



# AERONAUTICA MILITARE 46<sup>A</sup> BRIGATA AEREA



## THE DEVELOPMENT OF ITALIAN AIRLIFT AND AAR CAPABILITY TO OVERCOME MODERN CHALLENGE



*Air Brigade General Alessandro DE LORENZO*



# BIO & BACKGROUND



- ✓ *Air Brigade General Alessandro De Lorenzo was born in Naples in 1969*
- ✓ *Italian Air Force Academy from 1989 to 1993, graduating with a degree Aeronautical Science*
- ✓ *Graduated as military pilot at ENJJPT of Sheppard AFB (Texas – US) in 1994*
- ✓ *Combat Ready on F-104 ASA (All-Weather Defensive Interceptor Role) in 1995 at 9<sup>th</sup> Squadron of 4<sup>th</sup> Wing*
- ✓ *Graduated as Flight Test Pilot at U.S. Naval Test Pilot School of Patuxent River in 2000*
- ✓ *Demo Pilot of G-222, F-104 ASA and C-27J from 2002 to 2006 at Flight Test Squadron*
- ✓ *Commander of 311<sup>th</sup> Flight Test Squadron from 2009 to 2010*
- ✓ *Air Staff from 2011 to 2015 at IV Department «Procurement»*
- ✓ *Commander of the Joint Air Task Force at Herat (AFG) for the ISAF mission from 2011 to 2012*
- ✓ *Commander of the Reparto Sperimentale Volo (Flight Test Wing) from 2015 to 2017*
- ✓ *Secretariat General of Defence / National Armaments Directorate from 2017 to 2019*
- ✓ *Logistic Command of Italian Air Force as Chief of Supports in 2019*
- ✓ *46<sup>th</sup> Air Brigade Commander from 2020*
- ✓ *4500 F/H on more than 60 aircrafts/helicopters*



# AGENDA



*INTRODUCTION TO 46<sup>TH</sup> AIR BRIGADE OF THE ITALIAN AIR FORCE*



*UPDATE ON RECENT PROCUREMENT AND UPGRADES OF ITALIAN AIRLIFT AND AAR PLATFORMS*



*APPRAISING THE C-27J AND C-130 AS A MEANS TO PROVIDE FLEXIBLE TACTICAL CAPABILITY*



*DOMESTIC SUPPORT WITHIN THE COVID-19 OUTBREAK*



*GUIDELINES FOR THE FUTURE: BENEFITING FROM GREATER TRAINING AND STANDARDISATION*



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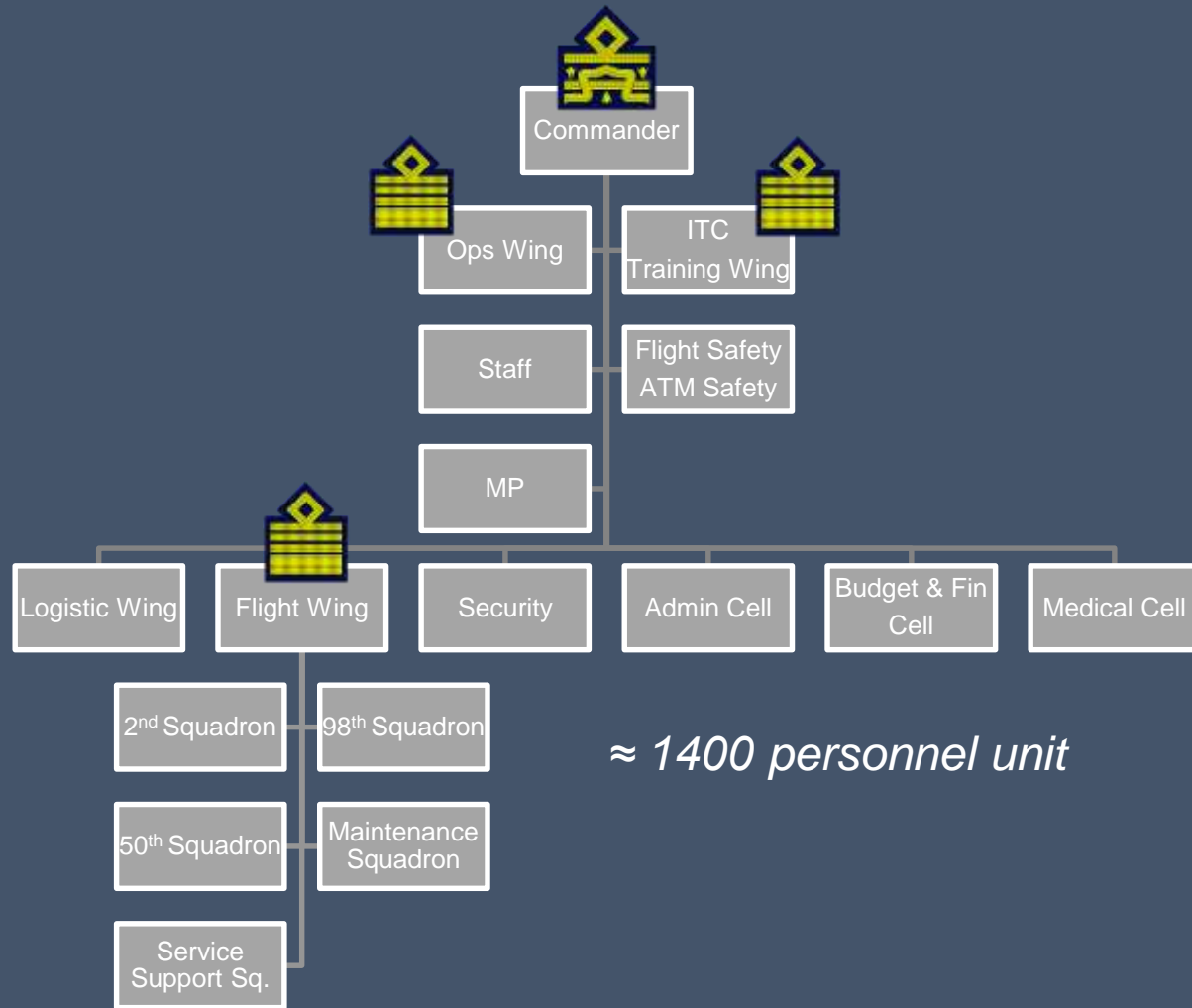
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# 46<sup>TH</sup> AIR BRIGADE GENERAL INFORMATION



46<sup>th</sup> Air Brigade is based in Pisa, Tuscany.



The airport is a "Military Airport" opened to commercial and general traffic.  
ATC services provided by military personnel





# HISTORIC BACKGROUND & MILESTONES



1940



1949

**C-119**  
1954



**C-130H**  
1972



**G-222**  
1977



**C-130J**  
2000



**C-27J**  
2007





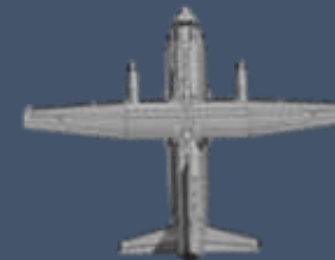
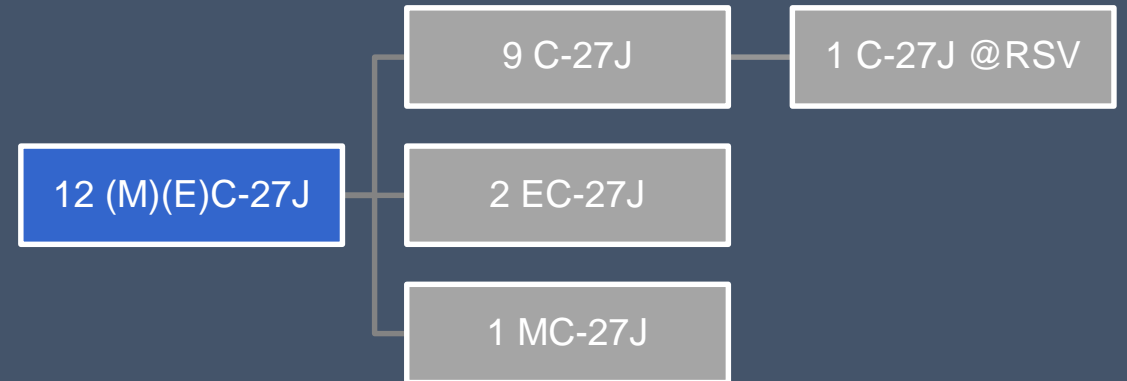
# 46<sup>TH</sup> FLEET CONFIGURATION



## Lockheed Martin C-130J



## Leonardo C-27J





# MISSION



The **women and men of the 46<sup>th</sup> Air Brigade, our most precious resource**, are inspired every day to act according to the founding principles of the Air Force:

- professional excellence,
- respect, exemplarity,
- dedication to service,
- moral integrity.

With two operational assets, the (K) C130J / -30J and C27J, the 46<sup>th</sup> Air Brigade provides:

- Air Transport and Airdrop for both personnel and materials
- Oceanic SAR
- Support for SpecOps and PsyOps
- Electronic Warfare
- Air to Air Refuelling to both Fixed Wing and Helicopters
- Medical transportation, also in Bio-containment

This spectrum of capacities confirms the Air Wing's importance in the Brigade's day-to-day activities.

Air Wing personnel trains constantly following the highest national and international standards in order to ensure our missions to operate wherever the Italian Air Force is required.

The 46<sup>th</sup> also provides training to national and foreign Air crew and technicians throughout the International Training Centre (ITC).





# MISSION CAPABILITIES



## LOGISTIC TRANSPORT

- Non Permissive area
- Non-Combatants Evacuation



## MEDEVAC

- High Bio-Containment



## AAR (KC-130J)

- Fixed Wing
- Helicopters
- ALARP



## REMOTE AIRFIELD OPERATIONS

- Max Effort Ops
- Unprepared Rwy
  - Iced Pack



## AIRDROP

- Personnel Static Line & Free Fall (HALO/HO)
- Heavy & CDS
  - Leaflet
  - JPADS



## ELECTRONIC WARFARE

- C-27J



# VISION 2017 - 2022



***A strong, cohesive, and motivated brigade,  
ever ready to meet the country's needs***





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# (K)C-130J BLOCK UPGRADES



## BU 7.1

- IFF Mode 5
- ADS-B Out
- IRIDIUM SATCOM
- MIDS BU II
- Trial Kit Installation received February 2021
- Fleet embodiment 2021-2023 to meet NATO/EASA mandates

## BU 8.1.2

- Cripto Modernization – 5<sup>th</sup>/6<sup>th</sup> Generation Comm suite
- EGI Modernization
- M-code GPS
- JTRS integration
- TKI planned for 2025
- Fleet embodiment 2026-2028

TK1 BU 7.1

TK1 BU 8.1.2

2021

2023

2025

2026

2028

FLEET EMBODIMENT 7.1  
EASA/NATO MANDATES

FLEET EMBODIMENT 8.1.2



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# C-130J OCEANIC SAR

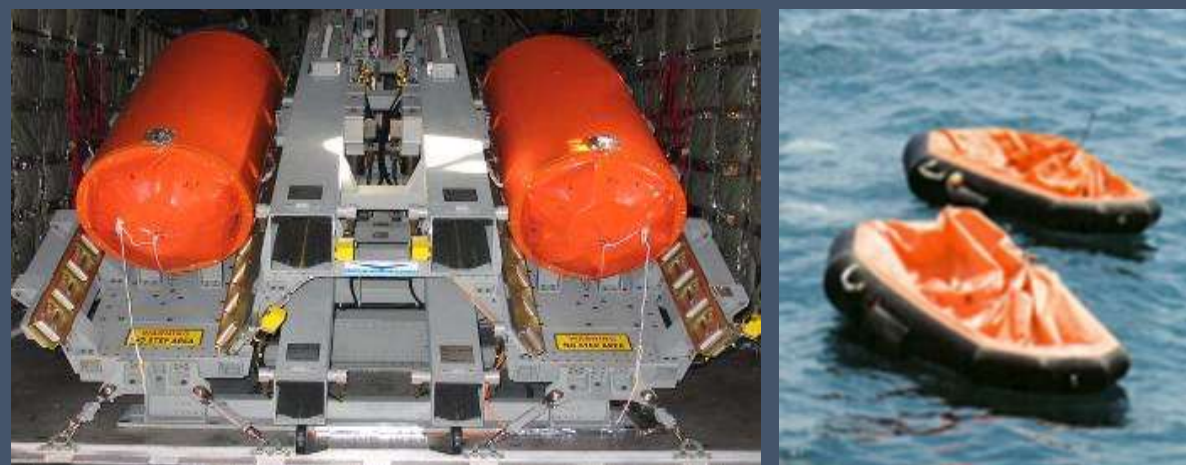


## Oceanic SAR Task & Objectives

- Provide Search & Rescue coverage to Italian Fighter Aircrafts during transoceanic flights in Oceanic Airspace.
- Integrate National SAR services when «out of range» for dedicated assets
- Act as On-Scene Commander

## Oceanic SAR Equipment

- Hook-2 System
  - AN/PRC-112G
  - QuickDraw
- CASPER
- Role Equipment



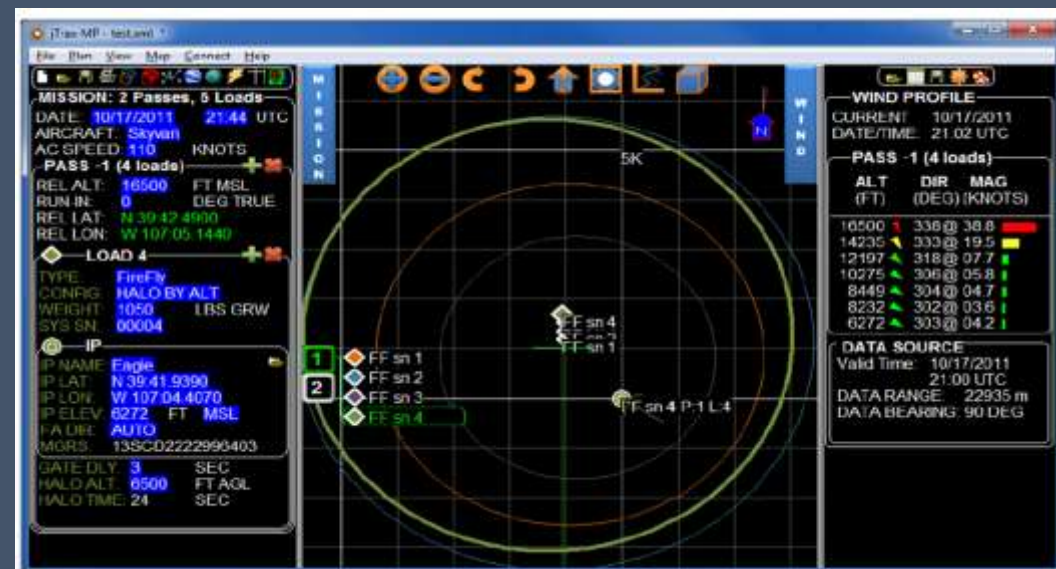


# JPADS



## JPADS Task & Objectives

- Autonomous system capable of carrying loads from 1670 lb to 2370 lb.
- The system operates through a Mission Planner, Remote Control Unit, user interface, and flight algorithm.
- This methodology reduces training times and ensures maximum uptime.
- The aircraft can launch the system from 5000 ft to 24,500 ft AMSL, with increased crew safety.



## JPADS Equipment

- Air Parachute System
  - 2K FireFly (C-130J)
  - MicroFly (C-27J)
- AGU (Autonomous Guidance Unit)
- jTrax-MMS(jTrax Mission Management System)





# SUPPORT FOR ANTARTIC OPERATIONS



## Mission

- Support the Italian research campaign of the National Research Program in Antarctica

## Activity expedition 2019

- 11 flights
  - 151:00 f/h
  - 260 pax
  - 162.190 Lbs
  - 91:00 f/h deploy & redeploy
- » **«intra-theatre»  
New Zealand – Antarctica**

## Activity expedition 2021







# HELICOPTER AIR TO AIR REFUELLING

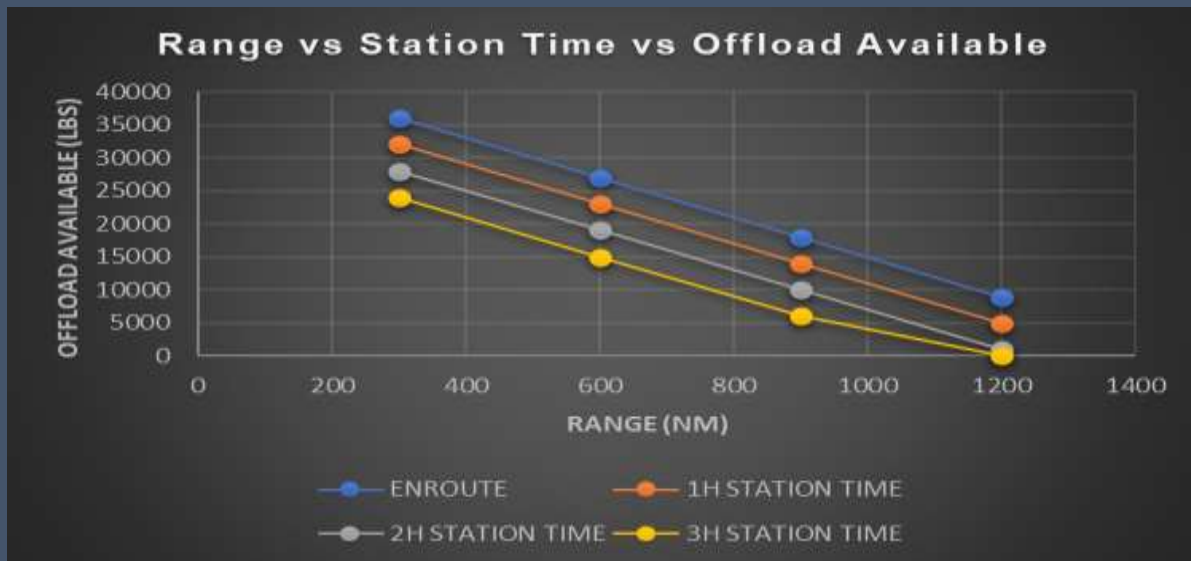


## Capability

- ITAF first in Europe in 20xx to assure HAAR capability
- SpecOps oriented capability

ItaF KC-130J is currently cleared to refuel:

- EC-725 «Caracal» Armée de l'Air et de l'Espace
- HH-101 «Ceasar» Italian Air Force
- HH-60G US Air Force





# AIR LANDED AIRCRAFT REFUELLING POINT (ALARP)



## Air-Delivered Ground Refueling (ADGR)

- Method of providing fuel to aircraft and tactical ground vehicles (TGV) utilizing KC-130J aircraft in austere locations, where no other source of fuel is readily available.
- This method of refueling permits operation of fixed- and rotary-wing aircraft and TGV without the requirement to commit the significant logistical assets necessary to operate expeditionary refueling systems, or tactical airfield fuel dispensing systems.
- ADGR can also quickly re-supply established forward-arming and refueling (FARP) sites, and forward-operating bases (FOB).

## Advantages

- The capability of the KC-130J to operate as a tactical ground refueller enhances tactical operations.







# KABUL EVACUATION – OPERATION AQUILA OMNIA



IN ONLY 15 DAYS 4890 AFGHANS EVACUATED :

- 1301 women
- 1453 children

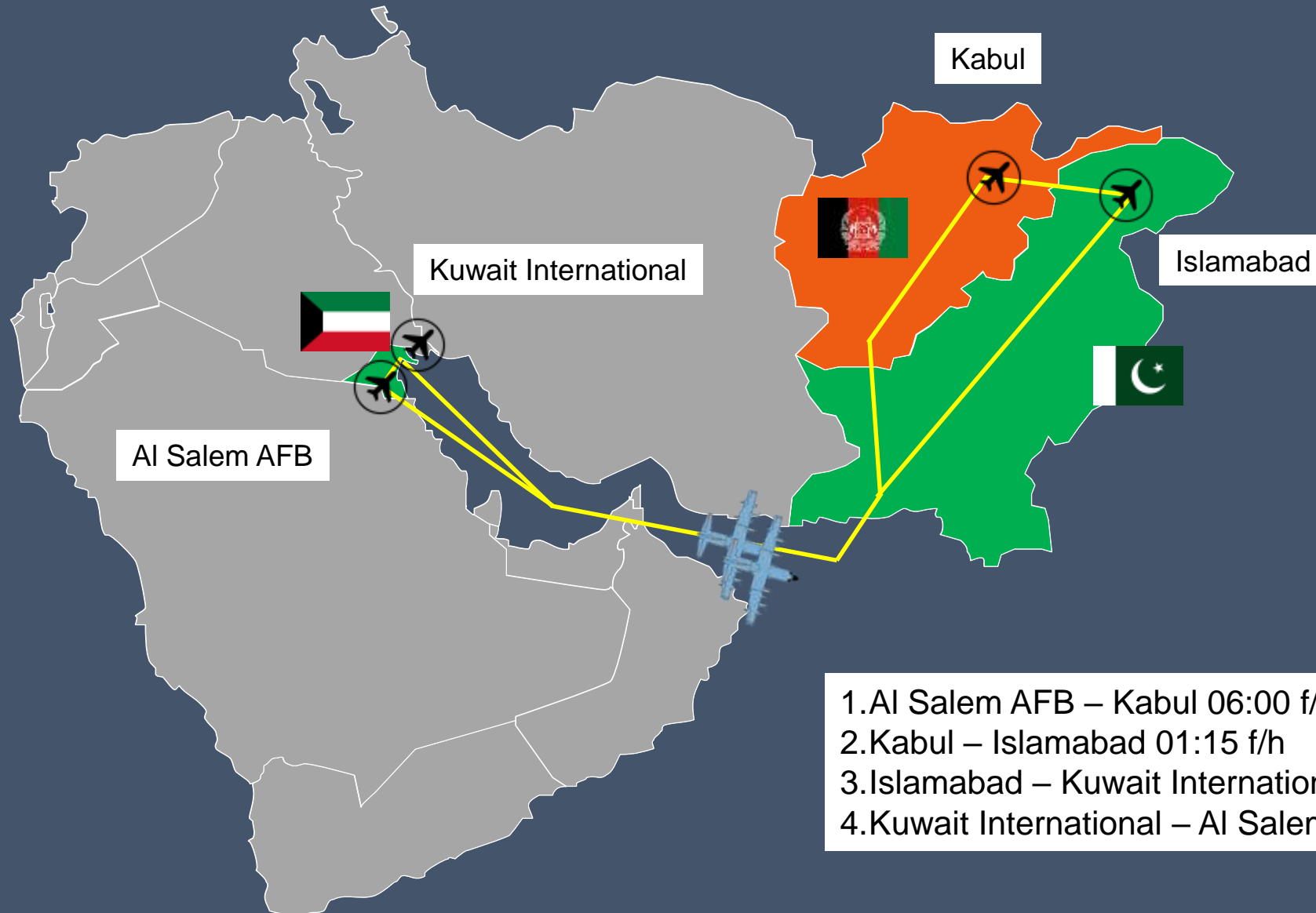
5 C-130J(-30) EMPLOYED:

- 42 Flights
- 128 sorties
- 405 flying hours
- 1.247.850 pounds of payloads





# KABUL EVACUATION – OPERATION AQUILA OMNIA



1. Al Salem AFB – Kabul 06:00 f/h
2. Kabul – Islamabad 01:15 f/h
3. Islamabad – Kuwait International 06:00 f/h
4. Kuwait International – Al Salem AFB 00:15



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# COVID-19 DOMESTIC SUPPORT





# (K)C-130J(-30) BIOCONTAINMENT CONFIGURATION



## C-130J

- Max allowed installation of up to nr. 3 ATI
- Max allowed installation of up to nr. 4 N36/BioBag

## C-130J-30

- Max allowed installation of up to nr. 4 ATI
- Max allowed installation of up to nr. 6 N36/BioBag

## LIMITATIONS

- N36/BIO-BAG/ATI shall be loaded with engines off
- Nr. 3 Loadmasters are required in order to properly assist crew in case of normal and emergency ops
- Minimum of 4 people is required to move the patient in any type of isolator

### ATI

96x34x73 inches

463 pounds

Batteries up to 12 hours

HEPA filter



### N36

78x20x24 inches

88 pounds

Battery up to 10 hours

HEPA filter



### BIOBAG

80x25x18 inches

53 pounds

Battery up to 5 hours

HEPA filter







# COVID-19 FLIGHT ACTIVITY



90 Bio-containment flights

97 flights for transport of vaccine

750 sorties

1200 flight hours

1.985.917 pounds of materials

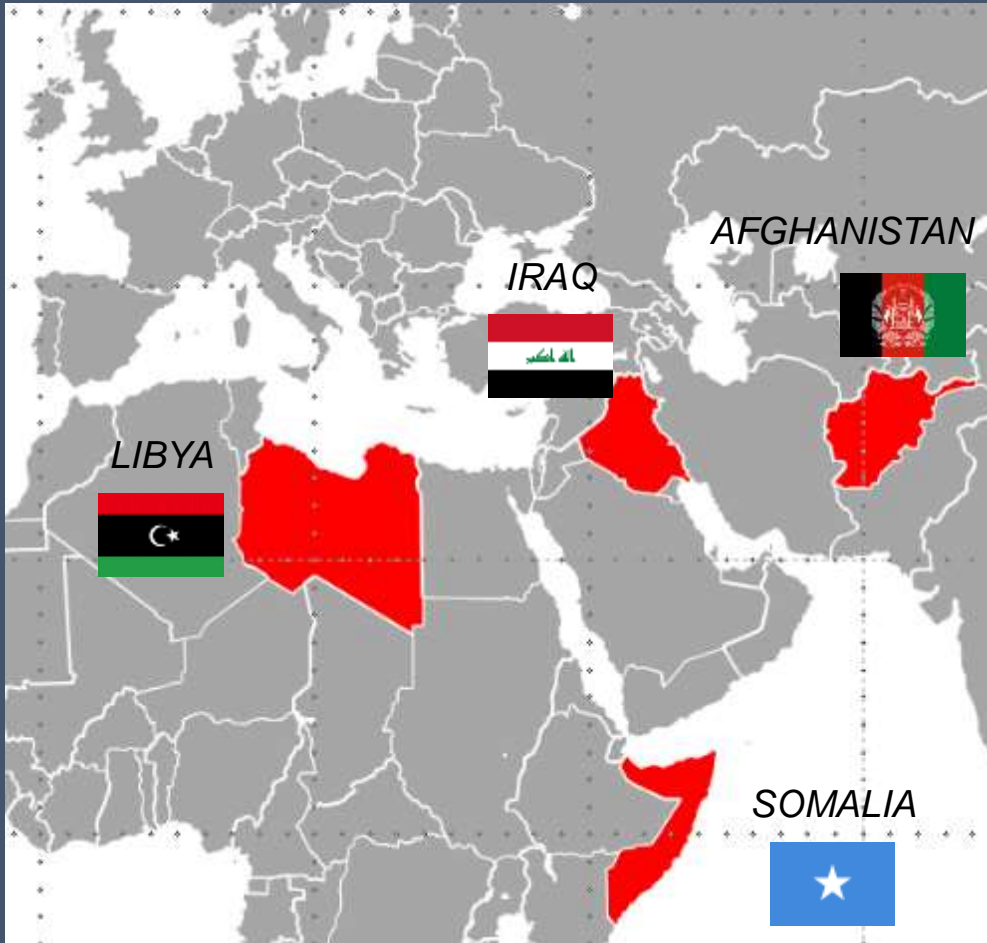




# TACTICAL AIRCRAFT IN COVID-19 FIGHTING



Thanks to the self-protection suite of the aircrafts and the versatility of the carriers, it was possible to transport vaccines and medical evacuation in biocontainment even from/to **non-permissive area and austere locations**.





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# INTERNATIONAL TRAINING CENTRE



(K)C130J – dynamic sim.

(E)C-27J – dynamic sim.

- Flight courses from BASIC to TACTICAL flight
- Training for AAR, Airdrop, EW scenario, SAR Overwater; reproducing emergencies



(K)C130J – static  
no visual –  
training for PILOT  
and  
LOADMASTER

Theoretical training for:

- Co-pilot
- Aircraft Commander
- Instructor Pilot
- Loadmaster





# STANDARDIZATION



National Regulations



EATC & ETAC Regulations

NATIONAL OPERATION MANUAL  
C-130J & C-27J



NATO Regulations & STD

How to practise and to improve/share TTPs and Std: INTERNATIONAL TRAINING & EXERCISE



ETAP-T  
ETAP-C  
ETAP-I  
ETAP-S

AATTC (Advanced Airlift Tactics Training Center)  
U.S.A: 1 week theoretical + 1 week flight



With a Stan Eval section and Tactics section ITC collects all training experiences and evaluates new training programs and improvement for ITALIAN crews end FOREIGN COSTUMER crews





# USER GROUPS



## C-130J JOINT USER GROUP

## C-27J SPARTAN USER GROUP



*Improvement through Collaboration*



# QUESTION TIME

