Future Landing sites and Passenger Terminals

For FUSETRA;

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Over four years, and over 7000 commercial operations on water, I have found that it is imperative that the operation must be in accord with surface commercial operations and harbour or port control officials, as well as the local maritime authorities and to a certain extent, local environmentalists.

This is the only way in which we can obtain their confidence, which will eventually result in a smooth and well organized operation. At start of operations, these authorities have reservations as to the ability of the seaplane to operate safely in the pattern of operations on the surface, as well as their impact on the environment and the infrastructure. These same reservations are also held by the National Aviation Authorities and it is only through a healthy well structured Accident Prevention and Flight Safety Programme that these reservations can be reduced to a risk level that is acceptable to all the regulating authorities concerned. Over time, these same authorities then develop confidence in the seaplane operator, and through the operator a faith in seaplane operations. The first seaplane **operato**r in any state, is the conduit of confidence and trust between the regulator and future seaplane operations.

The greatest difficulty for the new operator is to convince the authorities that there should be no marked or rigid rule as to the exact landing and maneuvering areas for safe seaplane operations.

What is required is that the general area where landing and takeoff will take place must fit into the aerodrome profile requirements as far as permanent structures will allow for approach and takeoff slope angles. I say permanent in that at any time large surface vessels such as seagoing shipping may berth alongside the takeoff and landing area (TOLA). It must be emphasized to the authorities that on the occasions when these temporary obstructions such as large ships are present, they should not cause flight operations to cease. As all seaplane operations are strictly day VFR only, and as there is flexibility in the actual TOLA, operations can safely continue without disruption to the port authorities, shipping in general or the seaplane operation. This would not be the case if clearly defined and marked ‘runways’ are required. The only marking that would be necessary are in areas where there are significant tidal movements, and the lowest tide acceptable level needs to be marked. Naturally a windsock should be erected in a significant position.

The best way to convince the authorities is to demonstrate the ability of the seaplane to safely operate in busy shipping/boating areas is to take them up in the aircraft and demonstrate the aircrafts maneuverability, its stopping capabilities, and the fact that the pilots elevated visibility coupled with the vast difference in relative speeds of aircraft versus shipping makes for a simple safe operation. This is provided strict operating procedures are promulgated by the seaplane operator, and adhered to by pilots at all times.

There can be no doubt that if the seaplane is to operate in strictly marked areas, the result would be disruption to both surface vessels and seaplane operations. One of the few advantages that seaplane operations hold over traditional aircraft movements is that it does not require a dedicated section of a nominated area of water to provide safe commercial air operations. This results in a minimum impact on the infrastructure, and the provision of landing sites at minimal cost to

the local/regional governing authorities for the provision of an air service connecting resorts to larger centres or international airports.

I believe that for at least the next two decades, seaplane operations in Europe will only be sustainable as a commuter service linking tourists to their holiday homes, yachting marinas and other purpose built resorts such as golfing holidays with their arrival terminal. It is also a fact that the commuter service would rely heavily on the sales of scenic or pleasure flights as an additional, and very necessary, source of revenue.

The major terminal of tourist arrival would in all cases be an international airport; however, it can be advantageous to road transport the tourist to the nearest seaport where a landing site is situated for connection to their resort by straight seaplane and so avoid the need for an amphibian aircraft.

Airport taxes in Europe are somewhat excessive, and the direct operating costs of an amphibian versus straight floats are prohibitive. There are also the difficulties surrounding security when arriving at major airports from the resorts with passengers to be considered. Seaplane operations need to be cost effective in order to succeed, and cutting costs in this manner (as opposed to cutting corners) is an added safe, advantage to the seaplane operation (it is my belief that no more than 10% of a successful seaplane operators fleet should be amphibian).

In almost all cases, the time to transfer passengers from a major airport to a location where the seaplane is able to operate on water is minimal, and the resultant time saving in arrival at their holiday destination can still be measured in hours when considered against other means of resort/airport connections.

The whole sky, waterways and off-shore locations of Europe can be thrown open to the seaplane operator for the convenience, delight and pleasure of tourism, but not necessarily to the delight and pleasure of others in the immediate vicinity.

The location and facilities for the handling and checking of passengers at the landing site need to be as unobtrusive as possible. The ‘seadromes’ as shown by Beriev during the third workshop are not at all practical for present day operations in Europe. It should be remembered that a cruise liner berthed for a day at the seaport generates thousands of Euros for the seaport owners. Should the seaplane operator construct a similar site, and so take up the same amount of Quay space (as shown by Beriev), it would need to generate the same amount of revenue per day which would be an impossible task. The solution is a secure pontoon, in a position where it has the least disruptive affect on surface operations, and where passengers can be easily and safely escorted to and from the check-in area and the aircraft.

A successful seaplane operation relies heavily on its ability to handle quick turnaround times. Considering aircraft performance, and the need to maximize revenue, fuelling needs to be completed between flights. To accomplish this there must be a safe easy and rapid means of securing aircraft, passenger handling, fuelling and dispatching the aircraft efficiently. This only comes with experience and a good design of the landing site facilities.

It should be noted that the author emphasizes regularly in this paper safety. For all forms of commercial air transport within Europe, the first consideration that any regulator will want satisfied is the safety management shown by the seaplane operator in all phases of the operation. In the case of a seaplane operator, the management is not only responsible for the safe operation in accordance with the

AOC, but is also responsible for a lot of other disciplines normally managed by another agent. These include, but are not limited to:-

- Airport management
- Rescue and fire fighting services
- Security
- Fuel farm, fuelling and fuel storage
- Passenger check in and handling

As such the Safety Management Plan must cover all these disciplines

The design and management of the landing site for seaplane operations should not be taken lightly, and needs constant monitoring as well as regular up-dating. It should also be noted, that although there are a multitude of sites in Europe, which at fist glance appear to be suitable for seaplane operations, further study will often show this perception to be deceptive.

If a seaplane operation is to be successful the choice of landing sites is a complex issue requiring experience and careful consideration in terms of geographic relief, prevailing wind and weather considerations, availability of fuel and other necessities, and last but not least, good market research.

Remembering that the first seaplane operator in any member state will eventually be the 'yardstick' on which the NAA (and subsequently EASA) will base their standards for future operations, and upon which they will gain the necessary confidence to allow seaplane operations to thrive, it is imperative the operator shows maturity and good common sense in how they will manage the complete operation. A major part of this will be in the selection, construction and management of the landing site.

The operator who wishes to operate to a site where there is no local management, safety structure and rescue facilities is the operator who will be responsible for the failure of seaplane operations to thrive and become a necessary form of commercial air transport within Europe.

The operator must determine the lateral. Longitudinal & sloping planes of the airspace & ground/water surfaces surrounding the TOLA that should be kept free of permanent obstacles and should have a reference code, which is based on the largest aircraft likely to be operating.

The regulations require that the landing site should be as near as practical to the requirements of a normal aerodrome. This is difficult to achieve, but the need to strive for 'as near as possible' is imperative.

There must be a safety system that identifies hazards for the whole operation, and in accordance with this paper the landing site. The hazards once identified must be given a risk value in accordance with likelihood and consequences, then the risk must accepted, mitigated or rejected. Any residual risk must be acceptable and defence strategies implemented so as to satisfy the operations management as well as the NAA. Without these very important and essential components properly covered, the operator is most likely to harm sensible professional commercial seaplane operators and risk causing the future of seaplane operations to stagnate.

There must be a Landing Site Manual constructed in the same manner as any other airport manual, and acceptable to the NAA.

The manual should cover: (This list is not exhaustive, and this manual is a stand alone manual and not part of the Operations Manual suite)

- Introduction which includes a statement by the Accountable Manager
- System of amendment & revision
- Organisation structure
- Nominated Management
- Duties & responsibilities
- Legal Position
- Landing site characteristics
- Operating procedures
- Fuel farm management and fuel storage
- Safety and risk assessment
- Safety Management
- RFFS

And last but not least, a diagrammatic layout of the landing site showing approach paths, taxiways, ramp areas and significant permanent obstructions.

These are all the basic steps towards the world of seaplane operations, but we must remember that there is a considerable amount of self discipline and application required of the commercial operator if the venture into seaplane operations is not to be placed in jeopardy, and so return to the level of stagnation it has suffered since around 1947.

About the author

Barry Lightening has been the Flight Operations and Ground Operations Manager of a European seaplane operation which can arguably be considered as the most experienced, successful, and in terms of passenger miles, the largest seaplane operation in Europe.

While 4 years of operations and over 7000 incident free commercial water movements in general terms cannot be considered as well experienced, he has had to developed the airline as well as his own knowledge of seaplane operations during a phase when commercial seaplane operations in Europe had become stagnant, and as such was required to learn the 'hard way'.

The knowledge gained through this experience is now being distributed through FUSETRA to help other existing and/or potential seaplane operations in Europe.

GLOSSARY

Maneuvering Area……..One or more Maneuvering areas may be established on the landing site
Movement Area……This is an area of water within the landing site on which seaplane operations may take place.
Landing Site……An area of water available for the use of seaplanes
LS……Landing Site
NAA……National Aviation Authority
Seaport……Harbour or Port used for shipping activities
TOLA……..Take off and landing area at a landing site