

**For those airlines operating with temporary freighters, time is running out!  
The Cargo exemption is expiring!  
Get your Full Freighter Conversion without the need of an exemption NOW!**



November 4, 2020

*Innovation since 1976*

*Your Partner in COVID-19 Response*

**Cargo is in demand!**



***A340-600 Full Freighter = Matching Capacity with Demand***

*Patent Pending*



- Most, if not all, **COVID-19** Emergency Passenger to Cargo conversions are based upon temporary “exemptions”

This presentation is about a cargo design based upon a **FULL STC** modification and **does not** rely on any temporary exemptions. It can be used for as long as the Customer Airlines wants

# A340-600 Cabin Cargo Business Case Discussion

Until recently there was optimism that some degree of normalcy to PAX demand would return over the Summer Season and possibly into the Autumn Season as well.

As a result of this optimism toward passenger recovery the only real investments into the cargo business that passenger airlines wanted to make were short-term and low-cost solutions such as strapping cargo to seats or removing seats and strapping hand-loaded cargo to the floor mounted seat tracks. These are not viable long-term solutions, nor were they designed to be. Now airlines are looking for longer term revenue generating solutions in the range of one to three years.

***“Global export orders are rising at a substantial rate, prompting to strong cargo volumes and a rise in demand, the International Air Transport Association (IATA) reported on September 9, 2020.”***

To meet this demand IFC has created both Full Freighter and COMBI designs applicable to B737, B757, B767, B777 and B787 and A32X, A330 and A340 aircraft.

This presentation is for the A340-600 Full Freighter “reversible” design that allows for the carriage of maximum Cargo in the main cabin, can be easily reverted back to PAX for lease return, integrates with existing cargo logistics, meets all airworthiness requirements and is economical.

S&P Global reports that International Load Factors are at 28% in 2020 and it projects Load Factors of 50% in 2021, and 60% in 2022. In 2023, projections are only at 75-80% on these international routes. Convert your aircraft to a Full Freighter

Major commercial airlines have recently indicated that carrying cargo was the only part of their business making any money.

# A340-600 Cabin Cargo Business Case Discussion

The IFC Full Freighter design is a longer term solution unlike the stop-gap hand-loaded solutions that have been used up until now and it is designed to be flexible enough to allow for the easy re-configuration back to a PAX aircraft for continued use or Lease Return purposes or a COMBI with the right balance between PAX and Cargo that can be easily and quickly adjusted up or down to maximize revenue.

The hand-loaded solutions available up until now rob the passenger airline of its core competency and prevents the cargo airline from reaching full potential without massive and time consuming capital investments.

With the IFC Full Freighter design both the passenger airline and the cargo airline can achieve the best results, using all aircraft to their maximum value.

With PAX Load Factors substantially down and cargo rates up, the IFC Full Freighter design offers passenger airlines a method to monetize all that unused capacity and cargo airlines to lease, vs purchase aircraft. After months of research and design combined with planned stringent airworthiness testing, IFC has the best solution that can realize substantial cargo revenue with minimal capital investment.

Like all new initiatives the key is making the business case while also meeting all the airworthiness requirements. PAX airlines are now seeing the severe COVID-19 drop of RPKs/RPMs is a long-term reality. Cargo airlines need capacity now. A viable business plan that involves the right approach to cargo can be the key to success in this new reality.

**Low initial cost + available space + cargo demand + high cargo rates + IFC's design flexibility to reach the "sweet spot" of cargo capacity = profitability for the airline.**

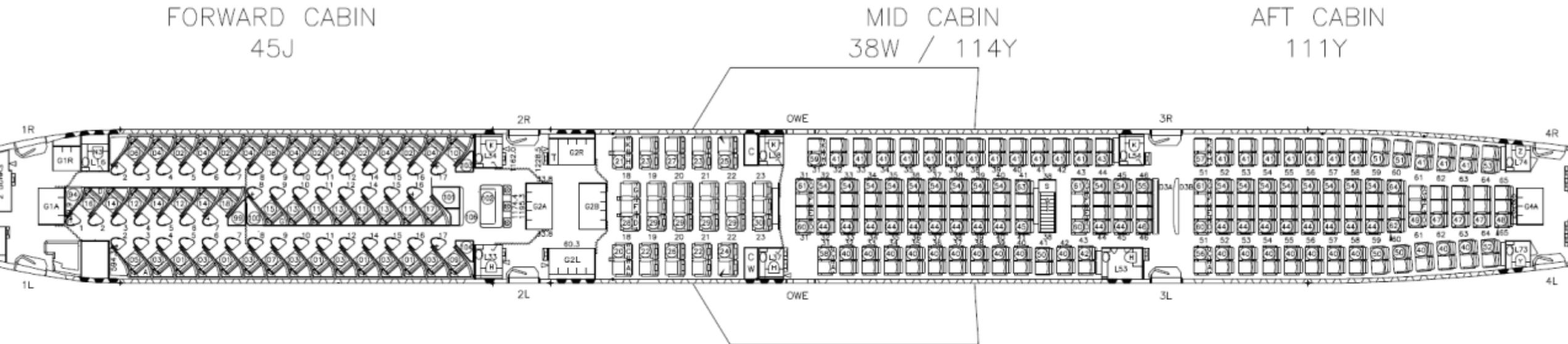
# A340-600 Cargo Conversion



## Straight Forward Conversion: (No special & costly mods)

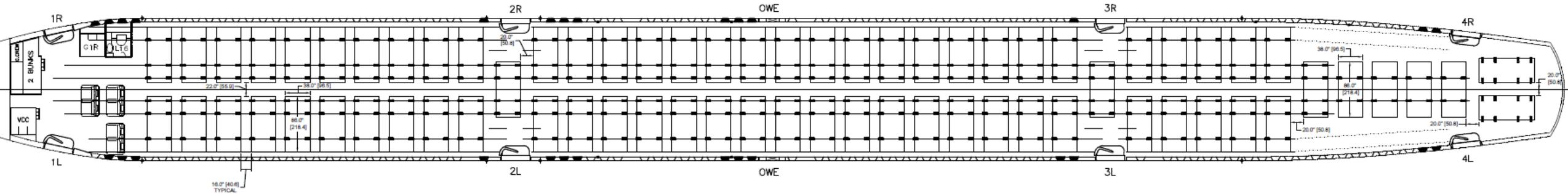
- Use existing fleet or lease surplus passenger aircraft and convert. No need to purchase aircraft because the IFC design is reversible allowing a “lease return” configuration eliminating high capital expenditures.
- No requirement for costly and long lead time cargo conversion mods such as large cargo doors, strengthened floors, smoke detention and fire suppression.
- No long term and costly heavy maintenance visits, return the aircraft and lease another transferring the IFC Kit from one aircraft to the other.
- This IFC design allows for the economical and fast conversion that meet all airworthiness requirements.
  - Remove bag bins and air ducting. (If using the Ceiling Cargo Modules)
  - Install IFC Ceiling Cargo Module structure in place of removed bag bins. (If using the Ceiling Cargo Modules)
  - Install IFC Floor Cargo Module structure in place of removed seats.
  - Install IFC Cargo Smoke Monitoring system

# Typical Existing A340-600 Passenger Configuration



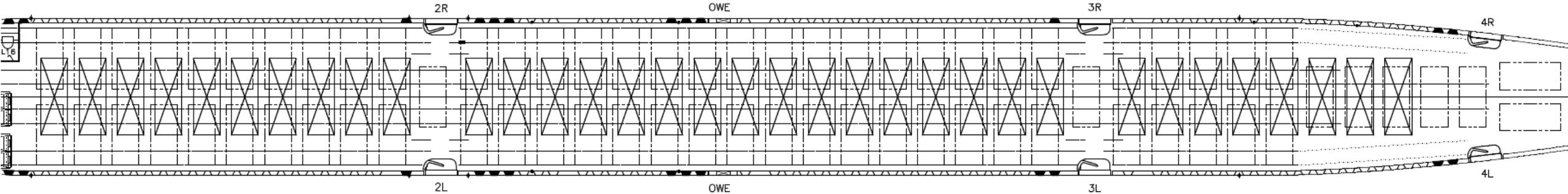
**Typical, A340-600, 3 Class Cabin, 308 PAX Configuration**

# Cabin Cargo Module Configuration



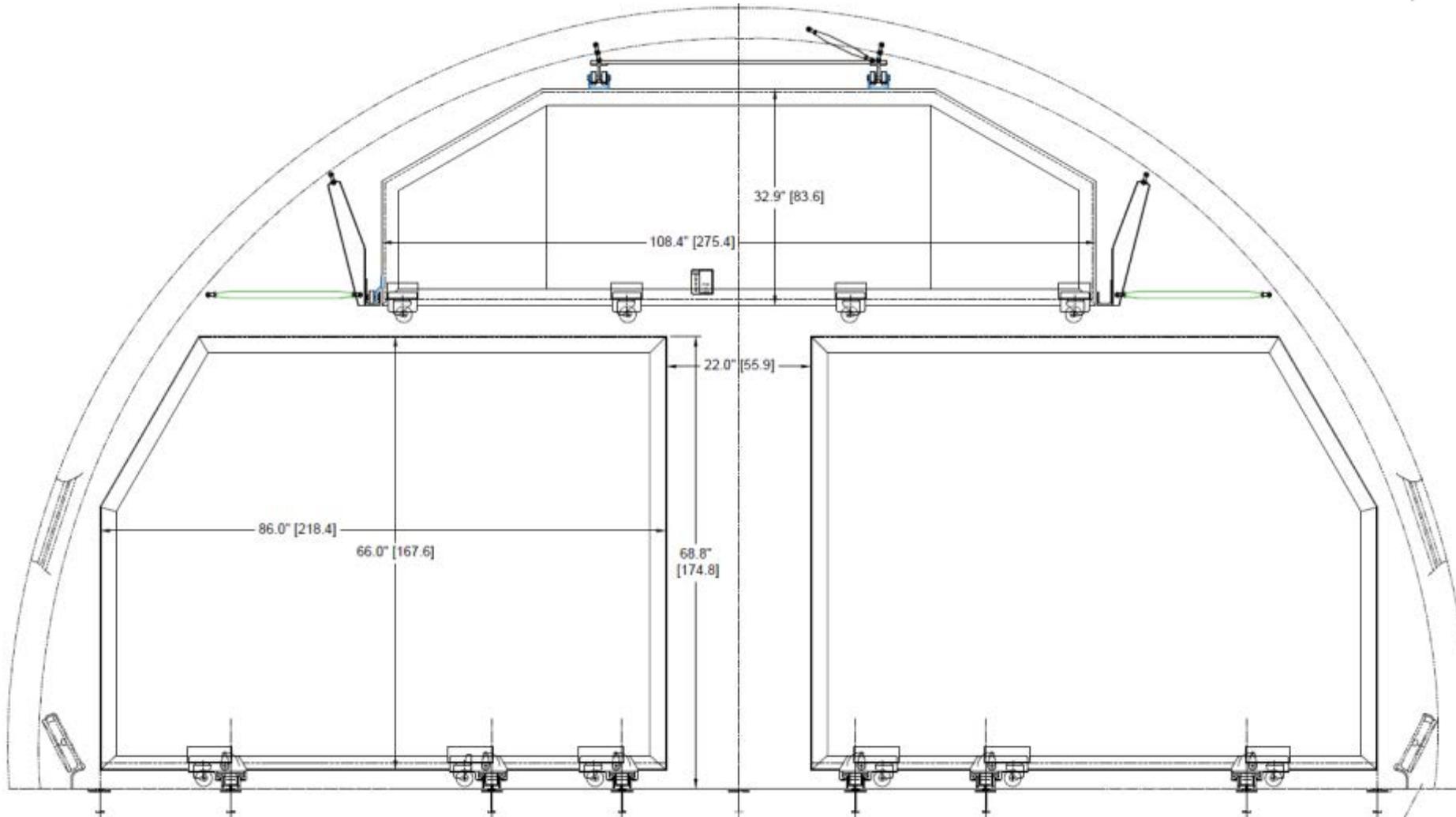
**A340-600, Cargo Module Configuration**  
**62 ea. Outboard Cargo Modules**  
**9 ea. Center Cargo Modules**

# Cabin Cargo Module Configuration



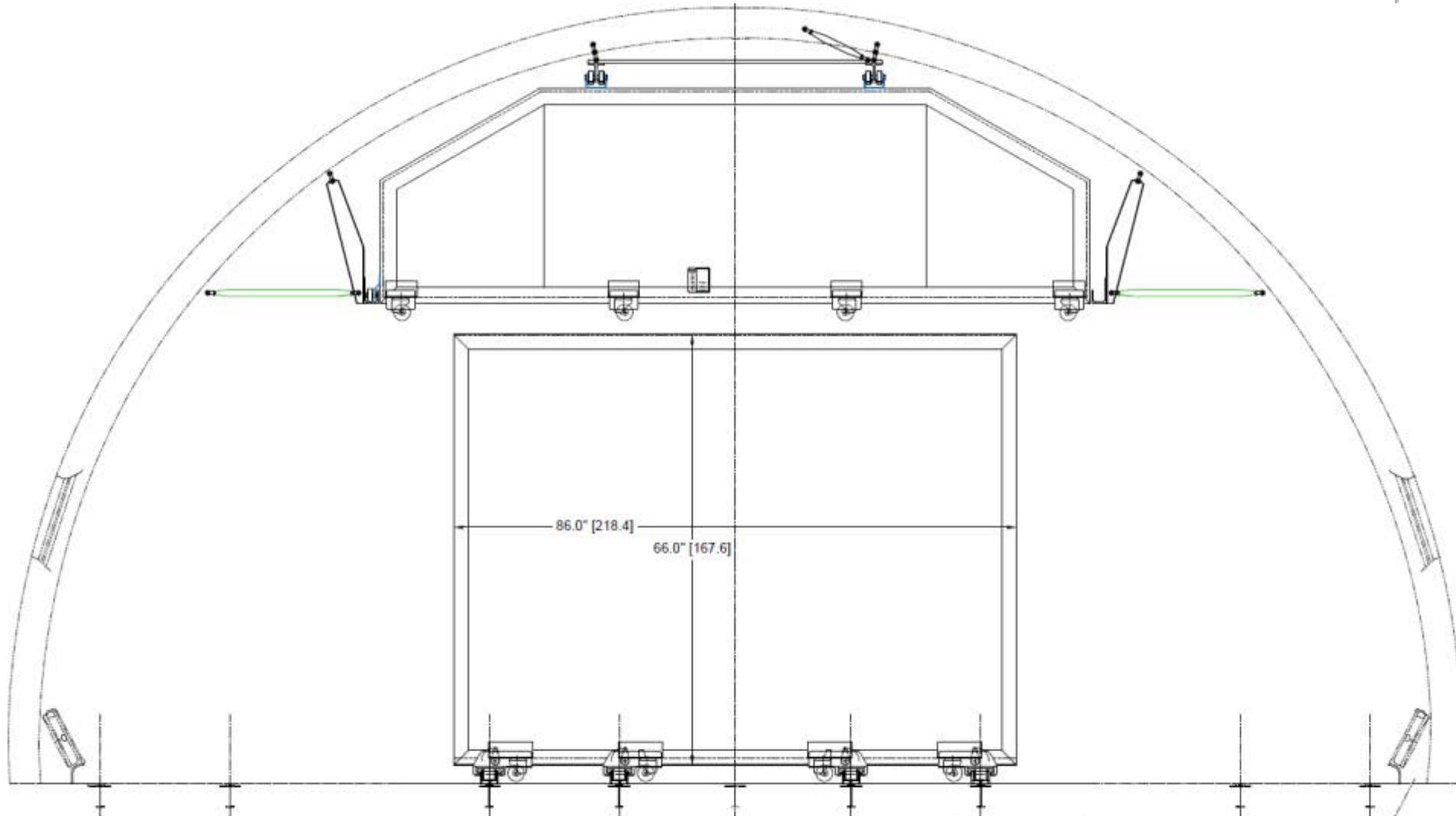
**A340-600, Cargo Module Configuration**  
**34 ea. Ceiling Cargo Modules**

# Cabin Cargo Module Configuration



**A340-600, Cargo Module Configuration**  
**Outboard Cargo Modules Shown, with Ceiling Cargo Module**

# Cabin Cargo Module Configuration



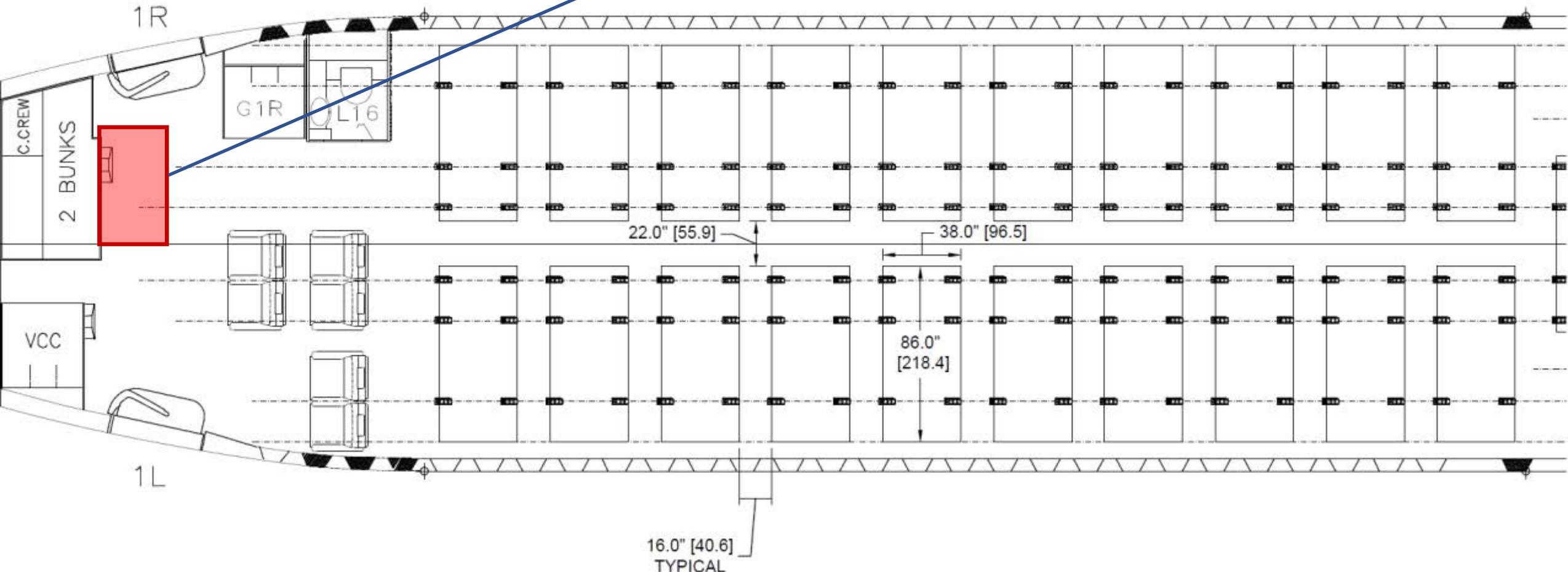
**A340-600, Cargo Module Configuration**

**Center Cargo Modules Shown, with Ceiling Cargo Module**

# Cabin Cargo Module Configuration

- Fwd Cabin has been provisioned for:
  - 6ea. Premium Economy Seats
  - Lavatory & Galley Retained
  - Fire Marshal Station

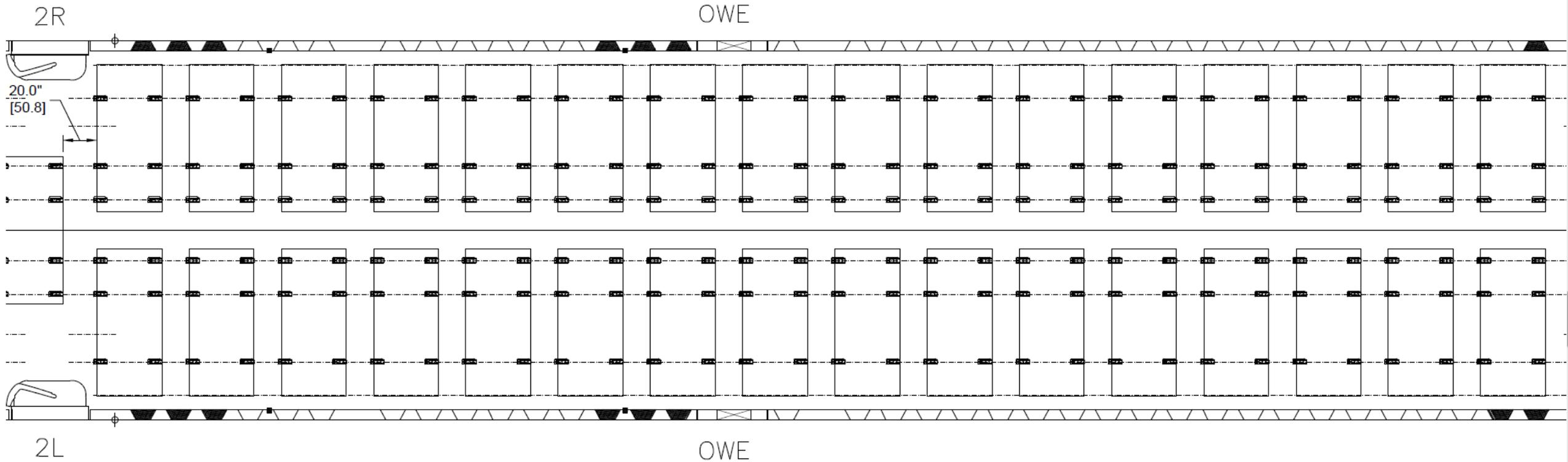
Fire Marshal Station:  
-Utilize existing FA Seat  
-Annunciator Control Panel  
-Interphone  
-Fire Extinguishers



## A340-600, Cargo Module Configuration (Fwd Cabin)

# Cabin Cargo Module Configuration

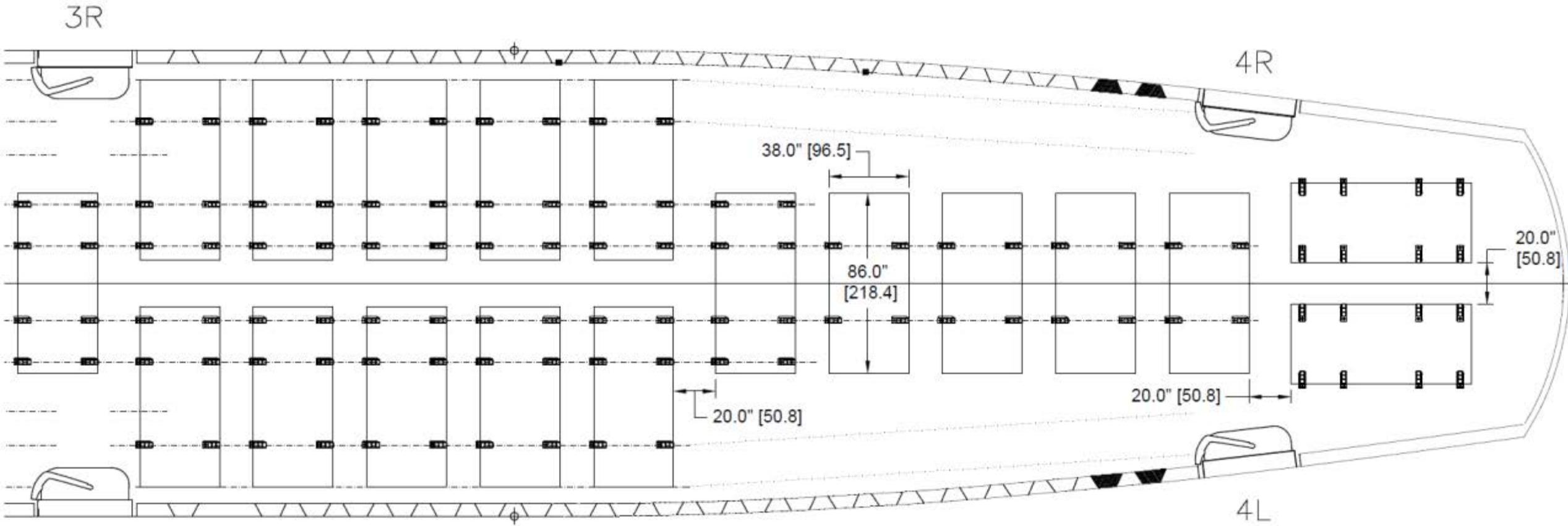
- Loading of Cargo into Fwd and Mid Cabin from LH & RH Door #2



## A340-600, Cargo Module Configuration (Mid Cabin)

# Cabin Cargo Module Configuration

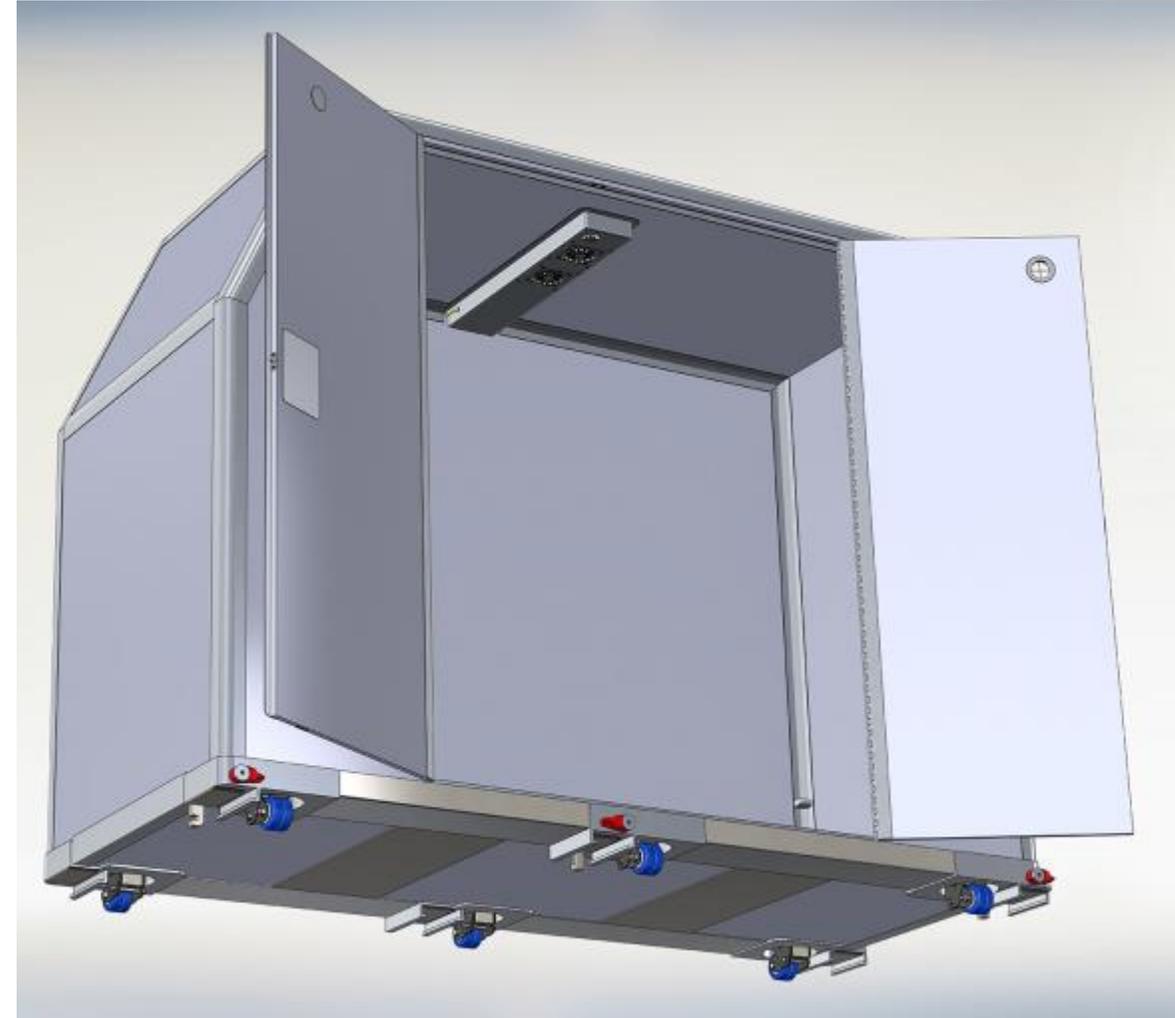
- Loading of Cargo into Aft Cabin from LH & RH Door # 3 & # 4
- Center Cargo Modules can be used to carry heavier Cargo to assist in specific Weight and Balance issues.
- Aft Galley Location floor is augmented with a plinth, to mount standard IFC floor roller/locking rails.



**A340-600, Cargo Module Configuration (Aft Cabin)**

# Cargo Module Monitoring and Safety Systems

- Cargo Module design incorporates the following safety/ featured to meet the EASA/FAA/TCCA Requirements for a stand alone certified Cargo Compartment:
  - Cargo Modules are sealed to resist:
    - fire propagation
    - Keep smoke or halon from entering cabin
  - Cargo Module liner and structure to be designed and tested to meet the fire proofing requirements.
  - Cargo Module includes a Fire Suppressant port for a Fire Marshall to manually distribute fire suppressant into the Cargo Module without the requirement of opening the door.
  - Smoke Detector with Annunciation at ACP and Cockpit Panel, Integrated Cargo Module Flashing Light, and Chime in cabin.



# All Cargo Module Safety features



- Forward facing doors locked/sealed meeting Smoke and Fire requirements.
- Max Temperature Sensors (internal and external).
- Viewing Window, in the event of fire internal to the module.
- Module weight and MAX allowable weight placarded.

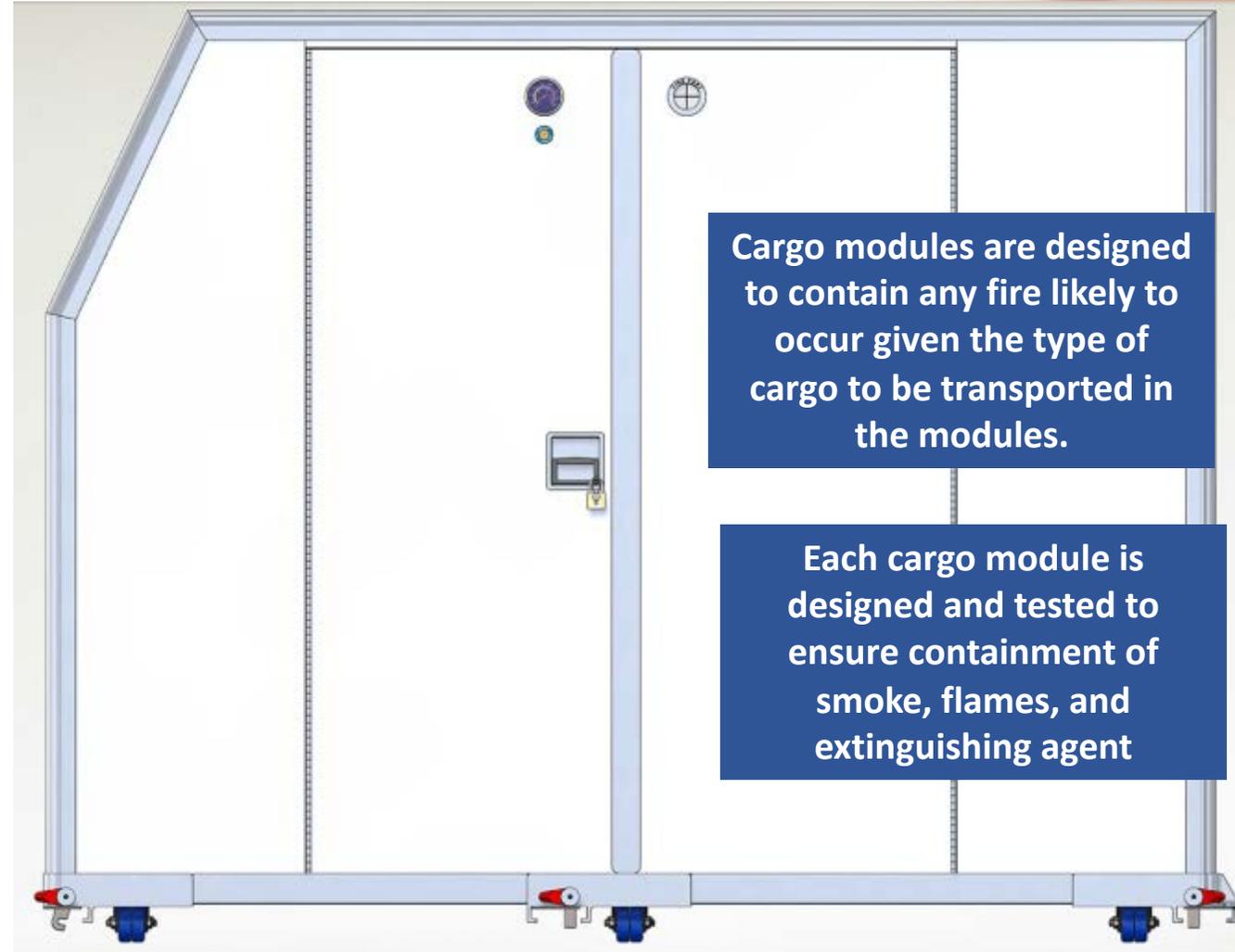


Temp Sensor with Internal Probe

Viewing Window



Max Temp Label



Cargo modules are designed to contain any fire likely to occur given the type of cargo to be transported in the modules.

Each cargo module is designed and tested to ensure containment of smoke, flames, and extinguishing agent

Patent Pending



# Floor Cabin Cargo Module Configuration



**Floor Cargo Configuration**

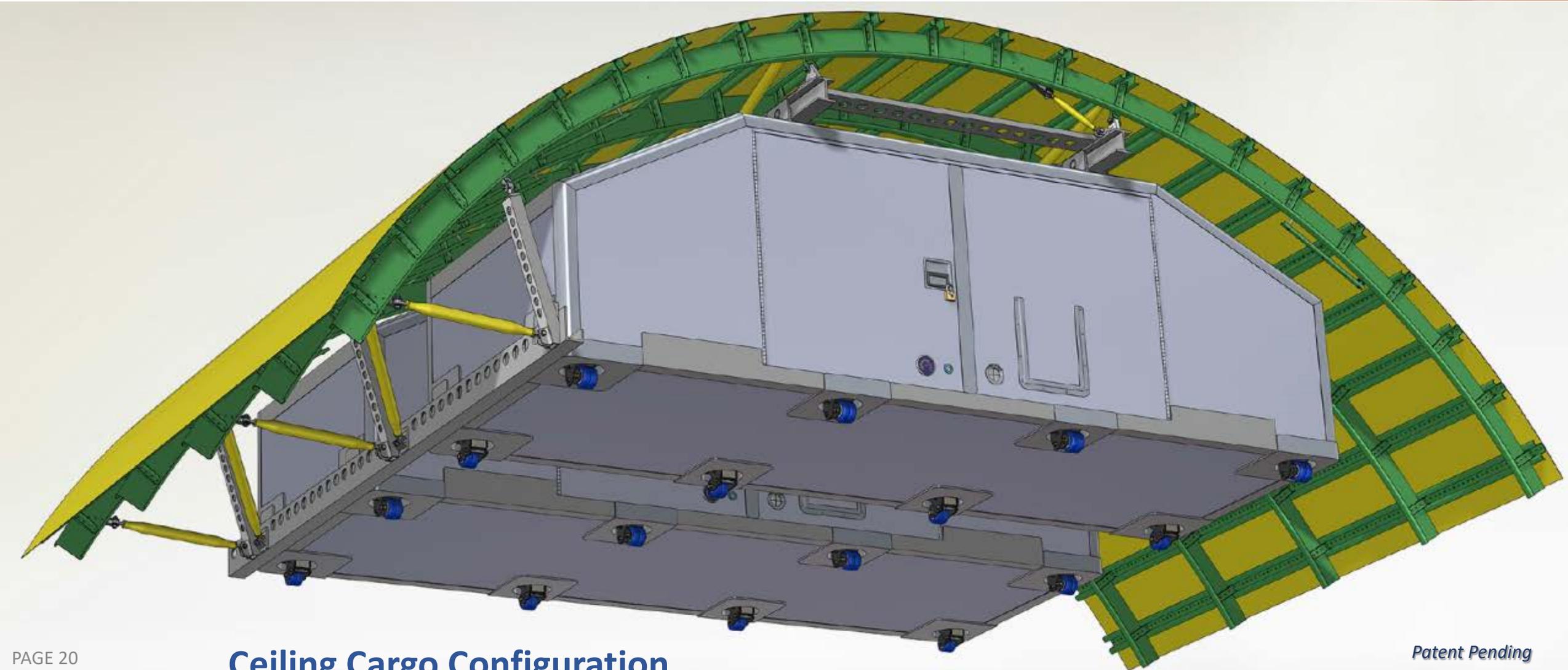
# Ceiling Cabin Cargo Module Configuration

- Ceiling Cargo Module includes all of the features of the Standard Cargo Modules.



*Patent Pending*

# Ceiling Cabin Cargo Module Configuration



# Ceiling Cargo Module Portable Lifting Device

- Loading of the Ceiling Cargo Modules is accomplished using customized material lifts that are stored in galley areas on board while not in use.



Similar Commercially available Material Lift

*Patent Pending*

# Cargo Capacity Estimates:



62 ea.      Outboard Cargo Modules  
9 ea.        Center Cargo Modules  
34 ea.        Ceiling Cargo Modules

Total Volume Est. =      Cargo Modules  
   ~9954 Cu. Ft.  
   ~282 m<sup>3</sup>

Storage Weight Est.\*=      Cargo Modules  
   ~59,437 lbs  
   ~26,950 kg

\*Individual Cargo Module weigh up to an average of 850 lbs (386 kg) including Storage Capacity, Cargo Module Structure, and Mounting Provisions. (Est.)

## Empty Cargo System Weights:

- Outboard Cargo Modules = 225 lbs
- Center Cargo Modules = 225 lbs
- Roller/Locking Rail Assy = 8 lbs
- Ceiling Cargo Modules = 182 lbs

Approx. Total Empty System Weight = ~30,000 lbs

# Designs In Process

- A330-200 COMBI
- A330-200 Full Freighter
- A330-300 COMBI
- A330-300 Full Freighter
- A340-600 COMBI
- A340-600 Full Freighter **(This presentation)**
  
- B777-200 COMBI
- B777-200 Full Freighter
- B777-300 COMBI
- B777-300 Full Freighter
  
- B767-300 Full Freighter
- B767-400 COMBI
  
- B737-800 COMBI
- B737-800 Full Freighter
  
- A319/A320/A321 COMBI
- A319/A320/A321 Full Freighter
  
- B757-200 Full Freighter
- B757-300 COMBI



## Refrigerated Cargo Modules

For the anticipated COVID-19 world wide vaccine distribution IFC is presently designing Refrigerated Cargo Modules that shall maintain between 2C –to-8C and can be powered by any typical warehouse local power, any aircraft power or any typical vehicle power. These features preclude and eliminate any special requirements such as costly and large ramp equipment to off-load cargo, (local galley truck and fork-lift is sufficient), refrigerated warehouses and ground distribution vehicles making it possible to operate into any aircraft around the world and reach the most remote medical clinic.

# For Detailed Information Contact;



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