suddenly they both saw something with green and red lights plunge into the water - the red light higher than the green light. Instantly, a huge wave rose at a sustained height in front of their boat. They said they were more or less 300 meters from the position of impact. They further said that had they not reduced the speed of their boat, the aircraft probably would have hit them.
- G. Gilbert Gabon, 59, a fisherman and a resident of Purok Seaside, Brgy. Lapulapu, Davao City, said that he saw the aircraft pass by in the same vicinity, as previously described by Jolly Cinco.
- H. Jose Alegria Sr., 73, also a resident of Southbay, Seaside, Brgy. Lapulapu said that while he was watching TV in his home, he heard the aircraft pass by. Through his window, he saw the aircraft flying southward. He added that he saw the red and green lights of the aircraft. He then confirmed the statement of Cinco and Gabon that aircraft flew over the vicinity of their residence.
- I. Doris Tangente, a resident of 76A Purok 12 Brgy. Bucana, said that she was inside her home when she heard the aircraft pass by as if it was flying very low, so she ran outside to check it. She said that she saw the yellow light of the aircraft. Her position is approximately 2 KM from the house of Mara.
- J. Mario Paloma, 47, a boat maker, also a resident of Purok 12 Brgy. Bucana, said that he was lying down in his home when he heard the loud sound of the aircraft accompanied by a “flapping” sound of metal (like seine). He added that there was light rain at that time.
- K. Elizabeth Piala, 30, another resident of Purok 12 Brgy. Bucana, said that she was inside her home when she heard the loud sound of the aircraft with the same unusual sound heard by Paloma.
- L. TSg Leotero Antonio, a retired Air Force personnel, another resident of Purok 12, Bucana, said that he was also inside his home when he heard the aircraft, which he recognized as a C130. He figured it was flying too low, because of the loud sound. He also confirmed the unusual sound heard by Paloma and Piala. He described the unusual sound to be like that of a motorcycle with a broken muffler.

### **f.1) Analysis**



not be determine for the reason that the pilot and the co-pilot presumed to be struggling to maintain aircraft control because they could not even established a call to the controller.

The investigation could not pin point the actual cause of the accident if this statements could not be proven of any physical evidences that will testify directly to the witnesses' accounts. The area has been sweep up to look for any debris that will support the accounts of the witnesses.

## **V. ASSESSMENT**