The Seafarers' Identity Document

Moving to an e-SID compatible with ICAO Doc 9303

by John Campbell

Allowing shore leave to seafarers has been common practice for centuries. In 1958 the International Labour Organization codified this by creating the Seafarers' Identity Documents Convention, 1958 (No. 108). This convention guaranteed the rights of seafarers to temporarily enter a country for the purpose of shore leave. It also required seafarers to hold an identity document that proved that they were legitimate in order to exercise this right. In the context of 1958, requiring any identity document was a step forward, but since then more security has been applied to international travel and so the SID needed to be modernised.

Approximately 90% of all trade goods move by sea. Most international seafarers spend six to nine months on board their vessel before they can return home. They work long hours and may not have access to medical facilities or even to telecommunications to contact their families, except for those times when their vessel is in port. Seafarers' need for shore leave to access such facilities at ports visited by their vessels is clear. Shipping companies also need to have seafarers cross borders when they join and leave ships, which requires border facilitation at sea ports and air ports. To ensure that the privileges of facilitated border crossing for shore leave, transit, transfer and repatriation are provided only to genuine seafarers, a seafarers' identity document (SID) has traditionally been used both to authenticate the identity of a seafarer and to demonstrate that they are a legitimate seafarer.

The Seafarers' Identity Documents Convention, 1958 (No. 108)

The International Labour Organization (ILO), established in 1919, is a Specialized Agency of the United Nations (UN). It is a tripartite organisation, in which representatives of governments, employers and workers take part with equal status. In 1958, the ILO adopted the Seafarers' Identity Documents Convention, 1958 (No. 108) to codify the minimum mandatory details that should be contained in the SID and to guarantee the right of seafarers to shore leave. Convention No. 108, however, didn't require any security features on the document and didn't specify anything about the form of the document. Over the years different countries developed a plethora of documents ranging from a long-form letter signed by the captain of a vessel to a special version of the national passport only issued to seafarers. It was very difficult for authorities such as border guards or port police to determine whether or not a document was legitimate.
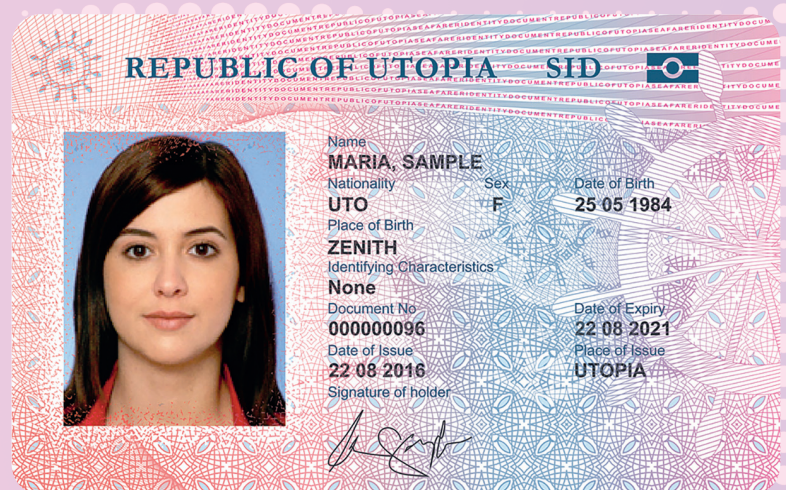
The Seafarers' Identity Documents Convention (Revised), 2003 (No. 185)

After the events of 11 September 2001, there was a need for increased security at sea ports. The International Maritime Organization developed the International Ship and Port Facility Security Code and asked the ILO, as part of a measure described in that code, to develop a new, more robust SID. The ILO relied heavily on ICAO Doc 9303 in developing the specification and eventually adopted the Seafarers' Identity Documents Convention (Revised), 2003 (No. 185). This specified a new SID that was harmonised both in form and in content with ICAO Doc 9303 as it existed in 2002. It could be either credit card (TD1-) sized or booklet (TD3-) sized and it contained a machine readable zone. It also specified a biometric to link the document to the seafarer. After much debate at the ILO, the biometric selected was two fingerprint templates using an early version of the ISO/IEC 19794-2 standard. The templates were encoded into a two-dimensional barcode which was printed on the SID and could be read with a commercial barcode gun or with a full page passport reader.

John Campbell is a subject matter expert on biometrics and identity documents. He has been a Technical Advisor to the International Labour Organization since 2004. He also provides guidance on implementation of biometrics and identity systems to multiple governments. Since its inception in 2002, he has participated in ISO/IEC JTC-1 SC 37, the international committee on biometric standards, and has been editor or co-editor of eight ISO standards.

Figure 1:
Front side of a TD1-size SID specimen.

Figure 2:

Reverse side of a TD1-size SID specimen.

Global practice under Convention No. 185

Globally, there are approximately 1.65 million seafarers serving on internationally trading merchant ships. Some countries permit other types of seafarers to have an SID, but the total number of SIDs in circulation is probably less than three million. This is a small number of documents, but the fact that international seafarers travel to so many different countries and the fact that they are entitled to shore leave without a visa, means that the integrity of the document that entitles them to visa-free entry is very important.

On the ILO website, there are 54 ratifications of Convention No. 108 that are still in force and 32 additional ratifications of Convention No. 185. This means that 86 countries are legally bound to accept the SID and to issue it to their own seafarers, but in practice every seafarer-supplying nations provides their seafarers with some form of SID and almost all nations grant seafarers visa-free shore leave.

Issuance and verification complexities

There have been some complexities in issuing and verifying SIDs as defined under Convention No. 185. Firstly, the use of two fingerprint templates rather than images (which was necessitated by the limited storage space available in a barcode) meant that every issuing authority and every verifying authority needed a fingerprint sensor and algorithm capable of working with the ISO 19794-2 minutiae template. Since interoperability can't be assumed when working with standardised minutiae templates, the ILO had to institute a fingerprint interoperability testing programme that created a list of approved fingerprint products. This was both time-consuming and expensive.

Secondly, although the machine readable zone (MRZ) was standardised in ICAO Doc 9303 so that access to readers was common, the use of a two-dimensional barcode as a storage mechanism was mentioned but not standardised. It was therefore not normal practice for border authorities and port authorities to have access to a barcode reader that could correctly decode the two-dimensional barcode in the SID. In fact, once the 6th Edition of ICAO Doc 9303 Part 1 was published in 2006, the references to two-dimensional barcodes were removed as the mandatory storage medium for biometric data was a contactless chip.

These problems meant that both the issuance and verification of the SID under Convention No. 185 were more expensive and more complex, albeit more secure, than was previously the case with Convention No. 108 SIDs. Eventually the ILO realised that the solution was to bring the SID into complete alignment with ICAO Doc 9303 so that the wealth of global experience in both issuing and reading e-Passports could be brought to bear on SIDs. To this end, in 2016 the ILO adopted a revision to the Annexes of Convention No. 185 that did just that.

Revision of Convention No. 185

The goal of this revision is to transform the SID into an e-SID fully compatible with ICAO Doc 9303 so that it can be issued easily and verified at borders with the same equipment currently used to read e-Passports. SID-issuing authorities have a five-year transition period to update their systems, although individual countries may choose to start issuing the new SID as soon as they are able to. Although the text of Annex I of Convention No. 185 now references specific sections and parts of Doc 9303, it contains the following text to ensure that SIDs will remain in compliance with any future changes approved by ICAO: "The term 'Doc 9303' shall be understood as referring to the Seventh Edition, 2015, as published by ICAO and as it may subsequently be amended in accordance with the related procedures of ICAO. References in this Annex to particular provisions of Doc 9303 refer to the Seventh Edition, but shall be understood as also referring to the corresponding provisions of any subsequent edition."

Document size

The SID can potentially be a TD1, TD2 or TD3-size document. The TD1-size is beneficial because it can fit in a seafarer's wallet and is less likely to be lost. This is similar to a passport card. The TD3-size is suitable

when existing infrastructure for e-Passport issuance is being used to issue SIDs. The SID is not a passport, however, so any extra pages in the booklet are to be left blank and if the seafarer receives entry or exit stamps or visas, they should be placed in the seafarer's national passport. The reason for this is that seafarers are required to hold the SID as part of their employment and the seafarers unions have made it clear that they prefer to have their passport as a separate document which makes no mention of their employment as a seafarer. As this seemed a reasonable privacy request, the practice followed by several countries of issuing a single document that functioned as both an SID and a national passport is no longer permitted. Currently there are no TD2-size SIDs being issued, but the option was permitted for completeness.

Data fields

Figure 1 shows the front side of a sample TD1-size SID. All of the data fields shown are mandatory and no other data fields are permitted. Personal details are the seafarers' name, date of birth, place of birth, sex, nationality and any identifying characteristics. If the seafarer has no identifying characteristics or the issuing authority chooses not to record any, then the field is still printed on the document but is filled with one of the words 'None', or 'Aucun', or 'Ninguna', depending on the language choice of the issuing authority. The document details are the date of issue, date of expiry, place of issue and document number. In Zone I at the top of the document are the issuing state, the document type and the 'chip inside' symbol.

Figure 2 shows the reverse side of the sample SID. It contains the mandatory text: "This document is a sea-farers' identity document for the purpose of the Sea-farers' Identity Documents Convention (Revised), 2003, of the International Labour Organization. This document is a stand-alone document and not a passport."

The reverse side also provides the contact details of the issuing authority so that any questions about the validity of the SID can be answered directly by the issuer. Each SID-issuing authority is required to maintain a 24/7 focal point that can respond to queries about its SIDs.

Figure 3:
Biodata page and facing page of a TD3-size SID specimen.

Figure 3 shows the data page and facing page for a TD3-size SID. It contains the same information as the TD1-size SID, except that in accordance with Doc 9303 Part 4, there are three additional data fields. In Zone I, the document code or type is printed as 'PK' and the issuing state is listed by its ISO three-letter country code. In Zone III, the issuing authority is listed. The only other differences are that the document number is in Zone I instead of Zone III and the machine readable zone is a two-line MRZ.

Contactless chip

All sizes of SID include a contactless chip which contains Data Group 1, Data Group 2 and the Document Security Object defined in ICAO Doc 9303. Data Group 1 contains a copy of the data from the MRZ and Data Group 2 contains a facial image of the seafarer. Since facial recognition is being used to authenticate travellers using automated border control systems in many countries, the ILO has dropped the requirement for fingerprints to be in the SID. This avoids all the complexities associated with interoperable fingerprints and allows the SID to be verified in exactly the same way as an e-Passport. Of course, each SID-issuing authority now has to ensure that the public keys associated with its SIDs are distributed to all relevant border agencies, preferably through the ICAO PKD. If they already have an e-Passport issuance system that participates in the ICAO PKD this is very simple so there is a strong incentive for the SID-issuing authority to collaborate with the e-Passport-issuing authority in each country.

Conclusion

The SID is a vital document to allow seafarers to be given their longstanding right to visa-free shore leave and facilitates border crossing as part of their employment while still maintaining border and port security. The latest revision of ILO Convention No. 185 defines an e-SID that looks and functions like an e-Passport booklet or card. It can be issued with the same equipment used to issue e-Passports and read and authenticated exactly like an e-Passport. This should greatly simplify both the tasks of issuing SIDs and of verifying the identity of seafarers when they arrive in ports or cross international borders.

Finally, there is a three-line machine readable zone (MRZ). It is important to note that the first two letters of the MRZ are 'IS' for the TD1 and TD2-size SID, but 'PK' for the TD3-size SID. This is because ICAO Doc 9303 Part 4, which governs TD3-size documents, has a specific note that the first letter of the document code for seafarers' identity documents shall be 'P', whereas Part 5, which governs TD1-size documents, has a requirement that the first letter of the document code may only be 'A', 'C' or 'I'. With many two-letter combinations such as 'PS' and 'PI' already used by various states for specific documents, 'PK' was the only choice available.