

14. FUEL SERVICES

Mission:	
Date of assessment:	
Name of person doing the assessment:	

Determine appropriate level of risk and put score in the respective “S” column:
 1 – for low risk; 2 – for medium risk and 3 – for high risk

14.1. Fuel storage areas, equipment and facilities

	Area	Low Risk	S	Medium Risk	S	High Risk	S
1	Are fuel storage areas secured correctly?	Yes, physical barriers and/or fencing are in place and continuous observation such as security personnel are present at all times.		Area is fenced off; workers are always there during the day and security personnel at night. Area is not fenced off, but security personnel are present 24/7.		Area is not fenced off and no security personnel are available.	
2	Is fuel farm adequately labelled and identified as such?	Yes, visible “Danger”, “Flammable” and “No Smoking” signs are in place, fuel type/grade are marked on each tank.		Fuel type/grade is marked on tank, but danger, flammable and no smoking signs are lacking. Or vice versa.		Fuel type/grade is not marked on tank and no visible danger, flammable and no smoking signs are in place.	
3	Does each tank have a data plate displayed on a visible external surface or registration number in the case of a bladder?	Yes, data plate is displayed with the following information: the product and grade, serial number of the tank, due inspection date, due cleaning date and tank capacity. Registration number of the bladder is available.		Data plate is available but is not displayed on a visible external surface. Data plate is available but the information is barely legible.		No data plate is available. Data plate is available but information illegible. Bladder’s registration number is not available.	
4	Are fuel farms set up a safe distance from areas of normal operation?	Yes, tanks are at a minimum 9 meters from apron or other aircraft parking areas. No fuel depots are located within 150 meters on either side of the runway centre line.		Tanks are between 5 to 9 meters from apron or other areas of normal aircraft operation. Fuel Depot is located between 100 and 150 meters on either side of the runway centre line. Fuel Deposit is located between 40 and 60		Tanks are less than 5 meters from apron or other areas of normal aircraft operation. Fuel Depot is located within 100 meters on either side of the runway centreline. Fuel Deposit is located within 40	

		No fuel depots are located within 60 meters on either side of taxiway centreline.	meters on either side of taxiway centreline.	meters on either side of the taxiway centreline.
5	Are fuel tanks constructed and set up adequately?	Yes, they contain pressure/valve relief valves, sump. Vertical tanks have a cone down bottom with a minimum 1:30 slope to the centre sump, appropriate tank lining, filter/water separators, a manhole chamber if tank is buried. Underground tanks are sloped to provide a low point for removal of water and other contaminants.	No pressure/valve relief valve is available, but it does have a "free vent" device. Slope is below the minimum 1:30 required. Underground tanks aren't sloped, but a low point for removal of water and other contaminants is available.	No vent device available. No sump. No filter/water separators. Underground tanks aren't sloped, and no low point for removal of water and other contaminants is available.
6	Are the tanks equipped with rainproof vents?	Yes, all have rainproof vents located at least 12 ft above grade.	Yes, they have rainproof vents, but these are located below 12 ft above grade.	No rainproof vents are installed.
7	Are adequate grounding points available for tanker off-loading?	Yes, each tank has a proper ground connection.	There are grounding points available, but their condition is uncertain.	No grounding points are available.
8	Does a lightning conductor protect the installation?	Yes, lightning conductor is present. Lightning conductor has been tested for a resistance less than 106 Ohms.	Lightning conductor is in place, but its resistance has been tested for more than 6 Ohms.	No lightning conductor is in place.
9	Are the tanks inlets colour coded and secured to allow operation only by authorized, trained personnel?	Yes, tanks inlets are colour coded to identify fuel grade and are secured to allow operation only by authorized, trained personnel.	Yes, tanks inlets are colour coded, but they are not secured. Any personnel can operate them. Or Tanks inlets are not colour coded, but are secured to allow operation only by authorized, trained personnel.	No, tanks inlets are not colour coded, and any personnel can operate them.
10	Are the jet fuel storage tanks,	Yes, jet fuel storage tanks, storage area	Jet fuel storage tanks, storage area	Jet fuel storage tanks, storage area

	storage area filter/separator, and fueler filter/separator vessels being sumped daily for water and other contaminants?	filter/separator, and fueler filter/separator vessels are being sumped daily for water and other contaminants.	filter/separator, and fueler filter/separator vessels are being sumped for water and other contaminants, but it's not a daily procedure or no one is supervising this procedure.	filter/separator, and fueler filter/separator vessels are not being sumped daily for water and other contaminants. They are being sumped only before using the facilities (not every day).
11	Are fuelling agents involved in handling fuel and lubrication products for aviation use trained and qualified for the duties they are meant to perform?	Yes, all have completed a recognized aviation fuel-training course. All have completed a recognized Aviation Fuel Fire Safety Course. Not all have completed a course but all supervisors have and one is on duty at all times. Recurrent training program is in place and followed.	Not all have completed a recognized aviation fuel-training course and Aviation Fuel Fire Safety Course, not enough trained supervisors to insure there is always one on duty. Recurrent training program is the process of being developed.	Most do not have any real training; available training is on the job only. No recurrent training is given. No Aviation Fuel Fire Safety Course has been received by any of the fuelling agents.
12	Are fuel filters/separators adequate?	Yes, inlet strainer and inflow and outflow filters, micro filters and filter water separators are installed and filter monitors are installed and working. Automatic shut off, for when water is detected in the fuel is installed. A differential pressure gauge or separate pressure gauges for inlet and outlet pressures are installed and working.	Filters, water separators and monitor are installed and working but no automatic shut off is installed. Filters, water separators and automatic shut off are available and working, but monitors are missing, not visible or not working.	Only outflow filters and separators are installed and working. No automatic shut off is available. Pressure gauges are not installed. Pressure gauges are installed but not working.
13	Are available fuel pumps appropriate?	Yes, either an independent pump or one that forms part of the composite unit is available. They have their own filtration,	Filtration, control valves and gauging equipment are installed and working but the 60 mesh Y-strainer that protects the pump inlet is missing.	Control valves and gauging equipment available, but no filtration. No 60 mesh Y-strainer installed. No "emergency stop"

		control valves and gauging equipment; a 60 mesh Y-strainer protects the pump inlet. Pump motor controls are fitted with accessible easily identifiable emergency stop” control. Devise to prevent excessive pressure in the hoses is installed.		Emergency stop” control is available but not easily accessible by operator or not working. Devise to prevent excessive pressure in the hoses is not installed.	control installed.
14	Are hoses, nozzles and outflow connectors adequate?	Nozzles are equipped with “dead man” control and with dust caps. Delivery hose is stored on a reel or suitable stowage brackets, clear of the ground. The hose is an aviation delivery hose, with test certificate indicating manufacturers name, hose type, grade, size & length and so on. The nozzle is stainless steel, trigger operated with static ground wire.		Either the” dead man” control or dust caps are of the nozzles missing Delivery hose is not stored on a reel or suitable stowage brackets but is clear of the ground.	Nozzles and outflow connectors in general do not meet specifications. Delivery hose is not adequately stored.
15	Are adequate fire extinguishers and other equipment available?	Yes, appropriate number of Fire blankets, Dry Powder ABC or B fire extinguishers, Foam fire extinguishers with adequate foam replacement and Fluorochem Foam Fire Extinguisher with adequate foam replacement are available. Fire extinguishers all have current tags.		At least 60% of required extinguishers are available. No Fire extinguishing Foam extinguishers are available, however there are 40% or more of required ABC or B extinguishers available. Fire extinguishers and foam extinguishers are available, but no fire blankets. Some of the available fire extinguishers don’t have current tags.	No extinguishers are available. Extinguishers are not adequate (too small, incorrect type, expired, bad condition etc.) Less than 60% of required extinguishers are available. ABC or B fire extinguishers available, but no foam extinguishers or fire blankets are available. Most of the available fire extinguishers don’t

					have current tags.	
16	Have appropriate fire prevention actions been taken?	Yes, only authorized personnel are allowed in hazardous area, areas have appropriate fire signs, personnel are checked for contraband items before entering hazardous areas (matches, mobile phones, munitions etc.), fire equipment is routinely inspected and maintained, staff have received appropriate training and appropriate equipment for spillage clean up is available.		Most of the fire prevention actions are in place (2 or less of the actions are missing).		Some of the prevention actions are not being carried out (3 or more of the actions are missing). No inspection and maintenance plan is in place for fire equipment.
17	Is an approved Fire Plan in place?					

14.2. Fuel Handling & Quality Assurance

18	Are written records on fuel maintained?	Yes, written records on fuel delivery to include dates, quantities and grade of fuel delivered are kept. Records of all fuel samples and their results are available. Records of maintenance of installation are kept.		Records are kept, but in general they are not organized or well kept. Records of fuel delivery and maintenance are kept, but not of fuel samples. Records of delivery and samples are kept, but not of maintenance.		No records are kept. Very few records are kept; no established procedures are in place for the maintenance of records.
19	Are fuelling agents properly attired with personal protective equipment and do they use it?	Yes, appropriate overalls, shoes, ear defenders, hard hats, protective glasses and gloves are provided. Supervisors insure that equipment is used.		At least four (4) items of necessary equipment are provided. On occasions all do not wear available equipment.		Less than four items of necessary equipment are provided. Supervision and/or enforcement of use is lacking.
20	Are appropriate procedures followed	Yes, upon arrival certificate of		Most of the procedures are followed, however		In general no logical procedures are

	when transferring fuel from a delivery truck to the fuel farm tank and vice versa?	conformity is checked, grade and ullage of tank verified. Seals and grade of delivery vehicle checked, vehicle grounded (earthed), fire extinguishers located and ready for use at least 5 metres upwind of the vehicle, vehicle left to stand for ten minutes and fuel sampled before transfer is initiated. For transfer Staff are located in key positions, vehicle bonded and all necessary connection and valves attached and opened/closed. Once finished the delivery hose is disconnected before the bonding wire is.	there doesn't seem to be a clear order in the way they are done and it is easily to miss one or more steps of the procedure out. Fire Extinguishers are not generally dismantled and deployed.	followed. No standardization is seen between fueling agents most seem to follow their own steps and procedures.
21	Are appropriate procedures used during aircraft refuelling?	Yes, all necessary actions safety distance, aircraft power and electrical equipment, passengers, quality control and hose checks, fire fighting equipment positioned, quantity and type of fuel, positioning of refueller vehicle, positioning of fuel nozzle, bonding and grounding, lightning precautions (when applicable) dead-man controls and all post refuelling activities such as shut down systems, nozzle removal, hose retrieval and	Most of the procedures are followed, however there doesn't seem to be a clear order in the way they are done and it is easily to miss out one or more steps of the procedure. Fire extinguishers are available and in place, but the personnel are not properly trained.	No standardization is seen between fueling agents most seem to follow their own steps and procedures. Fire extinguishers and personnel are not in place.

		fuel quantification & record are accomplished in an orderly and standard manner. Trained personnel with fire extinguishers are in place				
22	Are daily checks of tanks, bladders and fuel vehicles carried out?	Yes, before aircraft is refuelled, one staff hands over to another, every time vehicle is refilled the following are checked: hoses, filter/separators and fuel samples are taken.		Checks are carried out but only before each aircraft is refuelled. Checks are always carried out but fuel samples are not always taken.		Checks are carried out randomly. Checks are hardly ever carried out.
23	Are daily, weekly monthly checks carried out of Fuel Vehicles, dispensers, tanks browsers and hydrants?	Yes, checklists have been developed and are used for all necessary checks. Checklists include the following items: Availability and state of static discharge cable, check and state of engine exhaust system, operability of vehicle brakes and parking brake, check that electrical wiring is insulated, supported and protected against chafing, fire extinguishers, emergency shut off valve or control, no smoking signs inside the cab, tires, grade labels and colour coding, hoses and filters/separators.		Checklists are available but not always used (used 5 out of 7 times) Checklists are available for daily checks only. 1 – 3 of the items that should be included are not on the checklists.		Checks are carried out randomly. Checks are hardly ever carried out. No checklists are available. More than 3 of the items that should be included are not on the checklist. Checklists are available but hardly ever used (less than 5 out of 7 times).
24	Are fuel kits provided and samples taken, kept and tested adequately before flights commence?	Yes, appropriate containers are used (clean, clear glass jars with necks and screw caps), samples are retained and kept upon receipt of fuel		Fuel kits are sometimes available. Procedures are available but aren't always followed.		No fuel kits are provided. Procedures for testing are not in place.

		to installation and of 'approved' settled tanks (kept until batch has been consumed), at least 21/2 litre samples are taken, visual examination is carried out (clear, bright and free of solids), density and temperature, water tests and biological growth tests are carried out. If and when necessary Particulate Matter tests are carried out. Fuel kits are provided and available at the airport.			
25	In those cases where no other alternative is available and drummed aviation fuel is used, are drums stored correctly?	Yes, safety distances are kept, drums are kept in secure location and on hard dry land or pallets, on their sides, position of bung is adequate, they are stored in rows of 2 and are only stacked one (maximum 2) layers high.		Drums are stored between 10 and 15 meters of public roads, houses, railways, electrical lines etc. Drums are stacked more than 3 layers high.	Drums are stored less than 3 metres from other hazardous material (flammable gas or liquid, corrosive substances and so on). Drums are stored less than 10 meters from public roads, houses, railways, electrical lines etc. Drums are stacked 4 or more layers high. No security is available.
26	Is shelf life of drums properly managed?	Yes, stock is turned over within 6 months. Procedures are in place to insure oldest stock is always issued first. Drums are checked for leaks on a weekly basis.		Stock is occasionally turned over (less than twice a year) after the six-month period but never over 8 months. Drums are checked every 2 weeks or less.	Stock is often turned over (more than twice a year) after the six-month period but never over 8 months. Stock is sometimes kept for more than 8 months. No procedures are in place to insure the oldest is always issued first.

27	Are adequate procedures used when refuelling aircraft from drums?	Yes, appropriate steps (pre-positioning, setting upright, settling time, testing, bonding, pumping and sealing and segregating) are in place. Trained, personnel with fire extinguishers are in place.	Most of the procedures are followed (at least 6 out of the 8 mentioned steps). Fire extinguishers are in place, but personnel are not properly trained.	Most of the procedures are not followed (less than 6 out of the 8 mentioned steps). Settling time is generally not followed. Drums are generally not bonded. No fire precautions are taken.
28	If fuel bladders are used are they adequately installed?	Bladders have been placed on a firm, flat base, with a 1 in 60 slope. A bund (protective barrier) capable of holding 110% of the tanks maximum capacity has been constructed around it, Bund has a means of draining it in order to clean standing rainwater and such. Adequate shelter has been provided.	The bund only holds 85-95% of maximum content.	Bladders are not on firm, flat ground. Bladders slope is less than 1 in 60. Bund holds less than 85% of maximum capacity. Bladder is not adequately sheltered from weather.
	Points >=28 <= 34 >= 35 <=67 >=68 <=84	Risk Low Risk Medium Risk High Risk		

Total Points:
Level of Risk:

15. AIR TRAFFIC SERVICES

Mission:	
Date of assessment:	
Name of person doing the assessment:	

Determine appropriate level of risk and put score in the respective “S” column:
 1 – for low risk; 2 – for medium risk and 3 – for high risk

15.1. General Specifications

	Area	Low Risk	S	Medium Risk	S	High Risk	S
1	Have Air Traffic Services been established and necessary information published to permit the utilization of the services?	Yes. Services and information are in place in the whole country.		Services are only available in main regions of the country. Published information is scant.		Services are in place in scattered locations. No services are available.	
2	Is there clarity in the type of service that is being provided in the area i.e. air traffic control service, area control service, approach control service, flight information service or/and alerting service?	Yes.		Services are in place, but slight confusion exists in one or two locations as to the exact service that they provide.		No one seems to be very clear as to the exact status of the service being provided.	
3	Have the airspaces been classified?	Yes. Classification exists, is published and is being followed.		Classification existed at one time and information is available. Some classifications are still valid. Airspace is in the process of being classified (should be ready within the next two months)		No classification exists. Original classifications have not been updated and are no longer being used.	
4	Is an updated AIP available?	Updated AIP is available.		AIP is available, however it has not been updated recently and some of the information in it is no longer valid.		AIP is not available. Available AIP is so out dated that most of the information available is no longer valid.	
5	Have ATS routes been identified, established and published?	Yes, routes have been established and published and are in use.		Information on established routes is available, but are used only as reference for		No established routes or information is available.	

			VFR flights.		
6	Are procedures and equipment in place to insure coordination between meteorological and air traffic services?	Yes. Procedures are in place and adequate equipment is available.	Procedures are in place to cover most regions of the country but not all. Communication and meteorological equipment is not in the best of condition.		No procedures are in place. Communication and meteorological equipment where available is suspect.

15.2. Facilities and Training

7	Are adequate towers and other facilities available to provide offered services?	Yes.	Structures are in place, but most need repairs and better furnishings.		No towers available and other facilities are scarce.
8	Are towers and other facilities properly manned for the services they provide?	Adequate number of personnel is available.	Towers are slightly understaffed and some overtime is necessary.		Totally understaffed, overtime is commonplace.
9	Are work schedules in place that insure adequate rest periods for the controllers?	Yes. Schedule is in place and followed.	Written schedule does not exist but supervisors do their best to insure that after a period of overtime, the controller receives a rest period before having to return to work.		No control or programme is in place to insure adequate rest.
10	Do air traffic controllers receive recurrent training?	Yes. Recurrent training program is in place and followed.	Recurrent training is given but not on a regular basis and no specific program is in place.		Hardly any of the controllers receive training, other than the one they received when they became controllers.
11	Are air traffic controllers proficient in English conversation?	Yes. Program is in place requiring good knowledge of the English language. Only those controllers deemed proficient are allowed to work in international airports.	Some controllers have a better knowledge of English than others. English courses are being provided.		Very few controllers have a good knowledge of the English language. This is a common complaint of international pilots flying in and out of the airport/airspace.
12	Are flight information services available?	Yes, information is provided and updated on a regular basis.	Information is available in some airports, but does not cover the whole country. No real system is in place that insures that available information is updated		In general flight information services are not available.

			regularly.		
13	Is an adequate Alerting service in place?	Service is available and notification procedures are in place.	Service is only partially provided; it doesn't cover the whole country.		In general service is not available. Provisional arrangements can be made at some airports.
14	Is the equipment for air-ground communications sufficient to cover the services being offered?	Yes. Basic and back up equipment is available. Equipment enables rapid, continuous and static free two-way communication. Recording facilities are available.	Basic equipment is available. Some do not have back-up equipment. Not all airports provide recording facilities.		Basic equipment is suspect. Most do not have back up equipment and recording facilities are rare or non-existing.
15	Is the equipment for ground-ground communications sufficient to cover the services being provided?	Yes, communications for direct-speech are available. Different services, units and regions are connected	Most services, units and regions are connected. Some difficulties arise especially where the regions are concerned.		In general very little communication exists, especially between regions.
	Points >=15 <= 18 >= 19 <=36 >=37 <=45	Risk Low Risk Medium Risk High Risk			

Total Points:

Level of Risk: