

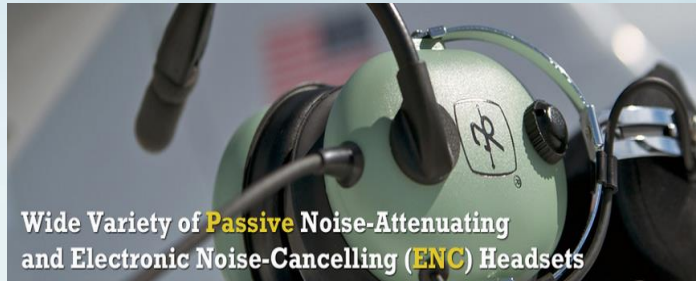
Wireless Communication Systems In the Airport Environment

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Wide Variety of **Passive** Noise-Attenuating and Electronic Noise-Cancelling (**ENC**) Headsets



1941

First Standard Anti-G Suits and Valves



1965

Gemini Pressure Suits, Models G-1C through G-5C



2012

Red Bull Stratos Full Pressure Suit



Improve Crew Safety with Clear Communications



General Aviation



Fire / Rescue



Airline / Airport



Military



Marine



Two-Way



Aerospace



Wireless



Lightning Safety and the airside environment

- A man remained in critical condition on Friday after being struck by lightning the previous night at the Ninoy Aquino International Airport (NAIA) Terminal 3 in Pasay City. A bolt of lightning struck the tail of the plane that was being readied for departure, and at that time, the man was wearing a headset connected to the aircraft's communication system and absorbed the electric shock from the lightning bolt.
 - July 2014
- Two men working on the tarmac at Perth Airport on Wednesday evening were hospitalized after an aircraft was said to be hit by lightning. According to witnesses, one of the ground crew members had plugged a headset into a Virgin Australia aircraft communications panel to talk to the captain when lightning struck the plane, surging through the headphones.
 - November 2014

Home. Safe.



- Every Accident is preventable...



- **The Pearl Gas to Liquids (GTL), is the world's largest GTL plant and one of the world's largest, most complex and challenging energy projects ever commissioned**
 - Despite massive number of workers involved and the complexity of Pearl GTL's construction, a strong safety culture helped break industry records. In 2010, the project achieved **"77 million hours"** worked without a single lost time injury (LTI) and an overall LTI frequency of 0.04 LTI/million man-hours corresponding to about 1/10th of the industry average.

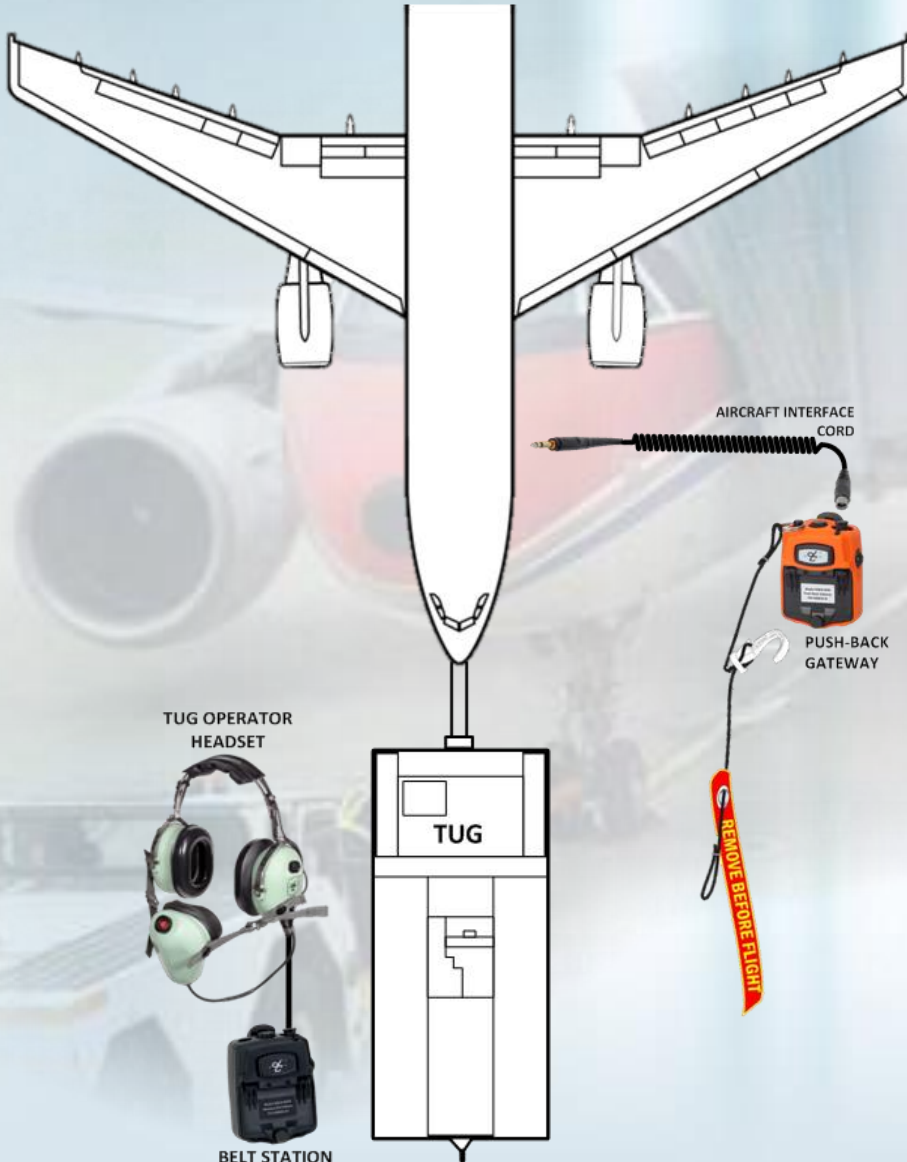
CAAS - LIGHTNING SAFETY HANDBOOK FOR AIRSIDE WORKERS

- 3.2 Measures to be taken by ground handling agents
 - Similarly, ground handlers working on the apron areas prone to lightning strikes are required to play their part by adopting the following safety measures:
 - Provision of vehicles with fully enclosed persons compartments for overhead protection against direct lightning strikes.
 - **Provision of wireless headsets without trailing cables to prevent transfer voltage pick up and induction**



9900 Wireless System

9900 Wireless System Overview



System Characteristics

- Allows Hands-Free Full Duplex Communication Among **ALL** Ground Users (DECT Technology)
 - Push Back Engineer, Wing Walkers, Marshalling Agent
 - Push to talk option to communicate with the cockpit [can be enabled or disabled depending on the desired configuration]
- Voice Prompts and LED Signals Indicating Link and Battery Charge Status
 - Connection established prompt and connection lost prompt, 3 beep alert when approaching the limit of range, and low battery alert



System Characteristics

- Minimum 100 meter line of sight communication
- Absolutely No Cross-Talk with Other Systems in the Vicinity.
- Superior Noise Attenuating and Cancelling Performances.



➤ Keys to optimize system performance

- Fully test system operation prior to use
- Properly position gateway for maximum range and Line-of-Site (LOS) (heavy rain absorbs RF energy and impacts propagation)
- Ensure cable is routed properly
- Adjust VOX sensitivity for optimum activation (eliminate engine noise)
- Turn off power after each use to maximize battery life
- Avoid leaving devices unattended in adverse conditions

Proper Use of System

- ✓ Fully test system operation prior to use
 - Properly position gateway for maximum range and Line-of-Site (LOS) (heavy rain absorbs RF energy and impacts propagation)
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Improper Gateway Positions



Proper Gateway Position



Best gateway position for optimum system performance and Line of Site (LOS)

Proper Use of System

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Improper Cable Routing



Interface Cord Flexed at 90 Degree Bend
at Aircraft Connection



Interface Cord Pinched in Service Panel
Door

Damaged Jack



Strain Relief Boot on PJ-51 Jack

Proper Use of System

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- Adjust VOX sensitivity for optimum activation (eliminate engine noise) Voice Activated Transmission
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VOX Setting



Adjust VOX



Full Counter-Clockwise
Hot Mic VOX



Full Clockwise
Mic Off VOX

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Proper Use of System



Why David Clark?

- David Clark has over 90% marketshare worldwide for ground support pushback operations so the knowledge, the support, and the know how are industry best
 - When you encounter challenges you want a support network you can count on
- Superior Range in the commercial space
 - 100 meter minimum LOS
- World Class market leadership in after sales services
- Local support
 - Repair, warranty, parts supply, pooling
- Incident and Injury Free design with worldwide success



Thank you for your time