

# **The relevance of Human Performance & Limitations for modern aircrew**

**Nigerian College of Aviation  
Technology Zaria (NCAT)**

**Aviation in itself is not  
inherently dangerous but,  
like the sea, it is  
inordinately unforgiving of  
any carelessness,  
incapacity or neglect**

# In spite of the huge strides in :

- Aircraft manufacture & design
- Aircrew training & selection
- Weather tracking and prediction
- Mechanical reliability
- Systems monitoring equipment
- Communications
- Accuracy & range of navigational equipment
- Cockpit & cabin layout
- ATC expertise and capabilities
- Airfield landing aids, lighting & facilities
- Safety equipment

- **73%** of all aircraft accidents are caused by Human Factors
- This figure has not changed since the 1950's

***In aviation,  
perhaps more than in another  
fields of human endeavour,  
Mankind  
remains as much a victim of himself  
as of  
the elements around him***

# JAA HP&L SYLLABUS

## Physiological

Circulatory system

Oxygen & respiration

Nervous system

Hearing & balance

Eye & vision

Flying & health

Stress

Sleep & fatigue

# JAA HP&L SYLLABUS

## Psychological

Stress

Information Processing

Human error

Behaviour & motivation

Cognition in aviation

Individual differences & interpersonal relationships

Communication & co-operation

Man & Machine

Decision making and risk

Incident reporting

**Although it is possible to categorise an accident under one general heading, other factors are always present which build up the human error chain**

# Stress

**Air Ontario C-FONF Fokker F28**

**Dryden 10.03.89**





# Information Processing

**Air Florida Boeing 737 N62AF Flight 90**

**Washington 13.01.82**





# Information Processing

**Northwest Orient Airlines Boeing 727  
NW6231**

**Stony Point 1.12.74**





Young Boying [1] at Ft. [2] and [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21] [22] [23] [24] [25] [26] [27] [28] [29] [30] [31] [32] [33] [34] [35] [36] [37] [38] [39] [40] [41] [42] [43] [44] [45] [46] [47] [48] [49] [50] [51] [52] [53] [54] [55] [56] [57] [58] [59] [60] [61] [62] [63] [64] [65] [66] [67] [68] [69] [70] [71] [72] [73] [74] [75] [76] [77] [78] [79] [80] [81] [82] [83] [84] [85] [86] [87] [88] [89] [90] [91] [92] [93] [94] [95] [96] [97] [98] [99] [100]

# Information Processing

**United Airlines Flight 173**

**Portland Oregon 28.12.78**

©1983 Sunbird Photos by Don Boyd  
#US8304



AviationPhotoPrints.com



# Information Processing

**British Midland Boeing 737 G-OBME**

**Kegworth 08.01.89**





# Behaviour & Motivation



# Cognition

**Air New Zealand DC-10 Flight 901**

**Mount Erebus 28.11.79**







# Cognition

**Gulf Air A 320-212 Flight 072**

**Bahrain Airport 23.08.2000**



COPYRIGHT MICK BAJGAR

AIRLINERS.NET



# **Sleep & Fatigue**

**Linee Aeree Italiane DC6 Flight 451  
Idlewild Airport 18.12.54**

**US Airforce DC8  
Guantanamo Bay 18.08.93**

# Individual Differences

**KLM 747 & PAN AM 747**

**Tenerife 27.03.77**



Photo Copyright Eduard

AIRLINERS.NET



# Individual Differences

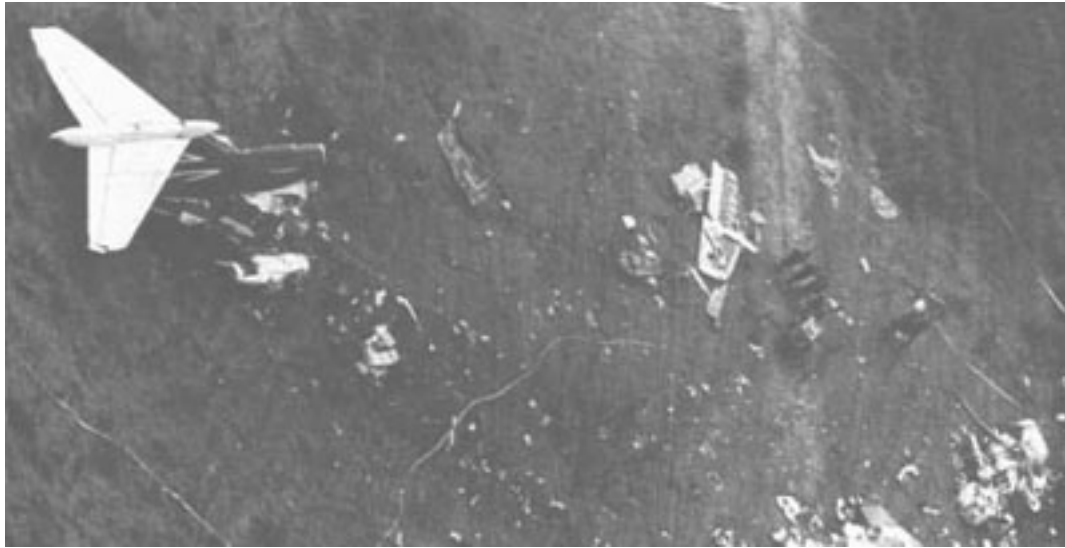
**BEA Trident G-ARPI**

**Staines 18.06.72**



COPYRIGHT MICK BAJGAR

[AIRLINERS.NET](http://AIRLINERS.NET)



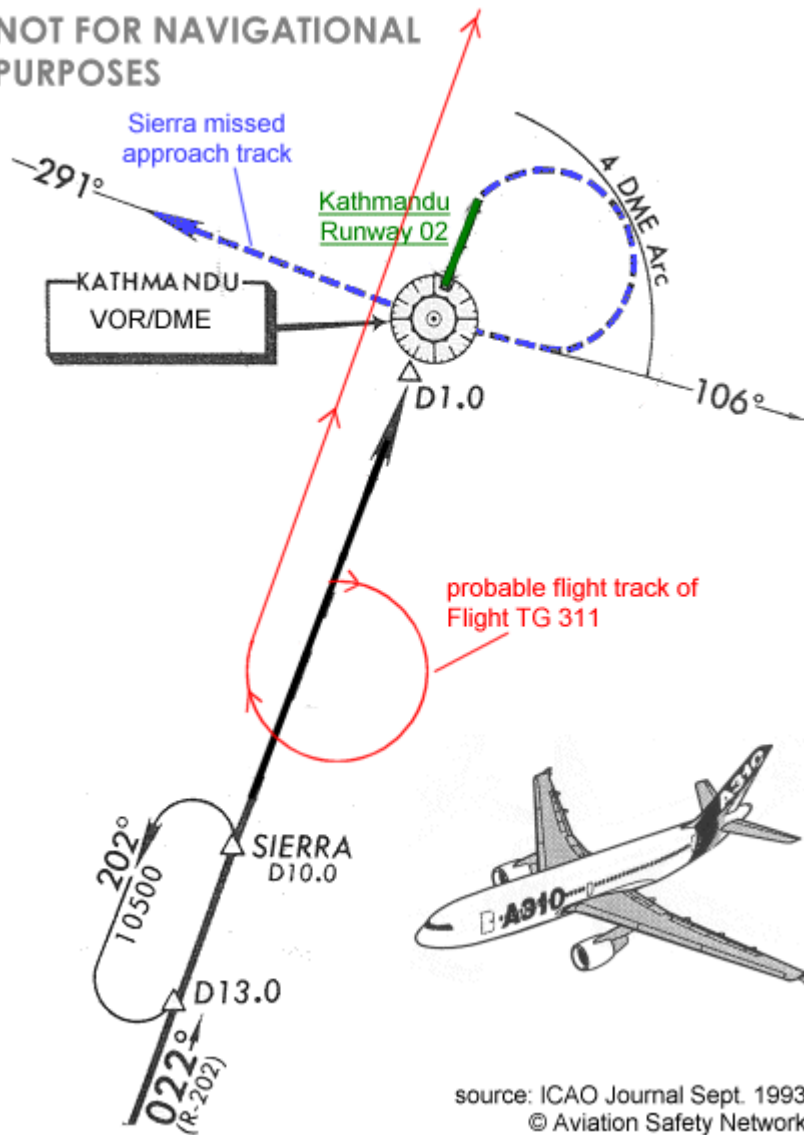
# **Communication and Co-operation**

**Thai Airways A300 Flight TG311**

**Kathmandu 31.07.92**



NOT FOR NAVIGATIONAL  
PURPOSES



source: ICAO Journal Sept. 1993  
© Aviation Safety Network

# **Man & Machine**

**Air France A320 F-GFKC**

**Mulhouse 26.06.88**





# **Decision Making and others !**

**Korea Air Boeing 747 Flight 801**

**Guam International Airport 06.08.97**



Photo Copyright © Frank C. Duarte Jr.

**AIRLINERS.NET**



**Accident databases are littered  
with examples of  
bad decisions and poor  
communication leading to the  
destruction of aircraft and life.  
Perhaps we should be  
asking why it has taken so long  
to introduce HP&L  
into the syllabus rather than  
debating its utility.**