international association of ports and harbors

The Clean Marine Fuels working group

Bunker Checklist

Liquefied Gas Series

Multiple Trucks to Ship bunker operations

Version M

Bunker operations that are supervised by
a Bunker Facility Operator

The different versions of the IAPH Truck to Ship bunker checklists are based upon the number of involved trucks, location and supervision during the bunkering as per table below:

Bunker operation	Supervision	Location	Checklist to be used
Single Truck to Ship	BFO	Bunker facility	LG TTS version A
Single Truck to Ship	Receiving vessel	Site outside a terminal	LG TTS version B
Single Truck to Ship	BFO	Terminal	LG TTS version T
Multiple Trucks to Ship	BFO	Bunker facility	LG TTS version M

This document is the Multiple Trucks to Ship bunker checklist version M

Content

Who is this checklist for?

This document is **version M** of IAPH's Truck to Ship bunker checklist series for liquefied gasses using multiple trucks. Among others, this checklist is suitable for Liquid Hydrogen (LH) and Liquefied Methane (LM), e.g. Liquefied Natural Gas (LNG) and Liquefied Biogas (LBG).

This version is for the Bunker Facility Operator (BFO) and the receving vessel.

It has been developed specific for the bunkering of vessels using multiple trucks connected to a multiple manifold rig at a bunker facility under supervision of the Bunker Facility Operator (BFO). The BFO is fully responsible for the land based activities of the bunkering, the trucks operations and bunkering area.

Safe bunker operations depend on good closed-loop communication between all parties involved in the bunker operation, and on compliance with the agreed safety procedures at all stages. This bunker checklist helps to ensure that all appropiate checks are formally agreed, carried out and recorded.

The checklist has been developed in coöperation with maritime industry partners that have expertise on Multiple Truck-To-Ship bunkering of vessels with liquefied gas that can evaporate into flammable gas. The checklist mitigates the risk of the cryogenic nature of the liquid fuel aswell as the risk of the release of flammable gas.

The bunker process is devided into six phases and the checklist has therefore six main parts:

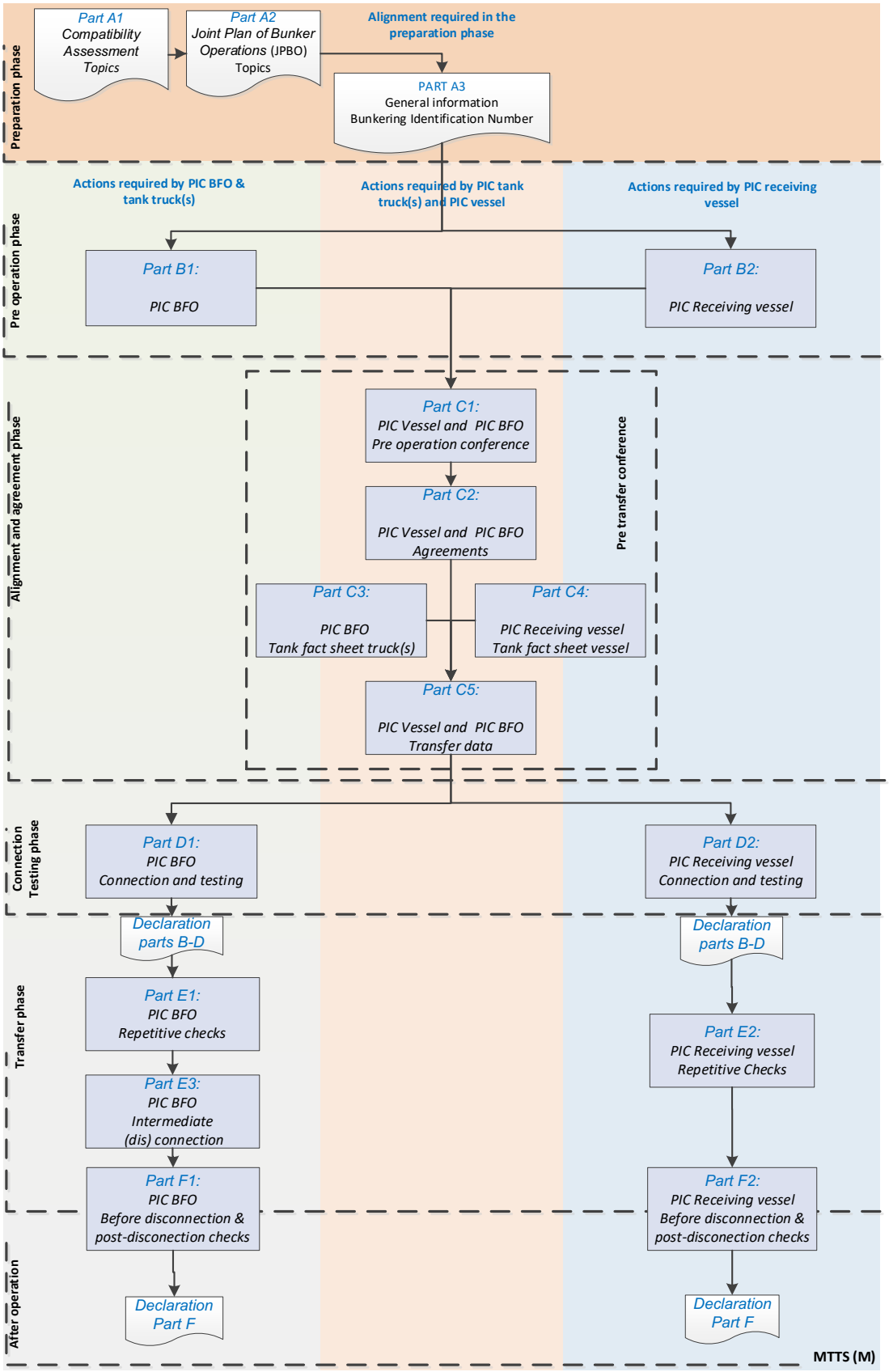
Part A – Preparation phase
Part B – Pre-operation phase
Part C – Alignment and agreement phase
Part D – Connection testing phase
Part E – Transfer phase
Part F – Post-operation phase

Used abbreviations

BFO	Bunker Facility Operator
BIN	Bunker Identification Number
JPBO	Joint Plan of Bunker Operations
LBG	Liquefied Biogas
LH	Liquid Hydrogen
LM	Liquefied Methane
LNG	Liquefied Natural Gas
PIC	Person in Charge
SIMOPS	Simultaneous operations
TTS	Truck to Ship
MTTS	Multiple Trucks to Ship

Schematic overview of the bunker process

Below is an overview of the specific MTTS bunker process in which which the Bunker Facility Operator (BFO) has supervision



Instructions for completing the Truck-to-Ship bunker checklist

The checklist consists of six main parts, A - F. The main parts are divided into multiple sub-parts for individual completion by either Bunker Facility Operator (BFO), Person in Charge (PIC) of the receiving vessel, or the site operator. In Part C the sub-parts are completed together during the pre-transfer conference.

Part A: Preparation phase

In the preparation phase the bunker facility operator (BFO) together with the receiving vessel operator shall start a compatibility assessment. **Part A1** with topics for the compatibility check can be used to check if all issues are addressed.
The BFO and vessel operator will agree on who will draft the Joint Plan for Bunker Operations (JPBO) The agreed party will draft the JPBO based on the operation manual of the trucks, the bunker management plan of the involved vessel, the site- and local specific information and the agreements made during the compatibility check. **Part A2** with topics for the Joint Plan of Bunker Operations can be used to check if all items are addressed. The agreed party shall send the JPBO to all paries involved.

If there are any outstanding issues this should be explained in the communication for pre-arrival review by the representatives.

Upon receipt of the JPBO, parties involved shall complete **part A3** with the general bunker information and an agreed unique 'Bunker Identification Number' (BIN). This BIN shall be entered in the top right corner on each sub-part throughout the checklist.

Part B: Pre-operation phase

The person in charge (PIC) of the BFO shall complete **part B1.** The PIC of the receiving vessel shall complete **part B2.** Both parties will review and finalize the JPBO. Copies of part B1 and B2 shall be exchange with the other parties a.s.a.p., but not later than the pre-transfer conference.

Part C: Alignment and agreement phase

Before the operation starts the PIC of the BFO and the PIC of the receiving vessel shall meet to conduct a pre-transfer conference. They shall jointly complete **part C1** and the agreement sheet **part C2**. The PIC of the BFO shall complete **part C3** and share it with the PIC receiving vessel. The PIC of the receiving vessel shall complete **part C4** and share it with the PIC BFO. To finalize the pre-bunkering phase the PIC's shall jointly complete **part C5**.

Part D: Connection testing phase

Before the operation starts the PIC of the BFO shall complete **part D1**, the PIC of the receiving vessel shall complete **part D2**.

Pre-transfer declaration

Before transfer, the PICs of the BFO and the receiving vessel shall undersign the items checked in parts B - D.

Part E: Transfer phase

The PIC of the BFO shall complete the repetitive checks in **Part E1** at the agreed intervals.
The PIC receiving vessel shall complete the repetitive checks in **Part E2** at the agreed intervals.
All involved shall have the record available for review by the other involved parties.

Before disconnection of an empty truck and the connection of a new truck during the bunkering process (if applicable) the PIC of the BFO shall complete the checks in **part E3** "Intermediate (dis)connection".

Part F: Post-operation phase

At the end of the transfer, before disconnection, the PIC of the BFO shall complete the checks "Before disconnection" of **part F1**, and the PIC of the receiving vessel shall complete the checks "Before disconnection" of **part F2**. When they have confirmed to each other that their pre-disconnection checks are satisfactory, they may disconnect.
After disconnection the PIC of the BFO shall complete the **part F1** checks "Completion of operation", the PIC of the receiving vessel shall complete the **part F2** checks "Completion of operation".

Post-operation declaration

After transfer the PICs of the BFO and the receiving vessel shall undersign the items checked in part F.

Special notes

Checklist code

The codes that are used in the checklist columns indicate:

A	To be entered in the agreement sheet: Part C2
R	Subject to a repetitive check: Part E1, E2, E3
JPBO	See the Joint Bunker Management Plan for details

When unable to check the Yes box

If during the use of the checklists in phase B – F it isn't possible to satisfactorily tick a "Yes" box while the check is applicable, then the issue shall be brought to the immediate attention of the other parties and corrected before the start of the operation. If it is not possible to correct the issue, then a further joint review should be undertaken to confirm whether the bunkering can safely proceed and whether additional mitigations are required to be agreed.

Agreed Physical Quantity

To avoid any confusion during the operation, in Part C5 an agreed decision shall be made on the physical quantity unit:

Agreed Physical Quantity Unit (PQU)
Note the agreed Physical Quantity Unit (PQU): ☐ m^3 or ☐ tonnes or _____

In this block the agreement is noted on the unit for quantity or volume that will be used during the exchange of information on the quantity or volume.

Part A1
Preparation - Compatibility assessment topics

The list of topics is an unlimited open guidance and can be expanded with other topics.

Local and Site requirements:
- Local regulations and approvals
- Site electrical equipment in the Hazardous zone
- Control zones and safety measures
- Controlled acces to safety- and hazardous zone
- Approved safety distance to public (external safety)
- Maximum permitted load of the quay or jetty

Mooring:
- Mooring analyses
- Mooring points
- Mooring loads
- Mooring lines
- Mooring gear load limits (bollards, chocks, rollers etc.)
- Fendering
- Hull form flat side
- Overall dimensions
- Bridge wings
- Freeboard

Equipment:
- Approved transfer equipment
- Electrical insulation
- International shore connection
- Crane and crane reach
- Hoses
- Hose support equipment
- Vessel bunker manifold
- Truck connecting manifold
- Bonding truck connecting manifold
- Deluge System
- Drip trays, gutters

Manifold:
- Distancing
- Spacing, orientation
- Height and strength
- Layout
- Instrumentation
- Connectors and connections
- Cryogenic protection
- Spill containment

Connection:
- Lifting arrangements
- Bunker hose configuration
- Distancing (between manifold and bunkerstation - height and length)
- ESD
- ESD link
- ERC

Bunkering and safety measures:
- Freebooard differences during bunkering
- Draft and tidal changes
- Weather and Wave conditions
- Bunkering procedures including cooling down, purging and tests
- Transfer data
- Maximum allowable parameters
- BOG / vapour management
- Hazardous area classification and control
- Exposure distances conform Industrial standards (IGC/EIGA), SIMOPS
- Supervision BFO

Trucks:
- Routing at the site
- Shore bunker location arrangement
- Shore waiting location
- Bonding of trucks
- Engine switch off
- Pump
- Weels chock measures

People:
- Personnel Instruction
- Incident response instruction and training
- Familiarity of personnel with safety areas and safety measures during bunkering
- Emergency stop signal and shutdown procedures
- Organisation
- Roles and Responsibilities

Incident response:
- Fire control plan
- Emergency Response procedures
- Contingency planning

Communication:
- Joint Plan of Bunker Operations (JPBO)
- Means of communication
- Communication procedures and contact
- Details involved parties
- Language
- Communication BFO - PIC Vessel

Part A2
Preparation - Joint Plan of Bunker Operations topics

The list of topics is an unlimited open guidance and can be expanded with other topics.

General - Unique Bunker Identification Number (BIN) - Purpose and scope of the JPBO - Report of the Compatibility check **Transfer system** - ERS - ESD link - ESD test - Spill /gas detection and control systems **Roles and Responsibilities** - Organization - Responsibilities BFO-PIC vessel, truck drivers and manifold crew in charge - Mandatory permissions **Bunker operation** - Approach - Mooring - Shore bunker location arangement - Shore waiting area trucks - Handling and connection of bunker hose and vapor return hose (if applicable) - Hose Saddle, Deluge System, Manifold Connection, Drip trays, gutters. - Truck connection manifold, connection of trucks - Connection, pressure test, purging, cooling down, gassing up - Intermediate change of trucks - Environmental Operating Limits - Sequence of actions in case of a spill - PPE, personal safety - Draining, purging disconnecting, inerting - Post transfer procedures - Un-mooring	**Vessels details** - Description of the involved vessel - Specification of the vessel - Access to the vessel and access control of safety zones (including supervision) **BFO and truck details** - Description of the BFO - Description of the involved trucks - Specification of the involved trucks - Access control of safety zones (including supervision) around trucks **Bunker preperation** - Mooring analyses report, mooringplan - Description of location, bunkering zones - Description of the truck routing on the site - Description of safety zones - Fendering / mooring - Checklist to be used, latest version - Safety meeting - Bunker transfer: equipment and procedures - Energy carrier supply specification - Volumes (Quantities and characteristics) - Communication (e.g. language), contact details - SIMOPS, control zones, safeguards **Emergencies** - Emergency preparedness and response - Hull protection, water screens. - Emergency shutdown system - Dry break away coupling

Part A3
General information and bunkering identification number

Bunker Identification Number (BIN): _____

JPBO version number: _____

Planned date and time: _____

Port and Berth: _____

Applicable fuel: Liquefied Methane / Liquid Hydrogen / _____

Receiving vessel: _____

Bunker Facility Operator: _____

BIN: _____

Part B1
Pre-operation - Bunker Facility Operator

B1	Check	Status	Code	Remarks
1	Required permissions are granted and observed	☐ Yes		
2	Firefighting equipment is ready for use	☐ Yes		
3	Sufficient area illumination	☐ Yes	A - R	
4	The trucks are able to move under their own power in a safe and non-obstructed direction	☐ Yes	R	
5	Access to the site is controlled	☐ Yes	R	
6	The bunker location is accessible for the trucks	☐ Yes		
7	A safe emergency escape route is established	☐ Yes		
8	Site personnel is acquainted with the restricted area and applicable restrictions	☐ Yes	A	
9	Appropriate personal protective equipment is identified and available	☐ Yes		
10	Site's emergency response team is instructed.	☐ Yes		
11	Underground or subterranean waterdrains in the quay surface in the hazardous and safety zone are closed	☐ Yes		
12	JPBO, supervision and responsibilities are known by the involved truck drivers	☐ Yes	JPBO	
13	Allocation for bunkering and arrangement of the trucks and additional equipment is conform JPBO	☐ Yes	JPBO	
14	The restricted area is free of unauthorized persons, objects, and ignition sources	☐ Yes	JPBO	
15	Means to avoid backfilling are in place	☐ Yes		
16	Bunker pumps, pressure build up units or other means of transfer are ready for use	☐ Yes		
17	No part of the bunker connection can have blocked in volume without a TRV, the TRV outlet is in a safe location			

18	The trucks are electrically grounded and the wheels are chocked or mechanically blocked	☐ Yes	R	
19	The trucks engines are off during the connection, purging and disconnection of the bunker hoses	☐ Yes		☐ *Not applicable*
20	The trucks engines are switched off during bunkering.	☐ Yes		☐ *Not applicable*
21	Waiting area trucks is established conform indicated arangegement in the JPBO	☐ Yes	JPBO	
22	Safety area around waiting trucks are established and met conform JPBO	☐ Yes	JPBO	
23	Additional equipment, (multi manifold rig) is installed and leak tested	☐ Yes		
24	Grounding of multi manifold rig is established conform JPBO	☐ Yes		
25	The multi manifold rig is secured to asure the proper working of the dry break away coupling	☐ Yes		
26	Safety distance in-between trucks is established	☐ Yes		☐ *Not applicable*
27	The multi manifold rig and connected hosed can not have blocked in volume without a TRV, the TRV outlet is in a safe location	☐ Yes		

BIN: _____

Part B2
Pre-operation - PIC receiving vessel

B2	Check	Status	Code	Remarks
1	Mooring arrangement is effective	☐ Yes	R	
2	Firefighting equipment is ready for use	☐ Yes		
3	Sufficient area illumination	☐ Yes	A - R	
4	The receiving vessel can sail under its own power in a safe and non-obstructed direction	☐ Yes	R	
5	The restricted area is free of other ships, unauthorized persons, objects, and ignition sources.	☐ Yes	R	
6	Vessel entrance is controlled, and proper safety information is provided at the gangway	☐ Yes	R	
7	Safety measures within the safety area are observed	☐ Yes		
8	External doors, portholes and accommodation ventilation inlets are closed as per operations manual	☐ Yes	R	
9	Appropriate personal protective equipment is identified and available	☐ Yes		
10	Emergency water spray system is ready for use	☐ Yes		
11	Spill arrangements are effective and suitable for the applicable fuel	☐ Yes		
12	Hull and deck protection against low temperature is in place.	☐ Yes		
13	Bunker pumps and compressors are ready for use	☐ Yes		
14	Control valves are well maintained and in good working order	☐ Yes		
15	Unused bunker connections are blanked and fully secured	☐ Yes		
16	Fire control plans are readily available	☐ Yes		☐ *Not applicable*
17	International Shore Fire Connection is available.	☐ Yes		

18	Planned SIMOPS are in accordance with the safety procedures and risk mitigation in ship's operational documentation and JPBO	☐ Yes	JPBO	☐ *Not applicable*
19	SIMOPS will be compliant with local regulations and restrictions	☐ Yes		☐ *Not applicable*

BIN: _____

Part C1
Alignment and Agreement - PICs BFO and receiving vessel

C1	Check	Ship	BFO	Code	Remarks
1	Present weather and wave conditions are within the agreed limits	☐ Yes	☐ Yes	A - R	
2	JPBO procedures are known by personnel involved	☐ Yes	☐ Yes	JPBO	
3	Access between the ship and shore is safe and controlled	☐ Yes	☐ Yes		
4	Operation supervision and watchkeeping is adequate	☐ Yes	☐ Yes		
5	Effective communications are established	☐ Yes	☐ Yes	A - R	
6	Emergency stop signal and shutdown procedures have been agreed upon, tested, and explained to all personnel involved.	☐ Yes	☐ Yes	A	
7	Emergency procedures and plans and the contact numbers are known to the persons in charge	☐ Yes	☐ Yes		
8	Predetermined restricted areas are established and appropriate signs marking these areas are in place	☐ Yes	☐ Yes	A - R	
9	Agreed safety measures within the safety area are in place including the use of proper PPE	☐ Yes	☐ Yes	A	
10	Measures for the prevention of falling objects are observed	☐ Yes	☐ Yes		☐ *Not applicable*
11	Safety Data Sheets are available	☐ Yes	☐ Yes		
12	Requirements concerning ignition sources are observed	☐ Yes	☐ Yes	R	
13	Bunker system gauges, high level alarms and high-pressure alarms are operational	☐ Yes	☐ Yes	R	
14	Boil-off pressure control systems and/or re-liquefaction equipment are operational	☐ Yes	☐ Yes		
15	Vapour connections are properly connected	☐ Yes	☐ Yes		☐ *Not applicable*
16	An emergency release coupling (dry break away) is in place and ready for activation	☐ Yes	☐ Yes	A	

17	ESD arrangements including automatic valves, both on the ship and at the trucks, are ready for activation	☐ Yes	☐ Yes	A	
18	Vessel's person in charge (PIC) can activate ESD trucks, PIC BFO can activate ESD vessel.	☐ Yes	☐ Yes	A	
19	The bunker connection between the ship and the trucks is sufficiently supported	☐ Yes	☐ Yes		
20	The bunker connection between the ship and the multiple manifold rig has adequate electrical insulating means in place.	☐ Yes	☐ Yes	A	☐ *Not applicable*
21	Competent authorities are notified of the start of bunker operations as per local regulations	☐ Yes	☐ Yes		☐ *Not applicable*
22	Safety procedures and risk mitigation for SIMOPS are conform to the ship's operational documentation and the JPBO	☐ Yes	☐ Yes		☐ *Not applicable*

BIN: _____

Part C2
Alignment and Agreement - PICs BFO and receiving vessel

C2	Reference to check	Description	Agreement
1	A3	Latest version of the JPBO	Reference: Date / version:
2	C1-20	Electrical insulation	Method:
3	C1-8	Control zones	Reference: Agreed signs:
4	C1-1	Weather and wave limitations	Limits:
5	B1-3 B2-3	Bunker area illumination	Method:
6	C1-5	Communication	VHF / UHF Channel: _____ Language: _____ Primary System: _____ Backup System: _____
7	C1-6	Emergency stop signal and shutdown procedure	Reference: Alarm signal:
8	C1-17	ESD system	System: Link: Closing time ESD valve receiving ship: _____ seconds Closing time ESD valve Trucks: _____ seconds ERC ☐ Yes Dry Break Coupling ☐ Yes

BIN: _____

Part C3
Alignment and Agreement - Bunker Facility Operator

Factsheet trucks

Status prior to bunker operations						
C3	Product & grade	Tank capacity	Volume	Temperature	Pressure	Aggregation state
1		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]
2		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]
3		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]
4		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]
5		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]
6		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]
7		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]
8		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]
9		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]
10		m^3	PQU	°C / °F [1)]	bar / psi [1)] (rel)	Liquid / gaseous[1)]

[1)] delete as appropriate

BIN: _____

Part C4
Alignment and Agreement - PIC receiving vessel

Tank factsheet receiving vessel

C4		Status prior to bunker operations				
		Tank:	**Tank:**	**Tank:**	**Tank:**	
1	Present fuel quantity in bunker tank(s):					m^3
2	Remaining capacity for bunkering:					m^3
3	Temperature:					°C / °F [1)]
4	Pressure:					bar / psi [1)] (rel)

[1)] delete as appropriate

BIN: _____

Part C5
Alignment and Agreement - PICs BFO and receiving vessel

Transfer Data

C5	Agreed Physical Quantity Unit (PQU)	
1	The agreed Physical Quantity Unit (PQU):	☐ m^3 or ☐ tonnes or _____

C5	Agreed transfer data	Bunker Facility Operator	Receiving vessel	
2	Temperature of the fuel during bunkering:			°C / °F [1]
3	Volume of fuel to be bunkered:			m^3
4	Filling limit bunker tanks:			%
5	Available tank capacity is sufficient for bunker volume:	☐ Yes	☐ Yes	
6	Starting rate:			PQU per hour
7	Max transfer rate:			PQU per hour
8	Topping up rate:			PQU per hour
9	Work pressure at manifold:			bar / psi [1] (rel)
10	Max pressure at manifold:			bar / psi [1] (rel)
11	Bunker line work pressure:			bar / psi [1] (rel)
12	Max pressure bunker line:			bar / psi [1] (rel)
13	Max pressure bunker tank			bar / psi [1] (rel)

[1] delete as appropriate

Simultaneous operations

C5-14	Agreed simultaneous liquefied gas / oil bunker operations (SIMBOPS) [2)]	Bunker Facility Operator	Receiving vessel
	☐ *Not applicable*	☐ Agreed	☐ Agreed

[2)] Note that for oil bunker operations a separate bunker checklist should be completed

C5-15	Agreed simultaneous operations during bunkering (SIMOPS)	Bunker Facility Operator	Receiving vessel
	☐ *Not applicable*	☐ Agreed	☐ Agreed

C5-16	Restrictions during bunkering due to SIMOPS	Bunker Facility Operator	Receiving vessel
	☐ *Not applicable*	☐ Agreed	☐ Agreed

BIN: _____

Part D1
Connection Testing - PIC Bunker Facility Operator

D1	Check	Status	Code	Remarks
1	Transfer systems are tested, operational and ready for use	☐ Yes		
2	Gas detection systems are tested and operational	☐ Yes		
3	All means of communication are tested	☐ Yes	R	
4	Emergency stop signals and shutdown procedures are tested	☐ Yes		
5	Bunker system gauges, high level alarms and high-pressure alarms are operational	☐ Yes		
6	Safety and control devices on fuel installations are checked and working properly	☐ Yes		
7	Boil-off pressure control systems are operational and in good working order	☐ Yes		☐ *Not applicable*
8	Trucks ESD arrangements, including automatic valves, are tested and ready for activation	☐ Yes		
9	ESD inter-linked connections are established and tested conform the JPBO	☐ Yes	JPBO	☐ *Not applicable*
10	ESD's manual activation is tested	☐ Yes		
11	Bunker transfer equipment is confirmed: - in good condition - of the appropriate type - sufficiently supported - properly fitted with gaskets/seals - lined-up correctly - properly rigged - secured to the manifolds - fully secured	☐ Yes		

BIN: _____

Part D2
Connection Testing - PIC receiving vessel

D2	Check	Status	Code	Remarks
1	Transfer systems are tested, operational and ready for use	☐ Yes		
2	Gas detection systems are tested and operational	☐ Yes		
3	All means of communication are tested	☐ Yes	R	
4	Emergency stop signals and shutdown procedures are tested	☐ Yes		
5	Bunker system gauges, high level alarms and high-pressure alarms are operational	☐ Yes		
6	Safety and control devices on fuel installations are checked and working properly	☐ Yes		
7	Ship's ESD arrangements, including automatic valves, are tested and ready for activation	☐ Yes		
8	ESD inter-linked connections are established and tested conform the JPBO	☐ Yes	JPBO	
9	ESD's manual activation is tested	☐ Yes		
10	Bunker transfer equipment is confirmed: - in good condition - of the appropriate type - sufficiently supported - properly fitted with gaskets/seals - lined-up correctly - properly rigged - secured to the manifolds - fully secured	☐ Yes		

BIN: _____

Declaration on parts B - D

We the undersigned have checked the items in the applicable parts B – D as marked and signed below:

	Bunker Facility Operator	Receiving vessel
JPBO received	☐	☐
Part B - Pre-operation	☐	☐
Part C - Alignment and agreement	☐	☐
Part D - Connection testing	☐	☐

We have satisfied ourselves that the entries we have made are correct to the best of our knowledge and that the parties involved agree to undertake the bunker operation.

We have also made arrangements to carry out repetitive checks as necessary and agreed that those items coded 'R' in the checklist, and noted in part E, which should occur at intervals not more than _____ hours.

If, to our knowledge, the status of any item changes, we will immediately inform the other party.

Bunker Facility Operator	Receiving vessel
Name	Name
Position	Position
Signature	Signature
Date and time	Date and time

BIN: _____

Part E1
Transfer - PIC Bunker Facility Operator

Repetitive checks

Note interval: _____ hrs.

E1	Check	Time	Time	Time	Time	Time	Time	Remarks
-	Time of check							
1	Access ship shore is safe and controlled	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
2	Communication is functioning	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
3	Illumination is sufficient	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
4	The restricted area and safety zone requirements are observed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
5	Ignition source restrictions are observed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
6	SIMOPS restrictions are observed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ *Not applicable*
7	Back filling protection is operational	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
8	Trucks cannot move unintentionally	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
-	Initials							

BIN: _____

Part E2
Transfer - PIC receiving vessel

Repetitive checks

Note interval: _____ hrs.

E2	Check	Time	Time	Time	Time	Time	Time	Remarks
-	Time of check							
1	Weather / wave conditions within limits	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
2	Mooring arrangement is effective	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
3	Access ship shore is safe	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
4	Communication is functioning	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
5	Illumination is sufficient	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
6	Receiving ship can sail under its own power	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
7	Accommodation's external doors and ports are closed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
8	The restricted area and safety zone requirements are observed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
9	Vessel entrance is controlled, and proper safety information is provided at the gangway	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
10	Ignition source restrictions are observed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
11	Overfilling protection is operational	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	
12	SIMOPS restrictions are observed	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ *Not applicable*
-	Initials							

BIN: _____

Part E3
Truck exchange during bunker operation – Bunker Facility Operator

E3	Checks before disconnection of the truck	Status	Code	Remarks
1	PIC of the vessel and personnel are informed of the exchange of trucks	☐ Yes		
2	Personnel involved in the connection and disconnection use proper PPE	☐ Yes	R	
3	Ice on critical parts is removed	☐ Yes		
4	All relevant remote and manually controlled valves are closed, remote valve opening systems are disabled	☐ Yes		
5	The truck to disconnect is separated from the part of the system still in operation	☐ Yes		
6	Truck engine is off during the connection, purging and disconnection of the bunker hoses	☐ Yes		☐ *Not applicable*
7	Relevant bunker hoses, pipelines and manifold parts, have been purged, depressurized and are ready for disconnection	☐ Yes		

E3	Checks before connection of the truck	Status	Code	Remarks
8	Means to avoid backfilling are in place	☐ Yes		
9	ESD inter-linked connections are established and tested conform the JPBO	☐ Yes		
10	New truck is electrically grounded and the wheels are chocked or mechanically blocked	☐ Yes		
11	Trucks engines are switched off during bunkering if a running engine is not required for the operation.	☐ Yes		☐ *Not applicable*
12	Bunker transfer equipment is confirmed to be in good condition: - of the appropriate type - sufficiently supported - properly fitted with gaskets/seals - lined-up correctly - properly rigged - secured to the manifolds - fully secured	☐ Yes		

BIN: _____

Part F1
Post-operation - PIC Bunker Facility Operator

Post-transfer - Before disconnection

F1	Check	Status	Code	Remarks
1	Relevant bunker hoses, fixed pipelines and manifolds are purged, de-iced, inerted and ready for disconnection	☐ Yes		
2	All remotely and manually operated valves are closed as required for safe disconnection	☐ Yes		
3	Receiving vessel is notified on “ready to disconnect”	☐ Yes		

Post-disconnection - Completion of operation

F1	Check	Status	Code	Remarks
4	Restricted area and bunker area on the shore are cleared and restored to standard condition	☐ Yes		
5	Relevant documents are signed and exchanged	☐ Yes		
6	Near misses and incidents are reported to competent authorities	☐ Yes		☐ *Not applicable*
7	Competent authorities are notified on the completion of the bunker operation	☐ Yes		

BIN: _____

Part F2
Post-operation - PIC receiving vessel

Post-transfer - Before disconnection

F2	Check	Status	Code	Remarks
1	Relevant bunker hoses, fixed pipelines and manifolds are purged, de-iced, inerted and ready for disconnection	☐ Yes		
2	All remotely and manually operated valves are closed as required for safe disconnection	☐ Yes		
3	BFO is notified on “ready to disconnect”	☐ Yes		

Post-disconnection - Completion of operation

F2	Check	Status	Code	Remarks
4	Bunker area on the vessel is cleared and restored to standard condition	☐ Yes		
5	Relevant documents are signed and exchanged	☐ Yes		
6	Near misses and incidents are reported to competent authorities	☐ Yes		☐ *Not applicable*

BIN: _____

Declaration on part F

We the undersigned have checked the items in parts F as marked and signed below:

	Bunker Facility Operator	Receiving vessel
Part F - Post-operation	☐	☐

We have satisfied ourselves that the entries we have made are correct to the best of our knowledge and that the parties involved agree to have completed the bunker operation.

Bunker Facility Operator	Receiving vessel
Name	Name
Position	Position
Signature	Signature
Date and time	Date and time