Welcome Message

“Great work will always be done to improve safety and will continue to be achieved for the many generations to come.

No doubt we owe it our clients, our staff and our families to provide the best service and quality. This will be remembered by many people after us.”

Captain Hesham El-Hamahmy
MSc (Aviation Safety),
Uni Newcastle (Australia)
Corporate Safety General Manager

Let’s start!
1. PAS Corporate Overview

2. Helicopter Hazards

3. Operational Hazards

4. Safety Improvements

5. Facility Conditions

6. Recovery Measures

*Final Words*

Thank you for your attention.
Corporate Overview

Established in 1983
Under Egyptian Investment Law
8 Aircraft

Egyptian Joint Stock Company
- Egyptian General Petroleum Corporation (75%)
- Bristow Group (25%) - PAS and Bristow have a Joint venture agreement for search and rescue services

PAS is Egypt’s leading provider of Helicopter Offshore Services

PAS Services

National and International Services
Helicopters and Fixed Wing Aircraft for Oil & Gas Companies, National Projects, Governmental Services.
Recently added the mechanical wash for electric towers and power lines to our operations

- Transport
- Aviation Technical Support / Maintenance
- Charter and Scheduled Airline Services
- Medical / Emergency Evacuations
- Sling Load Operations
Operational Overview

- Helicopters: AW 139, Bell 212, Bell 412, Bell 206, EC 135
- Fixed Wing: Dash 8, CRJ 900

OGP Compliance
- Fully compliant with OGP standards
- High reliability and safety standards
- Experienced offshore pilots
- Emergency standby 24/7

IDEA
- Petroleum Air Services
- 7 Helicopter Bases
- 1 Fixed Wing – CAI Airport

National Companies:
- Gupco (BP)
- PETROBEL (ENI)
- AGIBA (ENI)
- BAPETCO (Shell)
- Burullus (Shell)
- KHALDA (Apache)
- Zeitco (Dana)
- SUCO (Deminex)
- Petrojet
- Gasco
- GPC

Achievements and Customers

- IATA Operational Safety Audit (IATA)
- Third Country Operator (EASA)
- Repetitive Local Authority and Customer Audits – Outstanding results
- International Air Safety Investigator
- Kenyon Emergency Services Platinum Membership

International -- National Companies operating in Egypt such as:
Operations into Hazardous Environments

“If you wish to control the future, study the past.”

Confucius (551 B.C. to 479 B.C.)


**Safety is a TOP Priority**

**UNFORTUNATELY, INCIDENTS AND ACCIDENTS WILL CONTINUE TO HAPPEN**

- Basis for all of our decision-making process
- Encourage an open-reporting to Hazards, to keep system proactive
- Constant review of all our SMS processes and determine methods for optimization to suit every operation

*Sharing Lessons learnt across the industry – Common Goal / Mission*

---

**Why Helicopters**

- Land in any area with Limited Access
- The helicopter’s evolution, into a routine “workhorse”
- Harsh operating environment
- Helicopter Manoeuvrability (Confined area Operation)
- Payloads can be sling loaded quickly

*Alternative Transport Methods*

- Land Transport
- Marine Transport

*Not an efficient means of transport*
Helicopter Hazards

Nature of Helicopter, produces its own hazards...

- Highest Risks with spinning blades, downwash and recirculation of air
- Dust, Projectiles (FOD)
- Static electricity is produced from spinning blades

Minimise by.....

- Loose objects must be secured
- Control of Passengers and Cargo
- Wires must be earthed prior to contact
- Using the appropriate PPEs
- Briefings and Communication

The Safer Option

Helicopter operations are vital

- Perform many tasks efficiently (Medical and Emergency Evacuations, Search and Rescue - immediate response to needs)
- Highest Risk operations (cause many fatalities) – Many case studies and reviews have been done to mitigate the risks
- Logistics Support – Deliver needed materials or medical supplies
- Emergency support – Timely response and direct to Hospitals
- Operations in much Harsher Weather Environments (within the prescribed limits)
Helicopters and Humanitarian Aid

Allows reduced response time during any emergency, ensuring that supplies and personnel are rapidly mobilized to areas that are inaccessible to regular aircraft.

Day and Night under all Weather Conditions

Natural Disasters
Consequences of natural hazards, for example earthquakes, floods, droughts, hurricanes, etc.

Man-made disasters
The result of things going wrong and include blackouts, hazardous material spills, air pollution, etc.

Primary objective - Save lives, provide material and logistic assistance to people in need.

Types of Operations

- Passengers / Cargo
- Medical Evacuation
- Sling Loads
- Search and Rescue

Different types of Operations – Have their Unique Hazards
Areas of Operation

- Prepared Sites
- Unprepared Sites

Differences

- Helipad Layout / Markings
- Helipad Surface
- FATO - Final Approach and Take-off Profiles
- Lighting / Wind Indicators
- Emergency Equipment
- Documented Controls
- Training
Processes in Helicopter Transport

Heliport / Airport
- Flight Planning
- Passenger / Cargo Handling
- Security Checks
- Safety Briefings
- Flight Following

Operation Type
- Passengers / VIP
- Photography
- Sling load
- MEDEVAC

Weather Considerations
- Wind Speeds
- Sea State
- Visibility and Cloud Coverage

Landing Site
- Suitability
- Payload Limits
- Loading / Unloading
- Ground Staff

Processes in Helicopter Transport

Operational Hazards

Time Pressure
Operations outside aircraft limits
Hard landings
Additional stress on flight crew and staff (pre-flight planning and mission preparation are compressed)
Can lead to incomplete planning or inappropriate decisions.

Environmental Factors
Operations take place at night and often in poor weather.
Further pressure to carry out the mission regardless of the environmental and geographic conditions.
Accidents are weather related, with most occurring because of reduced visibility and IMC (en-route phase in mission).
Inaccurate or out of date weather forecasts contribute to the risk.

Controlled Flight Into Terrain
Unstable Approaches / Loss of control
The take-off or landing phases of flight, as well as collision with objects (for example wires and towers).

Communications
Lack of communications due to remote locations and terrain can increase the risk.

Lack of Emergency Services

Technical Difficulties
Limited Maintenance capabilities
Mitigation / Defences

Specific Regulations
Minimum safe operating standards
Risk reduction techniques for specific operations

Technical
Accurate navigation systems
Night Vision Imagery
Enhanced Ground Proximity Warning Systems

Meteorology
Accurate means of observing, recording, and reporting timely local weather conditions, including cloud base and visibility.

Ground Support
Portable Lighting, Passenger control, Fire fighting equipment, etc

Risk Management
Risk assessment must include, but not be limited to, terrain and obstacle awareness, location, aircraft type and type and conditions of operations, pilot fatigue, etc.

Flight Tracking / Following

24/7 Flight Watch
Up-to-date Information
Decision Making Processes

Satellite Communications
Iridium
Phone and Text Messaging

Trend Monitoring
Aircraft Performance and Quality
Live Aircraft Data available

Monitor Routes
Provide alternate routes for safer operations
Safety Improvements

Future improvements in helicopter safety are most likely to be achieved through continuous improvements to:

- Helicopter Design and Crash Survivability by aircraft manufacturers
- Increased use of helicopter onboard monitoring systems such as HUMS and FDM
- Improved maintenance of aircraft
- Influencing human factors that affect the behaviour of flight crew, ground staff, radio operators, logistics staff and others.
- Designing and operating heliports to take full account of operations on an installation.

Facility Conditions

- Restricted Approach / Departure Profiles
- Prior familiarity with Landing Site
- Lack of compliance by heliport owners
- Lack of Security / Passenger Control

Remedy

- Reconnaissance Flights
- Conduct Periodic Inspections
- Suitable Aircraft type for operation
- Limitations set and communicated
- Security measures addressed ahead of operations
Costs of a Inadequate Facility Management

Inadequate Safety can be extremely costly

- Increase in Incidents or possible Accident
  - Injuries, fatalities, property damage
- Loss of Business / Reputation
  - Loss of current or future stakeholders
- Staff Security or Stability
  - Lack of commitment and high turn over

Physical / Surface Characteristics

- Landing Area size / Diameter-Values
- Elevations
- Obstructions
  - Wires / Towers
  - Trees
- Confined Area
- Loose Objects / Dust / Sand
  - Brownout

Remedy
- Operational Limitations
  - Payload
  - Wind limits
- Aircraft type change

Petroleum Air Services
Environmental Characteristics

- High Winds
  - Loose items
- Turbulence
  - Existing Buildings (Hangar/ Terminal/ Structures)
- Lack /Incorrect Weather Reporting

Remedy

- Operational Limitations
  - Payload
  - Wind limits
- Housekeeping
- Automatic Weather Systems

Visual Aids

- Lack /Unclear marking
- Non-standard marking
- Non-standard lights

Remedy

- Standard marking
- Temporary Marking
- Portable lighting Specs
Recovery Measures

- Unfamiliarity with Landing Site
- Inadequate Fire fighting equipment
- Lack of rescue equipment
- No Emergency plan or practised drills

Remedy

- Emergency response drills
- Personnel training and awareness
- Improved design specifications
- Crashworthy and Survivability Issues

Competence / Training

1. Ground Staff Training
2. Passenger / Cargo Handling
3. Heliport and Facility Management Procedures
4. Hazardous Material Awareness
5. Ongoing commitment to Emergency drills

Quicker Turnarounds / Cost Reductions
Final Word......

Requires tremendous planning and management

- Minimise the risks involved with such sensitive operations
- Helicopters are a safe, effective and efficient means of transport
- Facilities are constructed to industry standards
- Sound and Robust SMS – Keep the system live and adding value
- Look outside for global industry best practice
- Assess the risks honestly and openly
- New technologies are introducing safer solutions to operations:
  - Facility Management
  - Helicopters
  - Drones

Petroleum Air Services

Capt Hesham El-Hamahmy
Corporate Safety Manager
Petroleum Air Services
+201001782956
Hesham.Elhamahmy@pas.com.eg

Thank you for your Time