RISK ALERT

補油作業について

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補油作業は船舶を運航するうえで不可欠かつ日常的に行われる作業ですが、近年、燃料品質の問題が原因で機関の損傷や推進力の喪失を引き起こし、頻繁に紛争が発生しています。たとえば、船舶の航海計画や運航に大きな混乱が生じたり、遅延によって貨物損害が発生した場合は、燃料油を船から除去したりタンクを清掃するなどのデマレージクレームを引き起こします。

正しい仕様、品質、量の燃料油を安全かつ効率的に補油するには、十分に検討された作業手順と習熟が不可欠です。紛争が発生した場合、そのような手順の順守がなされたことを確認できる文書は非常に重要になります。

国際安全管理コード（ISM）は、船舶の安全管理システムを順守して、作業の詳細なリスク評価に基づいた詳細な補油作業手順を設定することを定めており、また、燃料油輸送操作、サンプリング手順、乗組員の訓練、および燃料油の購入手続きと補油作業に責任者を配置することなどを求めています。

排出規制の変更や、過去に発生した異物混入事例、および燃料油のグレードが多種多様になっていることを考えると、すべての関係者間のより高いレベルの協力が必要とされており、期待されているところです。

一般的な推奨事項

公正な契約条件を引き出すことができるようにするために、補油にかかわる当事者で緊密な協力体制がとられていることが強く推奨されますが、経験上、そのような体制を確立するのは難しい場合があります。船舶運航に差し支えなければ、給油業者との長期契約を締結することを検討する必要があると思われます。

また、給油業者及び用船者双方との契約条件を慎重に検討することが不可欠です。

十分信頼性の高い手順に従い、文章と記録を維持し、適切に署名や証拠になる目視情報を保全し、注意深く代表的なサンプリングを行うことは、紛争を回避し、また、紛争が発生した場合のスムーズな解決をはかるために最も重要です。

MEPC.1 / Circ 875は船内の燃料油の品質を保証するための燃料油購入者やユーザー向けのベストプラクティスに関するガイダンスであり、貴重な情報とガイダンスを掲載しています。

補油作業の手順が厳守され、記録が細心の注意を払って維持されていることを保証するためには、乗組員の理解と訓練が不可欠です。

本船にある燃料油品質試験キットは、分析できる範囲は限られていますが、密度、含水量、粘度などの燃料油の基本的な特性を検証し、潜在的な紛争を見越して早期に対応するべきかもしれないということを提起するのに役立つ可能性があります。ただし、本船における品質試験は、ISOの仕様に従って実行される試験所の分析の代用であると見なされるべきではありません。

そのほかに考慮に入れる必要のある要素は、燃料油サプライチェーンの品質保証、契約の遵守、油種毎に分離されたステミングと保管、燃料分析、および燃料管理です。

メンバーの皆様におかれましては、ISO 13739：2010と、補油作業の実施基準に関するSS600およびSS524シンガポール規格などの地域規格を利用することをお勧めします。補油を行う場合には、関連する現地の要件に常に従う必要があります。米国に取引する船舶の場合は、USCG 33 CFR 155の要件が補油作業手順に組み込まれ、検査の時に追跡、記録、利用できるようにしておかなければなりません。

メンバーの皆様は、船舶を運行する地域のすべての燃料供給業者の登録情報を維持し、その情報を、フリートで発生した事例やIMOグローバル統合輸送情報システム（GSIS）などに公開されている情報に基づいて、定期的に更新することをお勧めします。

Bunkering is a routine but essential part of vessel operations, yet frequent disputes ensue because of fuel quality problems causing machinery damage or loss of propulsion and can culminate in substantial claims, for example, where there is considerable disruption to vessels' schedules and operations or where the delays result in cargo damage, demurrage claims such as when the fuel oil has to be removed from the vessel and the tanks cleaned.

A well considered bunker procedure and diligent practice is essential to ensure that bunkers of the correct specification, quality and quantity are stemmed safely and efficiently. The documentation to establish adherence to such procedures will be extremely important in the event of a dispute ensuing.

The International Safety Management Code

(ISM) requires that as per the vessel's Safety Management System a detailed bunkering procedure is implemented, that it be based on a detailed risk assessment and that it includes the bunker transfer operation, sampling procedures, training of the crew, and designates a person in charge of the requisition and bunkering operations.

A greater level of cooperation between all concerned parties is now required, and expected, given the changes in the emission regulations, contamination issues that have been experienced, and the availability of the different grades of fuel oil.

Bunker planning

An important stage of the bunkering process is for the receiving vessel to prepare a detailed bunkering plan for the required grades of fuel and quantities. Area of operation, availability of the appropriate grade of fuel and cost of fuel are important elements of the planning process and therefore needs to be considered by the charterer and vessel operator in liaison with the receiving vessel.

For the safe operation of the vessel the Master must ensure that an adequate quantity of fuel oil of the appropriate grade and specification is available on board to complete the passage. For a vessel to be able to undertake its intended passage safely, the fuel oil stemmed must meet the statutory requirements (sulphur content and flash point), be of the grade and specification suitable for consumption in the installed machinery, and be of a quality that will not cause any operational problems or machinery damage.

Depending on the emission compliance strategy adopted a vessel might need to stem multiple grades of fuel oil.

The following information is therefore necessary in order to prepare the bunkering plan:

- Accurate route and passage planning including entry and passage through Emission Control Areas (ECAs).
- Vessel service speed requirements as per charter party
- Current reserve on board of each grade of fuel oil (include any lubrication oil constraints)
- Bunkering locations and availability there of the specific grades of fuel that can be arranged without undue deviation
- Tank capacities (not more than 95%) and segregation requirements.

The analysis is dependent on the accuracy of the passage planning and bunker reserve on board, notwithstanding weather and hull condition which could increase the consumption and lead to insufficient fuel for the passage if not properly accounted for.

The following further information should be agreed between the receiving vessel and the bunker supplier and documented.

- Sequence of loading in case of multiple grades
- Pre and post bunkering documentation required
- Joint gauging and witnessing of samples
- Agreeing on the contractually binding fuel sample
- Sampling requirement – location, procedure and number of samples to include for lab analysis and surveyor sample as applicable.
- Final tank quantities and ullage
- Maximum allowed bunkering rate for each grade

It may also be prudent to specify additional fuel oil properties such as the viscosity, pour point and cold flow properties. These might be dependent on limitations such as in the vessel ability to adequately heat the fuel in the tanks while operating in cold climates or to handle low viscosity fuels.

The receiving vessel may also wish to consider appointing an independent surveyor to witness the bunkering and sampling particularly where there has been previous experience of quality issues or disputes in the area where the bunkers are to be supplied, or where there is any concerns that the correct procedures may not be followed.

Contractual best practice

When the bunker plan has been formulated the following should be agreed by way of the supply contract and where applicable in the charter party. The latter will address the ownership of the fuel on board. It is important that these requirements are agreed, well documented and communicated to all concerned parties within the terms of contract.

- Grade of each fuel oil
- Specification of fuel oil, as a minimum specify the ISO8217 standard.
- Sulphur content for compliance or suitable for the installed scrubber
- Quantity of each grade of fuel oil

It is, however, possible that fuel is supplied which complies with the ISO8217 Standard, but which is not suitable for use by the vessel. Where the bunker contract is subject to English law, a warranty by

the supplier that the bunkers are fit for use by the vessel is likely to be implied into the contract (even if it is not expressly stated), although some suppliers' terms exclude this warranty.

Frequently the supplier will impose its general terms and conditions, published on its website, by referring to them in the Bunker Confirmation or invoice. These will determine crucial issues such as the law and jurisdiction of the contract, mandatory procedures in the event of a dispute, the retention of title by the supplier until payment is received, and provisions limiting the supplier's liability. Strict adherence to the supplier's procedures is necessary to preserve the buyer's ability to pursue a claim for breach of contract in the event of a quantity or quality dispute. Suppliers' terms frequently incorporate very short time bars for notification of quality issues (frequently 14 days, but sometimes as short as 24 hours), and it is essential that any issue is therefore notified within the required time period. See the Club's Article "Bunker Time Bars: Buyers Beware":

Supply contracts also frequently provide that the supplier's sample shall be binding in the case of a dispute.

The charterparty

Where the vessel is on time charter, which provides that the charterer is to provide and pay for the bunkers, then the buyer under the sale contract will be the charterer and not the owner. Care will be needed in drafting the charterparty terms as they relate to bunkering.

It is of course in the interests of both owner and charterer that the fuel grade and specification are clearly set out in the charterparty.

In addition, the owner will want to include a warranty that the fuel is fit for use by the vessel (such a warranty may be implied where the charterparty is subject to English law), and will need to consider carefully what other terms they wish to include: for instance, a provision that the charterer does not have authority to bind the owner or the vessel nor to create a lien over the vessel (although in some jurisdictions even such a clause would not be enough to prevent a bunker supplier having a lien for unpaid bunkers).

The charterer, on the other hand, will want to ensure so far as possible that the terms of the charterparty and the sale contract are consistent. Important issues to consider include:

- Binding sample: the vessel owner is likely to want the drip sample taken from the receiving vessel manifold to be recognised as the representative sample for the purpose of any dispute under the charterparty; however, the supplier's terms will almost always provide that the supplier's sample is binding under the sale contract;
- The charterer should try to ensure that the supply contract specifies the origin of the supplier's sample – even if the supplier won't agree to the sample being taken from the receiving vessel's manifold, the risk of discrepancy will be reduced if the supply contract specifies that the sample should be taken by continuous drip from the bunker barge manifold;
- Charterer could require the appointment of their own representative (perhaps a surveyor) to attend the bunkering and take samples on behalf of the charterer;
- Charterparty requiring that the owner provide sealed and signed samples to the charterer
- If the bunkers are unlikely to be burned immediately, how can the charterer know of a quality problem in time to give timely notice under the bunker sale contract? A requirement that a sample be sent immediately for routine testing might enable any quality issue to be identified at an early stage.

Supplier relations

The buyer will specify the fuel oil required and the supplier is responsible for providing fuel oil that meets the agreed specification. The supplier is required to ensure the quality of fuel oil by implementing appropriate control measures within the production and supply chain.

Prior to making a purchase contract, where possible, the buyer should verify that the supplier:

- is licenced by the local authority (potential fines in some countries for use of an unlicensed supplier)
- has a quality management system
- will issue a Certificate of Quality based on fuel analysis in accordance with the ISO8217 standard specification
- has a track record of supplying the required grade of fuel.

Additionally, it should also be verified that the bunker barge operator, if independent of the supplier, has a quality and safety management system in place.

Bunkering Operation

The supplier or representative should provide the following documents for the bunkering operations to the recipient vessel and well enough in advance to allow for any discrepancy to be raised and discussed, thereby avoiding any last-minute disputes

and delays.

- Certificate of quality issued in accordance with ISO8217 standard
- Safety Data Sheet (SDS) required as per SOLAS Chapter VI Regulation 5.1
- Bunker Delivery Note (BDN)

The issue of a BDN is required as per Marpol Annex VI Reg 18.5 and must include details as per Appendix V of Marpol. BDN templates issued by local authority must take precedence over Marpol issued BDN template. It is imperative that the BDN is appropriately completed and the entries should be verified by the receiving vessel.

The BDN must include a declaration that the fuel oil is in conformity with MARPOL Annex VI, Reg 18.3 and that the sulphur content of fuel oil supplied does not exceed the limit value as per Regulation 14.1 or 14.4 or else a specified sulphur value has been stated where for example a scrubber has been installed or, in some cases, where exemption has been granted for trials of emission control technology in accordance with MEPC 286(71).

In addition to the above documentation the following should be communicated and agreed between the supplier and the receiving vessel:

- calibration/type approval certificates- flow meter, drip sampler, remote level gauging etc.
- tank volumes start and completion
- local reporting obligations- eg. bunker transfer permit, signed checklist by both parties
- checklists completed - pre-bunkering, during transfer and completion
- timeline of events recorded
- communication, emergency procedures and rates of transfer documented
- Sampling locations and protocols
- Agreement on location of source of binding sample

Some local authorities also require a certificate of inspection to be issued signed by both parties when a joint inspection has been carried out.

A toolbox meeting should be undertaken with all involved parties to review and record what has been agreed before commencement of the bunkering operation.

A checklist should be prepared and used for each stage of the operations as a matter of good bunkering practice by the designated representatives of both parties.

A safe means of personnel transfer between the vessels should be provided, the use of a non-man-riding crane is not acceptable. Where there are practical and safety concerns for personnel transfer consideration should be given for remote inspection.

The bunkering operation is to be controlled by the designated person, generally the chief engineer, in line with the vessels International Safety Management procedures and is to be undertaken by a designated bunkering team which should include both deck and engine personnel.

Rest and work hour requirements must be met, especially in case of simultaneous operations, with consideration given for non-critical operations to be postponed.

Bunker in progress

Drip sampler and sealed container

Sampling

An official sample of bunker fuel is required as per MARPOL Annex VI Reg. 18 and is to be provided by the supplier along with the BDN.

Representative samples are also required for carrying out independent laboratory analysis and a ship sample should be retained for any further testing that may be required as highlighted, for example, in claims where contamination could be an issue.

As per the guidance in MEPC 182(59) the samples should be drawn at the receiving ship's inlet bunker manifold and should be drawn continuously throughout the bunker delivery period.

In case of more than one supplier or, for example, where multiple vessels are used for supply of the required quantity of bunkers, a separate set of samples should be available / drawn along with the applicable BDN.

General sampling procedures:

- A type-approved automatic or manual continuous drip sampler.
- A clean collection container of about 5 litre capacity capable of being sealed at the needle valve in order to prevent contamination.
- Continuous uniform flow to be maintained in order to fill the container with a sample representative of the entire bunkering process, avoid changing the flow rate. Where required the container should be changed, ensuring that containers are sealed in agreement with all parties. Experience suggests that the sampling rate needs to be closely monitored by the crew member manning the manifold to prevent overfilling of the container but also to ensure an adequate quantity of sample is collected.
- Upon completion of bunkering, the seal between the container and needle valve is broken
- The sample is thoroughly shaken for homogeneity and immediately transferred into clean 750 ml sample bottles simultaneously filling the samples in portions (i.e. not sequential) until the bottles are filled with at least 400ml in each and be careful to prevent any contamination of the samples.

A minimum of four samples representative of the stemmed bunker should be collected, ideally with additional samples being collected where possible and appropriate such as where a surveyor has been appointed or where a sample is required by the Charterer.

- MARPOL sample (statutory for receiving vessel)
- Supplier's sample (may request additional and should be agreed in advance)
- Ship's additional ship sample in case dispute ensues
- Sample for laboratory analysis

A tamper proof seal and label with the below information must be fitted to each sample bottle

- Vessel details and location
- Supplier details and tanker or terminal name
- Sampling location
- Grade of fuel bunkered
- Seal number for the sample bottle
- Signature of supplier and receiver and stamped

Initial sealing, breaking of seal of the collecting container and transfer to sample bottles and labelling must be witnessed and signed by both parties. A statement must be recorded to this effect.

The seal numbers should be recorded on the BDN including any additional samples that might have been taken on either side of the hose connection.

The BDN and the labels of the sample bottles must be signed by both parties only upon completion of the bunkering and when the quantities have been verified. Due care must be taken in this custody process to avoid any errors arising which could have detrimental consequences when pursuing or defending a potential claim in case of a dispute.

Where the supply contact says that the supplier sample is binding, the receiving vessel should ascertain the origin of the sample. Where there is any doubt as to the veracity of the sample, the receiving vessel should issue a letter of protest as detailed below.

Letter of protest (LOP)/Note of protest (NOP)

Any deviation from the above procedures should be addressed and recorded at the time of bunkering.

A letter of protest should be issued in such situations, detailing the discrepancy. Having pre-prepared templates could prove useful in such a situation. The Club will be able to assist the Member in this regard.

Whilst not exhaustive, some of the reasons for an LOP include:

- Short supply of bunkers
- BDN not issued or not in accordance with the amended MARPOL VI Reg. 18.5 requirement
- Source of the sample provided by supplier is unknown or not representative per MEPC 182(59) or as per local regulations. In such instances the label should be signed “for receipt only - source unknown”
- Refusal to grant access to the bunker vessel or refusal to carry out joint inspection
- Discrepancy in stated properties in BDN such as temperature, water content, and density as may be verified by on board test kits
- Lack of appropriate documentation, calibration certificates, approved tank tables and plans

Where there is any doubt as to the veracity of the MARPOL Sample provided, or where the supplier fails to provide a MARPOL sample or an agreed binding sample, the receiving vessel should endeavour to seek the agreement of the bunker supplier to utilise the vessel’s representative sample [MEPC 182(59)] as the MARPOL and binding sample. The sample should be labelled and numbered for inclusion with the supplier delivered sample, when provided, and additionally recorded in the BDN where agreed. The records of the additional samples should also be maintained in this case. An inventory of a complete set of sample kits as provided by testing laboratories should always be maintained on board for this purpose.

Dispute resolution

The Owner or Charterer should immediately notify its P&I Club and/or FD&D provider in the event of a dispute. The Owner’s Hull & Machinery underwriters / Charterers’ Damage to Hull underwriters should also be notified if the vessel’s machinery has been damaged. If the seller was not the physical supplier, a buyer should also consider notifying the latter in the event that it is possible to bring a claim in tort.

Where not already in place an independent surveyor should be immediately appointed for protecting the interest of the party.

In certain jurisdictions a supplier of fuel oil may have a maritime lien against the vessel. Where a vessel is on charter, Owners can try to protect the vessel against such claims by serving a ‘prohibition of lien notice’ on the supplier before the supply takes place. The supplier is then on notice that the fuel oil is supplied for the account of the time charterer alone and no lien is attached to the vessel. The BDN may be similarly endorsed by the ship owner, although the legal effect is questionable.

Dispute resolution procedures may also be specified in the contract, including how the laboratory analysis is to be carried out in case of a fuel oil quality dispute.

Retention and storage

The representative sample per Regulation 18 of Marpol VI ‘Marpol sample’ is required to be retained for 12 months or until the complete bunker supply has been consumed, whichever is the longer period. The PSC will request for the MARPOL sample along with the BDN in case of an alleged violation of the emission regulations.

A record of the samples taken and retained should be maintained, including details of appropriate disposal upon completion of the statutory period and when there is no ensuing dispute.

The BDN must be retained by both parties for a period of three years and be readily available for PSC inspections.

Similarly, the supplier is also required to retain the BDN for the same period of at least three years and available for verification by the port state. The supplier should retain their representative sample for a minimum of 30 days (3 months recommended) and longer in case of a dispute, when it should be retained until resolution.

The bunker sample should be stored outside the accommodation and preferably outside the engine room in a sheltered space away from direct exposure to sun light and not subject to elevated temperature, recommended as at least 28°Celsius below the flash point. A copy of the Material Safety Data Sheet must be displayed at the location.

General recommendations

In order to be able to draw out fair terms of contract close cooperation between parties involved in the bunkering process is strongly encouraged. Although experience suggests that this can be difficult to implement. The possibility for longer term contracts with suppliers should be explored where the vessel operations allow.

It is imperative that the contractual terms are carefully considered (both the supply contract and any relevant charterparty)

Diligent pre-planning, following well established procedures, maintaining full documentary records, duly signed/witnessed and taking careful and representative sampling is paramount in avoiding a dispute and to support resolution where dispute arises.

MEPC.1/Circ. 875 - Guidance on Best Practice for Fuel Oil Purchasers/Users for Assuring the Quality of Fuel Oil Onboard Ships, also provides valuable information and guidance.

Crew understanding and training is imperative in order to ensure that the bunkering procedures are being strictly adhered to and that records are being meticulously maintained.

Although limited in their range of analysis, onboard testing kits could prove useful in verifying the basic properties of the fuel oil such as density, water content and viscosity and raising any concerns for an early intervention in anticipation of a potential dispute. The on-board testing should, however, not be considered a substitute for laboratory analysis carried out as per ISO specification.

The factors that need to be taken into consideration are the quality assurance in the supply chain, contractual compliance, segregated stemming and storage, fuel analysis and fuel management.

Members are encouraged to make use of the ISO 13739:2010 and regional standards such as SS600 & SS524 Singapore Standards for Code of practice for bunkering. Local requirements for bunkering must always be followed. For vessels trading to the United States the USCG 33 CFR 155 also requires that their requirements are incorporated within the bunkering procedures, followed, recorded and available for inspection.

Members are encouraged to maintain a register of all fuel suppliers in their area of operation and to regularly update the information based upon their fleet experience and other pertinent information that may be publicly available such as the IMO Global Integrated Shipping Information System (GSIS).

For further articles on the topic:

https://www.steamshipmutual.com/publications/Articles/compliance2020sulphurcap092018.htm

https://www.steamshipmutual.com/publications/Articles/bunker-time-bars052019.htm

https://www.steamshipmutual.com/publications/Articles/turkeyundeclared-bunker-cases-at-turkish-ports022020.htm

https://www.steamshipmutual.com/RA60_Bunker_fuel_quality_problems.pdf