

CIVIL AVIATION ACCIDENT
REPORT NO. FMA/AIPB/383

MINISTRY OF AVIATION FEDERAL REPUBLIC
OF NIGERIA

FINAL REPORT ON THE ACCIDENT TO THE
SKY EXECUTIVE AVIATION SERVICES' LET-
410-UVP AIRCRAFT REGISTERED 9Q-CGX
ON THE APPROACH TO CALABAR AIRPORT
ON TUESDAY 21" MAY 2002



FEDERAL MINISTRY OF AVIATION

Accident Investigation & Prevention Bureau

**Federal Secretariat Complex, Shehu Shagari Way, Maitama,
Ref 04/1383/Vol.1.1/129 Date 19th August,2002.**

**The Honourable Minister,
Federal Ministry of Aviation,
Federal Secretariat Complex
Phase 1, Shehu Shagari Way,
Maitama Abuja**

Dear

CIVIL AVIATION ACCIDENT REPORT No.

I have the honour to present the final report on the accident to the Sky Executive Aviation Services; LET-4 10-UVP Aircraft registered 9Q-CGX that crashed on the approach to Calabar Airport, on 21st May, 2002.



Remi Faminu
Ag. Director

Accident Investigation and Prevention

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FINAL REPORT ON THE ACCIDENT TO THE SKY
EXECUTIVE AVIATION SERVICES' LET-410-UVP
AIRCRAFT REGISTERED 9Q-CGX ON CALABAR AIRPORT
APPROACH PATH ON TUESDAY 21st MAY 2002.

Aircraft Data

Type:	-	LET-410 UVP
Registration:	-	9Q-CGX
Serial No.:	-	851402
Year of	-	1985
Manufacturer	-	LET Factory Letecke Zavody AS. Czech Republic
`C of A' validity:	-	20th October, 2002
Airframe Time:	-	8,086 hours +
Owner (Lessor)	-	Eagle Aviation Aman Postal Agency P. O. Box 116398 Jeddah 21391 - Saudi Arabia.
Operator (Lessee)	-	Sky Executive Aviation Services, General Aviation Terminal MMA - Ikeja
Former Registered Owner.	-	A. Goetz City Connexion Airlines B. P. 301, Goma, Democratic Republic of Congo.
Engines:		
Manufacturer	-	Walter Turbines AS.
Model	-	M601 D (8) _No.1 No.2
Serial No.	-	831014 834041
Times Since New	-	3241hrs 3241hrs
Time Since	-	1742hrs 1742hrs
Total Cycles	-	1657 cycles 1493 cycles

Propellers: - Avia Factory
 Model - V508 D/7
 Positions - No. 1 No. 2
 Serial No. - 240661683 610662
 Time Since New - 2686hrs 3005hrs
 Time Since - 591hrs 2,062hr
 Souls-On-Board - 5
 Casualties: - 5

The Technical

Pilot-In-

Name: - Captain Celestine
 Age: - years (26th August,
 Nationality: - Congolese
 Aircraft Ratings: - IC-5.
 - '3,
 - Lockheed-300,
 - T-410
 Total Flying 1,000 Hours +
 Hours on Type: - 500 Hours
 Licence No: - PL #343/T
 Validity of the Licence: - 1st September 2002

1st Officer:

Name: - Captain S. Jean Pierre
 Age: - years (17 July 1950)
 Nationality: - Congolese
 Aircraft Rating: - Boeing Aztec PA-23.
 - '3,
 - '4
 - Cessna 441 - Islander
 - Extra-188-AN 26,
 - T-410
 Total Flying 1000 Hours +
 Hours on Type: - 1000 Hours +
 License Number - L #468/D
 Validity of the licence: - August 2002

Chief Engineer:

Name: - Captain Pierre Buiimhri
 Age: - years (20th August
 Nationality: - Congolese

Licence No. - AMEL 074/2/03
 Validity: - 23 rd May, 2002
 Ratings: - LET-410
 - Fokker F-27
 - DHC-6 Twin Otter
 - Beechcraft EL-200
 - Beechcraft King Air 100
 - Cessna Caravan I
 - Piper Aztec
 - PT6A Engines
 Technician: - Peter Okorokoto
 Nationality - Nigerian
 Cabin Attendant: - Miss Ijeoma Ugwuabu
 Nationality - Nigerian
 Air Traffic Anthony C.
 Date of Birth - 20th February 1960
 Nationality - Nigerian
 License Number - 190
 Ratings - Approach and
 Place of Accident - Akpamsi-lkpaene,
 Uruan Local Govt.Area,
 Akwa-lbom State.
 Geographical - 04°58'32"N
 Coordinates - 008°20'53"E
 Time of Accident - About 1842 hrs UTC.
 Date of Accident - 2st May 2002
 Condition at the Dusk, cloud, Slight

Synopsis

The Accident Investigation and Prevention Bureau AIPB was notified about the missing aeroplane at about 2030 hours UTC on Tuesday night. The Accident Inspectors arrived at Calabar early Wednesday to join the 'search and rescue team'. The wreckage was located at about 1500 hours, on the second day of the accident.

The aircraft was engaged in a passenger flight enroute Abuja - Port Harcourt - Calabar. The Abuja - Port Harcourt segment of the flight was uneventful while the Port Harcourt - Calabar sector was normal until about 35nm to Calabar when the Pilot commenced descent to Flight Level (FL) 25 to position for a straight-in approach on runway 03. About this time, the crew reported to the control tower that they were having electrical problem and therefore declared emergency. The weather report during the aircraft's approach to Calabar was reported to be The flying pilot continued his descent in a desperate **attempt** to sight the field coupled with distractions from the electrical problem he had on board and the bad weather, the pilot descended beyond the Minimum Safe Altitude (MSA) of 2,500ft. The crew continued the descent until the aircraft impacted with a tree of about 60ft and several other trees. The aircraft crashed into the thick swampy forest, killing all the 5-crew members on board. Language incomprehension was a part of these

1.0 FACTUAL INFORMATION

1.1 History of the Flight

On the day of the accident, the aircraft departed Abuja with the call Sign 'SXC 401' enroute Port Harcourt conveying 2 passengers on revenue basis. Before the commencement of the flight, the Chief Engineer was reported to have replaced the "Carbon brush" of the starboard starter generator. The source of this pair of carbon brushes is questionable. This flight was uneventful as the Passengers disembarked and the aircraft picked up fuel for the Port Harcourt. The aircraft departed Port Harcourt at 1750hrs UTC with five souls on board (all crewmembers), estimating Calabar at 1827hrs UTC. At 1800 hrs UTC, the aircraft was in contact with Calabar Tower at 5,000ft, reporting 5 Souls-On-Board and an endurance of 3hrs 30minutes.

The crew also requested for the hourly weather report and the control tower passed the 1700hours weather report as "surface wind 140°/09kts, visibility 10km, slight thunderstorm, cloud base scattered 300m, few CB N-SE 690m broken at 9000m, QNH 1008 and temperature 27°C". The aircraft was also instructed to maintain the 5,000ft level and to expect no delay for the VOR approach to runway 03. At 1809 hrs UTC, the aircraft was at 3.5 nautical miles to the station when the pilot requested for descent clearance and the controller gave him a clearance to 2,500ft and to position for a straight-in approach to runway 03 and the crew acknowledged.

At 1824 hrs UTC, the pilot reported having electrical problem and therefore declared emergency. Thereafter, the pilot requested for increase in the intensity of the approach lights, the controller informed him that the approach lights were, already, at their maximum intensity.

The controller procedurally then requested for the aircraft's altitude but the response of the pilot was "we are coming to Calabar" and at 1830hrs the aircraft reported 16 nautical miles to Calabar. The control tower at 1833 hrs UTC, wanted to establish the position of the aircraft by requesting repeatedly "Your position? Your position?" to which the response was "standby, standby". The verbal query continued until 1842hrs and when there was no response from the aircraft, the controller alerted the airport fire services to be on the standby for further instructions. When the controller could no longer establish contact with the aircraft, he then contacted the relevant agencies for search and rescue operations. Meanwhile, the aircraft on descent had had impact with trees

That night, the tower mobilised the services and assistance from the Nigerian Air Force, the Nigerian Navy and The Police Force. The Bristow Helicopters' assistance was also sought to participate in the search effort on the night of the accident. The search and rescue operations were terminated when it became too dark at night only to be continued the following morning and the site of the accident was not located.

Injuries to	Crew	Passenger	Others
Fatal	5	0	0
Serious	Nil	0	
Minor/Non	=	=	0

1.3 Damage to Aircraft The aircraft was totally destroyed by the tremendous impact force.

1.4. Other Damage There was no damage to any other party.

1.5.0 Personnel Information

1.5.1 The commander of the aircraft was a male, retired Congolese Air Force Squadron Leader (Major equivalent). He was 52 years old Congolese national. The pilot was issued with a Congolese Civil Aviation Airline Transport Pilot Licence No. 343/T, which was to expire on the 22nd September 2002. He had accumulated a total flying experience in the excess of 10,000 flying hours, out of which

1.5.2. The First Officer, male, was a 51-year-old Congolese, with a Congolese issued Commercial Pilot License No.468/D. The licence was valid until the 14th August 2002. The First Officer had accumulated a total flying experience of 5,000 hours out of which 1,000 hours were on type. He had his ratings on Piper Aztec-23, DC-3, DC-4, Britten Norman (BN)-Islanders, Electra-188-AN-26 and LET-410. He was all in second command. He

1.5.3. The Chief Engineer, male, was a 33-year-old Congolese national with a Congolese issued licence

2002. He had his ratings on LET-410, Fokker F-27, DHC-6 Twin Otter, Beechcraft EL-200, Beechcraft King Air 100, Cessna Caravan 1, Piper Aztec P-23 and training on many series of model PT-6A Engines. He too arrived in the country the same manner as the pilots, less than a couple of months before the mishap.

1.5.4. ATC-Duty Controller: The Controller on duty on the day of the accident is a Nigerian male, who was born on the 20th February 1960. He holds an Approach and Aerodrome License Number 190, first issued to him in December 1988. He has a perfect command of English language, but does not speak nor understand

1.6.0 Aircraft Information

The LET-410-UVF aircraft was constructed in the Czechs Republic in the year 1985. It first came to the Nigerian Airspace on technical landing on the 19th June 2001, while Sky Executive Aviation Services served as a ground handler in Nigeria to the then operator-The Air Togo. It was later flown out of the country on 8th August 2001. The aircraft was later imported into the country when its operator sought and obtained permit to operate three LET410 aircraft in Nigeria. The "Certificate of Airworthiness" issued by the State of registry was valid till 20th October 2002. On the 19th January 2002, the aircraft was inspected in Nigeria for airworthiness purpose by the NCAA's Airworthiness Department, when the new operator applied for the Nigerian "Certificate of Airworthiness". On the 20th February 2002, the aircraft was given the clearance to de-register from the Democratic Republic of Congo, if the new owner "so wishes". The aircraft was never deregistered from the Congolese Civil Aviation Register, nor was it re-registered in Nigeria by the NCAA.

The Time Between Overhaul (TBO) for the airframe is every 6 years calendar or at every 4,000 hours flight time or 8,000 cycles. This type of maintenance is called 'D-check' in aviation parlance or may be given a similar nomenclature by other manufacturers, but it is a major maintenance program that cannot be overlooked when the time is due. The engines were to be overhauled at every 1,500 hours including some major components like the fuel control unit (FCU), the fuel pumps etc. The propellers were to be overhauled at every 2,000 hours operating time interval.

For more than 18 months, the aircraft remained on ground in South Africa from December 1999 to 13th June 2001, albeit it was making

flying, at 7590.7 airframe hours. Two of these maintenance inspections were carried out, on the 29th June 2000 and 5th June 2001, when a 1,200hour inspection and a 300-hour inspection were performed respectively. The maintenance company, City Connexion Airlines Maintenance Base, Vereëning Airport, Gauteng, South Africa, held the maintenance documents of those inspections and the corresponding 'Certificates of maintenance' were duly issued at these instances.

Then in August 2001, the aircraft's maintenance responsibilities came under the supervision of Sky Executive Aviation and the maintenance culture changed entirely. SEAS now began another maintenance culture branded 'equalised maintenance', which neither the aircraft manufacturer, nor the Congolese Authority, nor the Nigerian Authority gave approval to Sky Executive for this type of "maintenance schedule". The airplane crashed on the 21st May 2002 at the total airframe time of 8,086 hours.

1.7 Meteorological information The weather report of 1,700 hrs UTC transmitted to the aircraft and that 1,800hrs UTC and 1,830 hrs UTC are as stated below.

<u>QAM (Time)</u>	-	1700 hrs UTC
QAN (Wind)	-	140 ⁰ Magnetic at 09 knots
QBA (Visibility)	-	10km
QBB (Cloud)	-	Cloud base scattered 300m, few CB, N- SE 690m broken at 9000m.
QNY (weather)	-	Slight thunderstorm
QMU (Temperature)	-	27 / 26 ⁰ C.
QNH	-	1008 Hecto-Pascal
<u>QAM (Time)</u>	-	1800 hrs UTC
QAN (Wind)	-	140 ⁰ / 08 knots
QBA (Visibility)	-	10km
QBB (Cloud)	-	Set 300m few 690mCB(N- Broken at 3000m
QNY (weather)	-	Slight thunderstorm
QMU (Temperature)	-	26 / 25 ⁰ C.
QNH	-	1008 HPascal
<u>QAM (Time)</u>	-	1830 hrs UTC
QAN (Wind)	-	140 ⁰ / 06 Knots
QBA (Visibility)	-	10km
QBB (Cloud)	-	Broken cloud base 270m few 690m Cb (S-

QNY (weather)	-	Thunder
<u>Aids to Navigation</u>		
VOR	-	Serviceable
VOR/DME	-	Serviceable
Locator	-	Serviceable
Approach Lights	-	Serviceable

1.9 Communications.

Though the communication equipment on board the aircraft and that of the control Tower were serviceable on the day of the accident, but the communication between the controller and the pilot were not particularly smooth. The communication was hampered, because there was a great deal of static discharge interference, which was, probably, caused by the 'slight thunderstorm' activities forecast for the area on that day. There was, also, the problem of language incomprehensibility between the French speaking crew and the English speaking Air Traffic Controller. There was lack of clarity of intentions expressed by the pilots, because of their limited language of self-expressions.

1.10 Aerodrome Information

Calabar Airport has the elevation of 211 feet above sea level and the runway orientation of 03/21. The VOR/DME approach facilities were working effectively on the day of the accident. There were approach lights and runway edge lights that were also working properly at the time of the accident. The aircraft crashed into a thick swampy forest on the approach to the runway 03. But somehow, impaired visibility necessitated the pilot to be asking for the approach lights' brightness to be intensified. It was not clear from the poorly spoken English language communication of the pilot on the radio, what the crew meant by 'we have big problem. Light, light, light'.

1.11 Flight Recorders

Flight recorders are mandatory for this aircraft in Nigeria, because it was used for public transport and it was approved for 2-man crew, but neither the CVR nor the FDR was fitted in disagreement with the Civil Aviation Regulations.

1.12 Wreckage and impact Information

The aircraft had impact with the first tree in a swampy thick forest and the right wing was severed off instantly. That wing and the undercarriage that was attached to it were both broken away from the rest of the fuselage. The engine on that wing also fell off and got immersed in the swamp, such that

only the tip of the propeller blade was visible above the muddy swamp. The impact of the aircraft with another tree was at 20m further down the flight while the fuselage was compacted from nose cone to the tail cone. Such a speed impact scenario is only comparable with a military high-speed super crash. The wreckage trail was contained within a short distance of : 30metres from the first tree impact point.

1.13 Medical and Pathological Information

The five crewmembers on board were all mortally injured in the unfortunate accident, owing to the subjected tremendous impact and high gravity-forces. This type of impact is not survivable. The bodies were not requested for any medical or pathological examination.

1.14 _Fire There was no fire outbreak despite the catastrophic and the tremendous impact.

1.15 Survival aspects :The accident was not survivable, because of the high-speed impact force.

1.16 Test and Research None.

The terrain is inaccessible to heavy equipment to effect any wreckage, or any part thereof, retrieval for any engineering analysis.

1.17.0 Organisation and management information.

1.17.1 Sky Executive Aviation Services

The Sky Executive Aviation Services has an Air Operator's Permit (AOP) to operate non-scheduled passenger/cargo air services, which is valid till 11th December 2003. But the airline was operating a scheduled 'air services' via Calabar-Abuja-Port Harcourt-Calabar on regular basis. Sky Executive Aviation Services runs its operations out of consonant with many aviation regulations. The company sidelines any law that is inconvenient for its operations. On the 5th November 2001, Sky Executive Aviation Services got an approval to import and operate three (3) LET-410 UVP aircraft in Nigeria. But the airline, for economic reason or other reasons best known to itself, negotiated for the aircraft's acquisition in the Republic of Congo and then cleverly and sneakily avoided the Nigerian Civil Aviation Authority (NCAA) from carrying out the pre-importation inspection before the aircraft was brought into the country.

Secondly, the Sky Executive Aviation Services did not formally present the foreign crew for the procedural validation of their foreign licences before they started flying in the Nigerian airspace. The airline only wrote a letter

to NCAA introducing the crewmembers. The regulations say they must formally regularise their flying documents since they plan to stay and work in Nigeria.

1.17.2 Nigerian Civil Aviation Authority (NCAA)

The NCAA is the authority that supervises the safety operation of all the flying machines and their operators in Nigeria. The Department of Personnel Licensing issues and renews the flying documents of the pilots, aircraft maintenance engineers, cabin crews and a host of aviation related workers. The Airworthiness Department issues and renews 'Airworthiness Certificates'. It also inspects all civil aircraft to operate within the Nigerian airspace and issues them with 'Certificate of Registration'. Once registered in the country, continuous airworthiness of the aircraft is the responsibility of the operator and the supervision of operations is that of the department. These are not the only two departments in the NCAA, but they are the relevant departments to the accident.

1.18.0 Additional Information

1.18.1 The Crash Site

The crash site, is about 12nm from Calabar airport, but the unfavourable terrain did not permit easy accessibility. It was characterised by thick swampy, mangrove forest. In fact, Inspectors of accident and other rescue agencies like, the Nigerian Navy, FAAN, Nigerian Airspace Management Agency (NAMA), Fire Services and some other civil marine specialists had to travel in the Nigerian Navy's motorised boats for about an hour before getting nearer to the site. After disembarking from the boat, rescuers still had to wade through the thick swamp forest for about 200m before reaching the wreckage. From the wreckage and impact information, the aeroplane was shattered into pieces due to high impact forces. The impact information gave an indication that the engines were on power prior to the accident. AIPB found it difficult to retrieve the engines, as it would necessitate the movement of some heavy equipment through the unfavourable terrain. As such, the engines could not be retrieved for possible inspection. Besides, the likely causal factor evidence on the engines might have been destroyed in the corrosive medium by the time they are recovered from below the surface.

1.18.2 Starter/Generator

Starter/generator is a device designed to start the aircraft engine and to generate adequate electrical power supply to the aircraft. The generator equipment operates as a starter-motor to drive the engine during starting and after the engine has reached a self-sustaining speed; the same motor begins to serve as an electric generator motor, which will continue to electrically

power the whole aircraft's needs. The two starter-generators generate 28 volts each and deliver the power output of 5.6KW. In other words, the generator supplies electrical current to the aircraft's system power. The generator Part Number LUN 2132. 01-8 on the No.1 engine had serial number 4672603; while serial number 834041 was mounted on the No.2 engine. As an emergency standby source of power, two Nickel Cadmium batteries of 25Amp-Hour each supply current to the instruments and other essential equipment in case both generators fail. AIPB found out that both the left and right starter/generators had been worked on in the recent times. The port-board generator had its carbon brush replaced on the 10th April 2002, while the starboard generator was removed and inspected when the generator was reported not coming on line on the 20th January 2002.

1. 18.3 The carbon Brush

In a starter motor or an electrical generating set, be it for cars, homes or aeroplanes, they all have armatures and a set of 'carbon brushes'. The carbon brushes are a pair of small blocks made out of carbon graphite composites and are set against the rotating armatures to convert the contacts to electrical charges, which are eventually smoothed out to look like a non-fluctuating electrical current, hence called 'direct current' unlike the house-hold type of current, which is sinusoidal in nature.

The two generators on this aircraft had been having frequent maintenance history since 1998. For instance, the brushes on the No. 1 generator was replaced with a new one on the 6th March 1998. Then on the 29th August 1998, both carbon brushes of the two generators were replaced with new ones. On January 20th 2002, No. 1 generator was logged as "not coming on line", so the SEAS engineers removed the generator and found out that the carbon brush wear was still within limit and therefore blew off the carbon powder deposits and grease the spline. The engine round run was then found satisfactory. Then on the 10th of April 2002, the aircraft engineer of SEAS replaced the No. 1 brushes. Finally on the 21st May 2002, the day of the accident, the chief engineer replaced the starboard generator's brush before departing Abuja.

2.0 ANALYSIS

2.1 Registration of 9Q-CGX in Nigeria

The general information about this aircraft is very scanty. Scanty in the sense that Sky Executive Aviation Services brought the aircraft in without proper documentation and registration in the country. The dishonesty started when the operator secured the permit dated 5th November 2001 to "Import and Operate three LET-410" aircraft with certain conditions: 1. "to allow pre-importation inspection by the NCAA" and 2. "must obtain the Air Operator Certificate". The company acquired the first aircraft without the NCAA's pre-importation inspection as mandated by the aviation regulations.

The Nigeria Civil Aviation Authority (NCAA), on the other hand, could not claim ignorance of the operation of, nor the existence of the aircraft in the country and yet nothing was done to arrest the situation or stop the illegal operation of the company. Besides, the aircraft was operating under foreign registration and with foreign nationals. This could have been normal if the aircraft had not been used for 'hire and reward' as described in the Nigerian Civil Aviation Regulations. Despite these anomalies, the NCAA still gave clearances and permissions, upon which the Nigerian Airspace Management Agency (NAMA) allowed the aircraft to fly within the Nigerian airspace.

Although, someone in the NCAA saw the handwriting on the wall and warned his subordinate officers to "treat any application from this operator with utmost caution and investigate and scrutinise every thing about application and personnel"; that lone voice was that of the Director of Operations. Another warning was, on another occasion, sounded by the same Director "please have nothing to do with these crew. I know nothing about this". Despite the warning, nothing positive was done by the Authority to stop the company from flying in Nigeria, or to ground its operations. It looks as if, co-ordination within the authority is incoherent, because as one department was having nothing to do with the operator, another was granting the same operator with clearances and waivers so that the company's operations could continue. The aircraft was never properly registered in Nigeria and all these are in gross violation of the Civil Aviation Regulations.

2.2 The Aircraft's Maintenance History.

The aircraft was constructed in 1985 and was mandated by the manufacturer to undergo airframe overhaul every 6 years, or at every 4,000 flying hours, or at 8,000 cycles, whichever condition comes first is the due time for this major maintenance. One airframe cycle is, when an aircraft takes off a

runway and then lands at the end of its mission. The prescription of the first 4,000 hours was observed in 1991, when the first owner, the City Connexion Airlines of the Republic of Congo, was operating the aircraft. Based on calendar time of being 12 years old, the second airframe overhaul was due in the year 1997 and this superseded the flight time of 8,000 hours, but the manufacturer did not have the record that this important overhaul was performed, nor was it recorded in the 'aircraft logbook' that it was performed. When the aircraft crashed at 8,086 hours, the airframe overhaul was still not done, the aircraft had, therefore, exceeded the overhaul period by 86 hours without extension granted by any authority.

The last 1,200-hours annual inspection and maintenance of the aircraft was performed at CCA Maintenance Base, South Africa on the 29th June 2000 at the airframe time of 7,590.7 hrs. But the aircraft was not engaged in any flight and was on ground until the 4th June 2001. In compliance with the maintenance manual, a mandatory maintenance of 300hrs inspection was performed on the aircraft so that it could resume flying after a long time of dormancy. A certificate of safety for flight was issued by the CCA Maintenance Base on the 4th June 2001 to expire at a total airframe time of 7839hrs or on the 4th June 2002 whichever was earlier. But the aircraft resumed flight on the 13th June 2001 and crashed at the airframe time of 8,086 hours on the 21st May 2002. The aircraft should have been inspected and another certificate issued at 248 hours before the crash. But this was not done. On the other hand, the necessary inspection and repairs on the starter generator could have been carried out if the operator had adhered to the stipulated annual inspection at the airframe time of 7,839hrs and also at the engine's TBO time of 1500hrs.

2.3 The Power plant.

Walter Turbines of the Czechs Republic manufactured the turbo-prop engines serial numbers 831014 and 834041. The engine manufacturer specified a TBO period of 1,500 hours, for safety maintainability. This instruction also applied to some accessories such as the Fuel Control Unit, the Fuel Pump and others to be overhauled at 1,500 hours. In calendar time, the engines and these components are supposed to be overhauled at 5 calendar years time-limit, whichever comes first. On the achievement of the first 1,500 hours TSN, City Connexion Airline Maintenance Base in South Africa overhauled the No.1 engine serial numbered 831014 on the 6th March 1998 at the prescribed time. The next overhaul period would be 3,000 hours. Incidentally, on the 10th April 2002, the starter/generator carbon brush on the No.1 engine was replaced. But the aircraft crashed when the engine time was 3,241 hours and there was no record of this

second overhaul at the required time of 3,000 hours. The engine's TBO was, therefore, exceeded by 241 hours.

Engine No.2 serial numbered 834041 had the same time since new age of 3,241 hours, same as engine no.1. It, too, suffered the same fate as engine no.1. It was overrun by 241 hours. This practice is never allowed in aviation industry, except permitted by the engine manufacturers, who must certify the extension time allowed.

AIPB contacted the manufacturer, who indicated that no extension of any type was granted on both engines' TBO. If the NCAA had carried out the pre-importation inspection as directed on the letter of the Air Operator Permit, the Authority might have pointed out the airframe and the engines' lapses and would have made the operator aware of the ensuing expenses to be incurred. But the operator thought it was playing smart by avoiding the pre-importation inspection.

2.4 The Propellers

The two propellers were manufactured by Avia, as type V508 D/7 in the Czechs Republic. The serial numbers were 240661683 and 610662725 and they both have the same TBO of 2,000 hours. Propeller No.1 had the time since new (TSN) of 2,686 hours, was overhauled at 2,095 hours and ran for 591 hours since overhaul. The propeller No. 1 must have, therefore, been in good shape and likely to be functioning properly, when the aircraft crashed. Propeller No.2 had the time since new of 3,005 hours and the time since overhaul of 2,062 hours; this propeller had exceeded its TBO by 62 hours, because it should have been overhauled at the prescribed time of 2,000 hours since over hauled.

2.5 Carbon Brush Problems.

IPB gathered the information that earlier on the day of the accident, the Managing Director cancelled the proposed revenue flight to Port Harcourt, because the starter/generator had the problem of the carbon brush on one of the engines. In frustration, he departed for Lagos in search of a new set of brushes, when the unserviceable ones could not be replaced because of lack of parts in stock at Abuja. The information also had it that the MD was already in Lagos trying to locate another carbon brush, when he received the message that the chief engineer of the aircraft had provided a replacement for the carbon brush and the aircraft had, therefore, departed to Port Harcourt.

Out of fear more than suspicion, the MD ordered an employee to enquire by mail, from the point of the departure, how the brush was acquired. A hand written note dated 21st May 2002 was then dispatched from Lagos to Abuja, inquiring if the carbon brushes installed were fairly used ones or seriously used ones. It was also confirmed that this was the

first time ever, that the MD, a professional pilot himself, was not on board the aircraft to, administratively or technically, supervise the activities of the foreign crew.

2.6 Aircraft Handling

AIPB agrees that there were multiple problems of lack of electrical power, the thunderstorm and low cloud base to grapple with; but the major problem was the inability of the crew to communicate the peculiar type of the 'electrical problem' or any other problem to the tower. This inability to fully describe the situation in the cockpit, did not give the AIPB the opportunity to discern and evaluate what type of electrical problem the crew had on that flight, because there was no fire evidence on board the aircraft before impact and also at the crash site. In our belief, the pilots ought to have salvaged the landing at all cost, unless if there was, in addition to the electrical problem, the problem of aircraft's 'instability and uncontrollability'. As catastrophic as the final impact was, AIPB observed at the site that there was no fire outbreak which makes this Bureau to have another contemplation as to the cause of the accident. One possibility might be that the engines flamed out and both stopped delivering power. So, against this conjecture, AIPB conducted a detailed investigation into the possibility of fuel starvation and found out that the crew did up-lift 7,301 litres of Jet-A1 aviation fuel from the point of the last departure and pay twenty-four thousand Naira (=N=24,000.00). The aircraft, therefore, did not run out of fuel before the tremendous impact.

But, even then, if there was an electrical problem in flight, weather problem and communication problems, pilots are trained and re-currently trained, on how to handle these types of emergency problems without jeopardising lives and property. The pilot-in-command of this aircraft was stated to have accumulated a total flying experience of well over 10,000 hours and also had 1,500 hours plus on the type of this aircraft. It, therefore, beats the AIPB hollow, that a pilot of such an experience could not adequately and efficiently curtail this type of emergency procedure and problem. AIPB gathered that the crew, for the first time since their flying in the country, were without the company's MD sitting in as an observer or actually doing the flying himself. The quality and capability of the two pilots left many doubts about their performance as able pilots, who were worthy the salt of the professional accolade accorded them. Maybe, this could be a cogent reason why the managing director was over protecting and shielding the pilots from being examined by the NCAA's Licensing Department. The accident, therefore, may be categorised as poor handling by the operating crew.

2.7 Flight Recorders.

On the 12th May 2002, an Airworthiness Surveyor from the NCAA did perform ramp inspection on the aircraft and certified that having CVR and FDR on tire aircraft was unnecessary. This Airworthiness Surveyor/Inspector, certainly, did not understand what aircraft airworthiness is, nor has he the knowledge of the Nigerian Civil Aviation Regulation nor understands his Authority's Regulations (NCAR) in this respect. As a matter of fact, aircraft under the weight of 5700Kg may not be fitted with the flight recorders, because it is optional in some certain categories of aircraft, for instance, if the aircraft were used in the 'private category'. But the Nigeria Civil (Air Navigation) Regulations (NCAR) 7.1.7 prescribes an exception to this fact. Such weight category of aircraft must be fitted with flight recorders if it is certified to have a 2-man crew, the pilot and the copilot. Secondly, if the aircraft has an approved passenger-seating configuration of more than 9 people and thirdly, if must operate for 'hire and reward' in the public transport category, then it must be installed with both the CVR and the FDR. This aircraft had a passenger-seating configuration of 17 persons, was certificated for a 2-man crew operation and was being used for public transport and yet was not fitted with these recorders before operating in the country. It could have been acceptable and be passed as an oversight, if an airworthiness surveyor had not made such a spurious judgement that it was un-necessary for the aircraft to cant' the recorders. It is better be recommended that those who are to supervise the airworthiness of an aircraft are those who know what an aircraft is and what the regulations say. The problem with the airworthiness Department of the NCAA is that "The low proportion of staff with practical aircraft maintenance experience as licensed engineer or management levels gives rise to some concern. To enable a surveyor to become an effective regulator, surveying aircraft or conducting audits of approved organisations, they require extensive practical experience and take around 4 years in post to mature in the role". This is an expert's observation of the Authority, " the best gamekeeper is a converted poacher," he concludes.

2.8 Technical Logbook

The Nigerian Civil Aviation Regulations 1966, has stated in an unequivocal terns that on the termination of every flight by an aircraft registered in Nigeria, the commander must enter in the technical logbook all the defects that are known to him for repairs. And when the rectification jobs are performed, such repairs must be entered into the logbook and be duly signed by a licensed maintenance aircraft engineer. But to the unexplained experience of the AIPB, most Nigerian pilots and aircraft maintenance engineers, wilfully flout these simple regulations. Pilots fly without

logging the aircraft defects into the technical logbook at the end of their flights. Instead, they prefer to scribble such defects on a piece of paper and covertly hand it over to a maintenance engineer. The engineer will also clear the snag without entering the job into the logbook. For whatever purpose these airlines do this, the unprofessional and the unethical behaviour has criminal tendencies, because the incoming crew will not have an inkling to the defect and what has been done to clear such a defect.

On 9Q-CGX, the replacement of no.2 starter/generator was not recorded in the Technical Log Book as required by standard practice in the Nigerian Civil Aviation Regulations. It is mandatory for airline operators to record any defect and repairs carried out on their aircraft in the Technical log. The Technical log is always to be on board the aircraft. The aircraft departed Abuja for Port Harcourt in the late afternoon carrying 2 passengers and then departed Port Harcourt International airport for Calabar at 6.50-p.m. local time. It was getting pretty dark especially for the en-route weather of slight thunderstorm and low cloud base. These are the contributory factors of the crew's inability to see the runway lights even though 10km visibility was passed to the crew at 7:02 p.m. local time, which adds to the fact that in the East, it would have become dark in the twilight. If the carbon brush did not work properly, of course, there would be no generation of electricity from the generating set. But this cannot happen on the two engines simultaneously like that, and should not have caused the airplane to crash, except the two engines stopped functioning.

2.9 The Operator

To the operator, these regulations (aviation regulations) are blocks in the way, which must be avoided by all means. This manner of the artful dodging of regulations and laws mystified the AIPB and also intimidated some safety officers of the NCAA. The organisation is not run as is required of any safety conscious public transportation operator. The company is of a one-man operation, and as such, most decisions are made at the whim of the Managing Director, who is also a pilot. He stands as the managing director as well as the Chief Executive Officer of the company. During the course of the investigation, AIPB gathered the information that, the Managing Director/Owner of the airline was always on board the aircraft with the crew, whenever the aircraft was operating in any capacity, be it revenue flight or for any other purpose. It is, therefore, ironical that, the only day the supernumerary MD/Owner was not on board the aircraft to supervise the flight was the day the aircraft crashed.

Also, one could not imagine the Managing Director to have taken it upon himself to scout around for an aircraft's spare part. The Managing Director

would have been on board the aircraft to supervise the flight on that day, had it not been that he had to depart Abuja for Lagos to scout for a spare carbon brush, which was required to replace the unserviceable one that disabled the functionality of the starter/generator.

The one-man affair characteristics of this airline has an adverse effect on the effectiveness, efficiency and safety operation reliability required of an airline operator. The AIPB could now, obviously, see the reason why the operator lost two aircraft within eighteen (18) months: Previously in January 2001, the company lost its first L-410-UVP aircraft registered in Sierra Leone as 9L-LCG on the final approach path to Maiduguri International Airport, Maiduguri, Bomo State on the 23^d January 2001. No one was killed in that accident, but the whole hull was lost in the accident.

2.10 The Personnel

Normally, there is nothing wrong for a foreign crew to operate its home country's registered aircraft, but if such personnel are to reside in Nigeria and operate such an aircraft for public transport from point A to point B within Nigeria, the crew's licences must be validated after which the crew must have passed a prescribed examination in line with Nigerian Civil Aviation Regulations. All foreign crew license holders go through this process, but Sky Executive took the law into its own hand and by-passed this procedure. The three members of crew arrived in the country and started to fly approximately 2 months before the airplane crashed. The ensuing questions then were, would the French speaking crew of 9Q-CGX have passed such Regulation Examination in English Language? The answers may be No! Then should they have been allowed to operate in the country? The answer is obviously NO.

Were the crew fatigued because they did not sleep well before resuming duty that day? Some eyewitnesses gave evidence that they saw the crewmembers brushing their teeth by the aircraft side that morning. AIPB did investigate the crew's rest period by visiting their hotel and found out that they were, indeed, lodged in an hotel overnight. So it is on record that they did sleep well before resuming duty in the morning of the day of the accident.

As a matter of safety, no operator would have paired two non-English speaking pilots in a cockpit that operate consistently within an English speaking environment for a good cockpit management resource. If one of the crew did speak fluent English language the problem could have been well conveyed to the tower who could have helped.

Nigeria is within the ECOWAS region, where interaction with French speaking nationals is, sometimes, unavoidable. After all aviation has shrunk the world into one global village, where French speaking peoples and aeroplanes frequent Nigeria on hourly basis. The Honourable Minister of Aviation may wish to let our Air Traffic Controllers absorb some French language while in training.

2.11 The NCAA.

The NCAA claimed that, initially, they were not aware of the importation of the aircraft into the country. But what was their reaction when it became known that the operator had brought in an aircraft behind their back and was operating in the public transport category?

Instead of the regulatory authority to frown and administer a serious penalty as deterrent to others. The Airworthiness Department was cajoling and abetting by blowing hot today and blowing cold the following day by grounding the operator on one day and on the next day issuing letters of recognition and requesting cooperation from NAMA to allow the same company to perform demonstration flights in the country. Such a letter was written to the Nigerian Airspace Management Authority (NAMA) on the 30th November 2001 to "allow demonstration flight by the Sky Executive Aviation Services on its aircraft, which had just arrived in the country". In compliance, NAMA issued an Air Traffic Services circular dated 27th December 2001 that the "NCAA has authorised Sky Executive Aviation Services to undertake Public Flight Operation within the Nigerian airspace using their LET-410 aircraft, registered 9Q-CGX" and that "the airline should be accorded normal services".

The operator exploited this clearance to the fullest until its aircraft crashed on the 21st May.

Moreover, in early April 2002, the Sky Executive Aviation Services wrote a letter to NCAA introducing, but not presenting its new crewmembers. The AIPB found out that the NCAA Director of Operations, in his own reaction, frowned at this letter and advised the General Manager, Personnel Licensing and Training of NCAA to "exercise caution in the treatment of any application from `this operator' ". The NCAA is not coming out with one voice in exerting its authority or regulating the irregularities in the Nigerian Aviation Industry.

2.12 The Initial Approach Path Disaster.

After departure from Port Harcourt, en-route to Calabar to night stop, the aircraft was cleared to Flight Level 50 (5,000 feet) and at time 1809 hours UTC at about 35nm DME, the crew requested for descent and was, accordingly, given clearance to 2,500feet to which the pilot acknowledged at 1810 hours. About 14 minutes later, the pilot reported they had `a big problem

of no electrical'. Few minutes later, the crew started to agitate for increase in the approach light intensity: "put light, put light please MAYDAY! MAYDAY!!" The "MAYDAY" code-word means that there was an imminent danger, which dictated that the aircraft be accorded immediate priority over all other aircraft to landing. To compound the problem, there was language communication gap of not understanding or speaking good English by the crew. When the Controller requested for the aircraft position by saying "your position, your position?" The crew responded, "I told you, I have light. Light, light too much". After the pilots had reported a distance of 16nm to the airfield, the controller then requested for their altitude, the response from the pilots was "we are coming to Calabar; we are coming Calabar...".

The second problem of not seeing the approach lightings is suggesting that the aircraft might have been going through the 'light thunderstorm', which had, earlier-on, been passed onto them at the initial contact with the Control tower. Maybe, the aircraft flew into more than usual light thunderstorm.

Thirdly, there was an actual weather forecast of low cloud base at 270metres, which might have precluded the crew's visibility of sighting both the approach lights and the ground path vegetation below them. This might have contributed to their inadvertently diving into the woods, which was evident as a short-distance wreckage trail of less than 20metres. Diving is a deep descent rather than a shallow one that may be executed over a longer distance. If the aircraft had the electrical problem, there would not be any powerful landing light to penetrate through the cloud to give some indications of sighting the ground. Was there any electrical power to energise the instruments? All these suppositions remained unconfirmed because of the

The three problems highlighted above might have, totally, consumed and diverted the whole attention of the crew from monitoring their instruments while the aircraft was still descending until it descended beyond the Minimum Safe Altitude (MSA) to which it was cleared - the 2,500ft minimum height above the terrain for that sector. The aircraft should have, under all circumstances, remained at this altitude until further let down clearance was given to it by the controller, who was equally worried about no thorough verbal communication from the pilots.

Both pilots were so preoccupied with troubleshooting the, (1.) electrical problem, (2.) looking for the 'light' and (3.) going through the lightning-filled atmospheric cloud. Since the aircraft did not have electrical power supply from the generator, there would be no power for the landing lights, which could have, otherwise, indicated to them that they were in the cloud. Without retrospect, they continued to descend until

they went below the MSA and impacted with the first tree of about 60 feet in height. Whatever be the problem, especially when they could not sight the lights or the runway, they should have kept and maintained the minimum safe height of 2,500 feet that they were assigned to. Unfortunately, the crew's absent-mindedness of not keeping this assigned altitude is the primary cause of the accident. Operationally, pilots must not depart from the altitude to which they are cleared, let alone coming down to land without the magic phrase of "clear to land". This aircraft was not cleared to land because the tower had not received the indication that the crew had sighted the runway on which they intended to land the aeroplane. This is the probable cause of the accident; all other compounding problems are only causal factors.

3 CONCLUSIONS

3.1.0 Findings

- 3.1.1 The aircraft was on a "lease purchase agreement" between the Sky Executive Aviation Services, Nigeria and Eagle Aviation of Saudi Arabia.
- 3.1.2 The Sky Executive Aviation Services (SEAS) obtained an Air Operator's Permit (AOP) to operate non-schedule passenger/cargo air services and is valid until 11th December 2003.
- 3.1.3 The airline got the permit to import and operate LET-410 UVP aircraft in Nigeria on the 5th November 2001 on the condition that the NCAA conducts pre-importation inspection of the aircraft.
- 3.1.4 However, there was no pre-importation inspection by NCAA before the aircraft was brought into the country. That means no proper documentations.
- 3.1.5 On the 30th October 2001, a demonstration flight clearance was given to the aircraft by the NCAA "to enable it determine the airline's capabilities".
- 3.1.6 No record of this demonstration flight could be found in the aircraft logbook in accordance with the Civil Aviation Regulations.
- 3.1.7 On the 27th November 2001, NCAA issued Sky Executive Aviation Services (SEAS) with the "Air Operator's Certificate" (AOC) number AAT/C/020 to expire in 2003.
- 3.1.8 Upon the presentation of the AOC and a letter of recognition issued by the NCAA, Nigeria Airspace Management Agency (MAMA) sent out a signal dated 24th December 2001 that " all normal services be granted to the LET410 aircraft with the call-sign SXC to fly in the Nigerian airspace."
- 3.1.9 On the 18th January 2002, NCAA grounded SEAS' operations for noncompliance with ANR Part 4.2.1.1(a) and also operating below weather minima.
- 3.1.10 On the 20th February 2002, SEAS was given the authority by its Lessor to de-register the aircraft from the Congolese national register "if so wishes". The aircraft was never de-registered until it crashed on the 21st May 2002.
- 3.1.11 The manufacturer of the aircraft had in its record that the airframe's Time Before Overhaul (TBO) of 4000hrs or 8,000cycles

on the aircraft in the year 1991. Another major overhaul was due in 1997, but this airframe overhaul was never performed.

- 3.1.12 The aircraft was not properly maintained as the airframe had exceeded the prescribed annual inspection time by 248hrs as at the crash time.
- 3.1.13 A "certificate of Safety for flight" was issued on the aircraft, which must expire at the airframe time of 7,838.54hrs, or at the calendar time on the 4th June 2002. At the expiration of this airframe and the calendar times, no major maintenance was performed on the aircraft as was necessary.
- 3.1.14 The engines were not maintained in accordance with the standard procedure required for air safety. Both engines had exceeded the overhaul time by 242hrs as at the time of the accident.
- 3.1.15 The "carbon brush" on the starboard starter generator was replaced before the Abuja-Port Harcourt flight was embarked upon. But the Managing Director of the airline reported that he could not confirm the source of the installed carbon brush.
- 3.1.16 No. 2 Propeller had also exceeded the overhaul time by 62hrs at crash time.
- 3.1.17 The crewmembers were foreigners and started operations with the Sky Executive Aviation Services (SEAS) about 2 months earlier before the crash. The pilots started operating without the validation of their licences nor did they have immigration's permit to work in the country. But they had visiting visa.
- 3.1.18 The daily flight Schedule of SEAS is Calabar-Abuja-Port Harcourt Calabar contrary to its Air Operator Permit to carryout a non-scheduled operations.
- 3.1.19 The flight to Calabar continued normally until 35 nautical miles when descent to 2500ft was commenced. It was during this time that the pilot reported having electrical problem and thereby declared emergency.
- 3.1.20 Findings show that there were conversational problem between the controller and the pilots who could not speak much English language.
- 3.1.21 The weather report shows that the aircraft on approach encountered slight thunderstorm and some cloudy conditions.

- 3.1.22 The persistent demand for the increase in the intensity of the approach light indicated that the pilot could not sight the field and thereby continued his descent in an attempt to sight the field, coupled with distractions from the electrical problem and bad weather, the aircraft was descended beyond the Minimum Safe Altitude (MSA) of 2500ft.
- 3.1.23 The descent was inadvertently continued until the aircraft impacted with a tree of about 60ft high and several other trees in a thickswampy mangrove forest near Akpan-Ikpaene, Akwa Ibom State.
- 3.1.24 The main wreckage was located at about 20 metres further down where the aircraft made the final impact with a tree.
- 3.1.25 The accident was not survivable because of the high-speed impact.
- 3.1.26 The aircraft was neither installed with Flight Data Recorder (FDR) nor Cockpit Voice Recorder (CVR) as against the Nigerian Civil Aviation (Air Navigation) Regulations.

3.2 Probable Cause of the Accident

- 3.2.1. The probable cause of the accident was the premature departure of the aeroplane from the normal Minimum Safe Altitude of 2500ft without ATC clearance until it flew into the terrain.
- 3.2.2 The contributory factor was the emergence of electrical problem on the aircraft on the commencement of its approach. The problem might have distracted the attention of the Pilots from having undistorted focus on the instruments.
- 3.2.3 Another contributory factor was the unfavourable weather conditions of low cloud base and thunderstorm, which impaired the visibility at the critical time of the descent.

- 4.0 Safety Recommendations
- 4.1. Pilots should endeavour to equip themselves with en-route and destination weather before embarking on their flight.
 - 4.2. Pilots should adhere strictly to the standard operating procedure by avoiding indiscriminate departure from the Minimum Safe Altitude (MSA). Pilots should also ensure that the laid down procedures are strictly adhered to in case of emergency.
 - 4.3. The Honourable Minister of Aviation may consider it necessary to include French language study in the training curriculum of Student Pilots, Air Traffic Controllers (ATC) and Aircraft Maintenance Students, at the Nigerian College of Aviation Technology (NCAT).
 - 4.4. It is recommended that those who are to inspect aircraft for airworthiness purposes and conducting audits of approved organisations, are those who know what an aircraft is and what "Aviation Regulations" are. *"The best gamekeeper is a converted poacher".*

APPENDICES

Chapter 5.0 - Calabar Tower
Transcript.

TAPE TRANSCRIPT ON SXC 401, LET 410, REGISTRATION
90CGX

Pilot Calabar Tower SXC 402
 Controller SXC 401 go ahead
 SXC 401 go ahead
 Say again

Pilot From DNPO to your station, Airborne 1750

Controller Confirm your level

Pilot FL 050, we have 5 crew without passengers and
 0330

Controller Understand 10 crew confirm, 10 crew confirm

Pilot Five crew

Controller How many pax

Pilot Without pax zero pax

Controller Copy five crew zero pax
 Maintain 050 charlie lima no delay for VOR Approach 03 QNH.
 1008 temperature 27 time Check on the hour, Report TMA, top of Descent

Pilot About the weather is good there Calabar XC 402

1801 Controller 1700 met report surface wind 140/09 visibility
 10 KM slight thunder storm, cloud scattered 300m

270C

Pilot Your position of CB

Controller Ok you are requesting position CB confirm Pilot Affirmative

Controller Then i.e. few CB N-SE 690M

Pilot	Ok thank you
1802 Controller	And you standby for 1800 met
Pilot	Ok I am standing by
1802 Controller	SXC 401 can I have your estimate for Charlie lima
Pilot	Charlie lima 1827
Controller	1827 and what is your TMA Boundary
Pilot	We estimate the TMA boundary 1817,1817
1803 Controller	Roger
1804	SXC 401 copy 1800 met report
Pilot	Go ahead
Controller	Surface wind 140/08 knot visibility 10 KM in slight thunderstorm, scattered at 300m, few Charlie bravo N-SE 690m broken 3000m, ONH 1008, temp 260C
Pilot	and QNH Controller 1008
	Pilot 008 how about your station, is it raining in your station
Controller	Negative, not raining now, negative
1804 Pilot	Thank you
	We are 5NM at this time
Controller	Confirm 5NM
Pilot	Affirmative 40 NM
Pilot	Affirmative 40 NM

Controller	Roger Report top of Descent
1809 Pilot	Welco
1809 Pilot	Calabar XC 402
Controller	go ahead
1809 Pilot	Request Descent
Controller	Descent to 2.500 on QNH
Pilot	25
Controller	2500 on QNH position straight for 03
1810 Pilot	2500ft thank you
1822 Controller	SXC 401 distance SXC 401 Lagos, Calabar 401 how do you read SXC 401 how do you read 1 401 Calabar do you read
1824 Pilot	We have big problem we have no electrical
1824 Controller	Ok you have no electrical confirm
1824 Pilot	We have big problem, we have no electrical
Controller	You have problem with the aircraft confirm
Pilot	Calabar, Calabar xc MAYDAY, we have Big problem, we have no electrical
Controller	Confirm you're declaring MAYDAY?
Pilot	Yes affirm, yes Yes confirm, confirm
Controller	What is your intention, intention?
Pilot	What, no intention (speak French probably

1825	to his colleague)
1825	Calabar we want light, give me light
Controller	You need light confirm
1825 Pilot	Light, Light
Controller	Light are on, the runway lights are on
Pilot	There suppose big light
1825 Controller	It can't be bigger than this, the are on, I can't control from here
Pilot	Said something I cannot read
Controller	xc 401 Calabar
Pilot	Put light, put light please MAYDAY MAYDAY
Controller	Okay, I have told them, I have told them to see if If they can improve the light, I have called the electrical
1826	
	1827 Controller Confirm your passing level and position now
1827	XC 401 your passing level
1828	Xc 401 your passing level
1829	Sxc 401 Calabar
1829	Sxc 401 Calabar
1829	Sxc 401 Calabar
1829	xc 401 Calabar

Controller	Okay copied, copied, your position, your position
Pilot	We are 16 NM, 16
1830 Controller	Sixteen 16 NM Confirm
Pilot	Affirmative 16
Controller	What altitude, what altitude
1831 Pilot	16, we coming to Calabar, we are coming Calabar, Continue, continue
Controller	Say again, say again for Calabar
Pilot	I told you, I have light, light, light, too much
1832 Controller	Okay, I called them for light, I call them for light, they are there, they said they cannot increase more than that,
1832	more than that, that is the last limit of the light. Are you not seeing the Runway. The runway light Is on, can you talk to me.
so that I know how I can help you. What is your present position now Your present position now Pilot	Calabar standby
Controller	Say again
1833 Pilot	Calabar MAYDAY, MAYDAY and other talks at the background
134 Controller	Confirm the light
	What is your position, what is your Position, Request your position
1835	SXC 401 Calabar 401
Calabar SXC 401 Calabar 1836	SXC 401 do you
read SXC 401 Calabar 401 Calabar	
1839	SXC 401 Calabar SXC 401 Calabar SXC 401 Calabar

If you're reading, give position, light on to the last intensity, can we know your position please.