

EI 1597

Procedures for overwing fuelling to ensure delivery
of the correct fuel grade to an aircraft

2nd edition

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PROCEDURES FOR OVERWING FUELLING TO ENSURE
DELIVERY OF THE CORRECT FUEL GRADE TO AN AIRCRAFT

2nd edition

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FOREWORD

This Recommended Practice has been prepared by the EI's Aviation Committee. It is intended to provide recommendations to assist those involved in overwing fuelling of civil aircraft to ensure that the correct fuel grade is always delivered to an aircraft, thereby preventing aircraft misfuelling (e.g. delivery of the incorrect fuel grade to an aircraft during overwing fuelling).

This publication is intended to provide recommendations for safe practice, rather than rigid guidelines. Users of this publication shall be aware that due consideration shall be given to the effect of any unusual or abnormal circumstance, on which it is not possible to generalise within the scope of this publication. Specialist advice shall be sought in these cases.

The guidance contained in this publication is primarily intended for overwing fuelling operations of civil aircraft.

In addition, in some areas local or national statutory regulations also apply. This publication is intended to be complementary to these established controls and practices.

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Suggested revisions are invited and should be submitted to the:

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1 INTRODUCTION – ALL MISFUELLING INCIDENTS ARE PREVENTABLE

1.1 DELIVERING THE CORRECT GRADE OF FUEL TO AN AIRCRAFT

For the safe operation of aircraft **IT IS CRITICAL** that a system of procedures and specific equipment is implemented to ensure the correct fuel grade is always delivered to aircraft during overwing fuelling.

The system depends on clear, well-defined communication between the into-plane fuel service operator and the customer regarding the fuel grade to be delivered by overwing fuelling on every occasion that an aircraft is fuelled.

The delivery of an incorrect grade of fuel to an aircraft can have severe consequences that may result in engine failure.

This publication provides a system for use by aircraft fuelling ground staff to assist with the delivery of the correct aviation fuel grade to an aircraft during overwing fuelling.

Misfuelling incidents have occurred at single fuel locations when aircraft have landed and requested fuel unaware that the grade they require is unavailable. Therefore this publication is applicable equally to locations that supply only jet fuel or only avgas, as well as those locations that supply both grades.

1.2 THE NEED FOR A MISFUELLING PREVENTION PROGRAMME

Delivering the incorrect type or grade of fuel into an aircraft is termed a 'misfuelling'. For piston engine aircraft this includes:

- delivery of jet fuel to a spark ignition piston (e.g. avgas) engine aircraft, or
- delivery of avgas fuel into a compression ignition (e.g. diesel) piston engine, or
- delivery of avgas into a spark ignition piston engine where the octane level of the delivered avgas is lower than the required octane level for the engine.

For jet turbine-powered aircraft this includes:

- delivery of avgas to a turbine powered aircraft.

The risk of delivering the wrong grade of fuel exists because many General Aviation (GA) aircraft and some schedule, commuter and charter airline type aircraft are fuelled by an overwing procedure and can therefore be potentially fuelled with avgas or jet fuel as the fuelling nozzles used may be non-selective (e.g. can fuel aircraft requiring either type of aviation fuel).

The serious consequences of misfuelling include:

- Total engine failure due to knock damage if jet fuel is delivered into a spark ignition piston engine powered aircraft that requires avgas.
- Ignition failure if avgas is delivered into a compression ignition (diesel) piston engine powered aircraft that requires jet fuel.