Civil Aviation Authority

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Guidance Material

(Commissioning of Aerodrome Lighting Systems)

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	Name and position	Date	Signature
Prepared by:	Majid Al Hasani / Aerodrome Safety Inspector	06.12.2020	
Authorized by:	Nawaf Said Al Lamki / Aerodrome Safety Director	06.12.2020	
Approved by:	Mubarark Saleh Al Ghelani / DG DGCAR	07.12.2020	

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FOREWORD

This guidance focuses on commissioning of airport lighting systems prior to bring it into operation or when there have been substantial changes to existing installation as per CAR139 (Part 1-Chapter-5). Proper design, installation, maintenance, testing and commissioning of aerodrome lighting systems, are prerequisites for the safety and efficiency of civil aviation. To this end, this material provides guidance on the commissioning process of aerodrome lighting systems.

The guidance material is intended to provide recommendations and guidance to illustrate a means but not necessarily the only means of complying with the Regulations, or to explain certain regulatory requirements by providing interpretative and explanatory material. This guidance material shall always be read in conjunction with the referenced regulations.

This manual is effective from 20 December 2020.

07/12/2020

Mubarak bin Saleh Al Ghelani
Director General of Civil Aviation Regulation

PURPOSE

This Commissioning Guidance Material (CGM) provides general information and advice on the requirements and method of commissioning various aerodrome lighting systems. For those systems that require a ground check and flight inspection as part of the commissioning process. Efficiency and safety of operation of aerodrome lighting systems can only be expected from system that are installed in good operational condition. Proper testing and commissioning is the only key to conform that the installations of an aerodrome lighting systems are as per the specification and requirements.

The manual is intended to give guidance to aerodrome operator on conducting commissioning process on the aerodrome lighting system. Commissioning works, ground check and flight inspection shall be carried out by personal accepted by CAA. The testing and commissioning result report shall be evaluated and actioned by the aerodrome operator effectively and accepted by CAA.

The Civil Aviation Authority (CAA) recommends the practices contained in this CGM for use by airport operator /project in the commissioning of new airport lighting systems or when there have been substantial changes to existing installations. In general, use of this CGM is recommended for all aerodromes subject to CAA Certification.

LIST OF CONTENTS

1. GENERAL

1.1 CAR 139 requires that, at a certified aerodrome, new lighting systems or when there have been substantial changes to existing installations shall not be put into service unless they have been appropriately checked, as follows:

(a) a ground check:

(i) by an electrical engineer or a licensed electrician, who has experience in AGL installations to check for compliance with electrical specifications and technical standards set out in CAA Civil Aviation Regulation (CAR 139);

(ii) by a person with a degree, diploma or certificate in surveying or civil engineering, or experience and competence in surveying acceptable to CAA, to check for those elements of compliance that require the use of survey instruments, for example the angular light beams of a visual approach slope indicator;

(b) a flight inspection, by an approved pilot.

1.2 CAR139 identifies the following lighting systems as requiring both a ground check and a flight inspection:

(a) an approach lighting system;

(b) a runway lighting system for instrument approach runways;

(c) a visual approach slope indicator system for jet-propelled aircraft (other than for a system intended for use on a temporary basis);

Note: All temporary AGL installations shall be tested to the operator satisfaction before being put into operation.

1.3 CAR 139 subsection 5.3.1.16 – 5.3.1.24 explains in more detail the commissioning of lighting systems, including the requirement that all those lighting systems not identified as requiring both a ground check and a flight inspection, shall have the ground check prior to commissioning.

1.4 The aerodrome operator is responsible for submitting documentation supporting commissioning to CAA as per CAR139 subsection 5.3.1.

2. GROUND CHECK – GENERAL PROCEDURES

2.1 The ground check is to ensure the lighting system, as installed, complies with the relevant specifications and standards, as detailed in the CAR 139.

2.2 A ground check report is to be prepared by the person(s) conducting the check. Because of the wide variety of possible checks to be performed, no particular format is suggested for the general ground check report, but all checks performed are to be itemized in the report. The report should detail all the checks made, and any necessary corrective

action as a result of the checks. Where appropriate, the person(s) conducting the check is to certify that the installations of the lighting system meet the relevant specifications and standards as described by ICAO.

2.3 Ground check reports shall be provided to the aerodrome operator, for their use as a document supporting commissioning. CAA inspectors subsequently refer to the ground check reports as part of the continues surveillance of the aerodrome.

2.4 As a minimum, the following should be checked and confirmed:

(a) the scale of lighting systems is at least the minimum required, is appropriate to the type of operations intended to be conducted, the complexity of the aerodrome layout and the traffic density;

(b) the power supply, including primary source, secondary source, switchover time, and electrical circuitry, are in accordance with the relevant standards;

(c) light fixtures are in accordance with the relevant standards, and are fit for the purpose. For checking compliance with photometric standards, the mobile machine for infield measurement shall be used, the use of certified test results from appropriately qualified third parties is acceptable;

(d) light fixtures are correctly located, including spacing, pattern, alignment, and levelling. Methods of mounting or attachment are such that fixtures cannot move and thus become out of alignment or level;

(e) colour of light is correct (because of some of the technologies used to produce coloured light, the lights must be turned on for this check.). For checking compliance with chromaticity standards, the use of certified test results from appropriately qualified third parties is acceptable;

(f) the installation does not pose a hazard to aircraft; equipment and mountings are frangible; footings and foundations do not extend above the surrounding ground level;

(g) overall condition of the installation; cleanliness of optical surfaces; removal of construction materials and potential "foreign object damage" materials; reinstatement and consolidation of surfaces that were disturbed or excavated.

2.5 Control of lighting systems should be confirmed as working correctly. Remote control and monitoring, including fault indication, provided to Control Towers, shall be fully exercised and confirmed, including any interlocks present. Current settings shall be measured and recorded, (with true RMS instruments). Where light-sensitive switches are incorporated into control systems, their location should be checked to ensure correct operation, free from the effect of any artificial lights in the vicinity.

2.6 The ground check of visual approach slope indicator systems, PAPI should also include the additional aspects contained in Sections 3 or 4, below.

3. GROUND CHECK – PAPI

3.1 The ground check is to measure and confirm position, alignment, and light beam angles. It shall be carried out in such a way that the normal aircraft operations at the aerodrome are not affected.

3.2 The results of the ground check shall be recorded for inclusion with the documentation supporting commissioning. A suggested form for recording the results of a PAPI Ground Check is included as Appendix I. When identifying individual PAPI units, the naming convention shown in CAR 139 Chapter 5, "Figure 5-17: The Arrangement of a PAPI System and the Resulting Display", is to be used.

3.3 Before conducting the ground check survey, the surveyor needs to obtain from the aerodrome operator or the PAPI installation designer, the following design details:

(a) the aircraft on which the design was based and eye-to- wheel height group that aircraft is in;

(b) the design wheel clearance over the threshold;

(c) the design approach angle;

(d) the resultant minimum eye height over threshold (MEHT), used in the design;

(e) the critical obstacle within the approach surface, if any.

3.4 Check that the PAPI system has appropriate multiple intensity stages, and that they operate correctly. If there is a maintenance intensity stage provided (typically with current setting of approximately 2.8 amps), this will allow maintenance technicians and ground surveying staff to look into the PAPI units from reasonably close range. If a maintenance intensity stage is not provided, the lowest available intensity stage should be used during the conduct of the ground survey, but the viewing distance in front of the PAPI unit will have to be increased, and this in turn will result in the line of sight being at a higher level above the ground, and the viewer will have to be on a high platform such as a cherry picker.

Note: When the maintenance intensity setting has been used, ensure that the control equipment is re-set to normal operation, following maintenance and/or ground survey checks.

3.5 Check that the PAPI has been located in accordance with the design, particularly in regard to PAPI light spacing, alignment, and distance from the threshold. Any special mounting heights specified in the siting design shall be confirmed, as should minimum clearances from pavements. Levelling of the light units shall be confirmed with the precision instruments appropriate to the particular type of equipment. Alignment of lamps within the light units shall be confirmed in accordance with methods specific to the type of equipment. Foundations shall be examined and an assessment made of their stability and compliance.

3.6 Light Beam Vertical Colour Transition Angles. The following procedures have proved satisfactory. If alternative methods are used, details shall be provided in the Ground Check Report:

a) it should be noted that the colour of the light beam does not change abruptly from red to white (but the colour transition from red to white in the vertical plane shall be in compliance with CAR 139 paragraph 5.3.5.12. The actual angle of colour transition is the average of 2 readings: the mid-point between the highest point at which red only can be seen, and the lowest point at which white only can be seen;

b) set the theodolite on or over the PAPI unit being checked. Measure the distance (x) between the center of the light beam and the center of the theodolite telescope;

c) a survey assistant holding a staff with a moveable marker is stationed 30-50 m (but see paragraph 3.4) in front of the PAPI unit. The marker is fixed at the point where the assistant determines that the colour of the light changes from red to white, in accordance with paragraph 3.6 (a);

d) the marker is then raised vertically for a distance (x). The surveyor reads the vertical angle to the marker with the theodolite;

e) to confirm this reading, the assistant moves to another location in front of the same PAPI unit, and repeats the process, to obtain a second reading; and

f) the process (b) to (e) is repeated for each of the PAPI units.

3.7 The colour transition angles should comply with the following, based on a preferred 3° approach slope.

PAPI Unit	Without an ILS	Harmonized with an ILS
A	2° 30' ± 3'	2° 25' ± 3'
B	2° 50' ± 3'	2° 45' ± 3'
C	3° 10' ± 3'	3° 15' ± 3'
D	3° 30' ± 3'	3° 35' ± 3'

3.8 Light Beam Horizontal Spread. The survey assistant moves laterally towards the runway from the extended centerline of each PAPI unit, until the light is just not visible. The surveyor then measures the horizontal angle of that position. The process is repeated with the survey assistant moving away from the runway. Repeat this process for each PAPI unit.

3.9 Obstacle Clearance Check. Set up the theodolite at one end of the Obstacle Assessment Surface (OAS) base line, which is 60 m before the threshold. With the theodolite vertical angle set to the OAS slope angle, confirm no obstacles penetrate the OAS. Move the theodolite to the other end of the OAS baseline, and repeat the procedure. If a particular obstacle was identified as a critical obstacle for the design of the PAPI, with the theodolite positioned on the OAS baseline and on the extended runway centerline, measure the angle to the top of the obstacle.

3.10 Overall System Check. A pilot's view of the PAPI system can be simulated by viewing the system from height from a cherry picker located an appropriate distance in front of the system. (The distance in front of the system is a function of the height reach of the cherry picker available.) The following checks should be made:

(f) the light units appear to be in a horizontal line;

(g) the light units appear to be of uniform intensity on all daylight settings;

(h) for the night intensity stages, the intensity of the PAPI units is visually compatible with the runway edge lights and the threshold lights;

(i) the colour transition of the individual PAPI units changes in a uniform progression as the viewing position is raised / lowered.

3.11 This overall system check is not critical when a flight inspection is also to be conducted, but for those PAPI installations where a flight inspection is not going to be conducted, this overall system check should be carried out wherever practicable.

4. FLIGHT INSPECTION – APPROVAL TO CONDUCT

4.1 A pilot who wishes to conduct a flight inspection of aerodrome lighting systems at an aerodrome should contact CAA (DGCAR office) whose area of responsibility encompasses the aerodrome, to seek necessary approval.

4.2 An application for approval to conduct a flight inspection of aerodrome lighting systems will be assessed by a CAA (DGCAR). Before granting an approval, he or she will need to be satisfied that the applicant has the following attributes:

a) knowledge of the relevant lighting standard and how the lighting system supports aircraft operations;

b) understanding of the objectives of the flight inspection and parameters to be checked;

c) demonstrated experience in low level flying operations;

d) adequate flying skills and experience to organize and conduct the checks safely, effectively and with minimum disruption to other airspace users.

4.3 The approval process may include an interview, and demonstration flight.

4.4 Approvals given will be in the form of a letter of confirmation of competency to conduct flight inspection of aerodrome lighting systems.

5. FLIGHT INSPECTION – GENERAL PROCEEDURES

5.1 For ease of presentation, a series of steps for checking the lights are set out below. Providing all checks are completed, it is not necessary that the steps be followed in numerical order. Also, with experience, some of the steps may be combined resulting in a reduction in the number of approaches flown.

5.2 Where the lighting system is intended for day and night use, flight inspection will need to be conducted during the day and at night.

5.3 While flight inspection is being conducted, a ground party, consisting of the aerodrome installation or maintenance electrical staff, should be present. The ground party should have the necessary tools, test equipment, and expertise, to make adjustments to the lighting, as requested by the pilot, during the flight inspection.

5.4 A flight inspection report is to be prepared by the pilot, for all flight inspection conducted, including those checks that found the lighting system to be deficient or unacceptable.

5.5 Where appropriate, the pilot conducting the flight inspection is to certify that the performance of the lighting system meets operational requirements for commissioning. The report shall detail all the checks made, including description of all the approaches flown, and any necessary corrective action as a result of the flight inspection. Suggested flight inspection report forms are included as Appendixes II and III.

5.6 Flight inspection reports shall be provided to the aerodrome operator, for inclusion with the documentation supporting commissioning. CAA inspectors subsequently refer the flight inspection reports as part of the on-going surveillance of the aerodrome.

6. FLIGHT INSPECTION – RUNWAY EDGE, THRESHOLD, & RUNWAY END LIGHTS, AND ASSOCIATED LIGHTS

6.1 For each runway direction, check that the runway edge, threshold and runway end lights show a uniform pattern during take-off, landing, and going around. Check that the colour of the lights is correct. Check that there is a progressive and even reduction in the intensity of the lights as the aircraft leaves their area of primary cover.

6.2 Fly the circuit at low level at dusk or dawn (i.e. with light sufficient to avoid any obstacles but dim enough to see the lights) and approach each end of the runway to determine that the visual cues provided by the lights are adequate for a visual circuit and that the lights clearly define the runway.

6.3 Carry out a normal approach from approximately 4 nm, initially with the runway lights at maximum intensity setting. Call for progressive reductions in light intensities down to the minimum setting. Check that all lights respond correctly and simultaneously to the setting changes, and that any period of light extinction between intensities is sufficiently brief as to be operationally acceptable. At a low intensity setting, carry out a low go-around and note and record any light outages or misalignment.

6.4 Whilst on the runway, check that from a height of 3 m above the runway surface, there is an unobstructed line of sight to runway edge and runway end lights within 600 m.

6.5 Taxiway lights

a) Check that taxiway lights provide adequate and un-ambiguous guidance.

b) Check that the colour of the taxiway lights is correct.

c) Check that taxiway lighting, does not cause any confusion to aircraft surface movements.

d) Where runway guard lights, intermediate holding position lights, or stop bars, are provided, check that they are clearly visible from the taxiway when approaching the holding position, and that the location, pattern, colour, flashing characteristic, etc., are correct.

6.6 Movement Area Guidance Signs (where provided)

a) Check that the signs are clearly visible and the inscriptions are legible from runways and taxiways at a sufficient distance prior to the sign, to enable safe aircraft surface movement, by both day and night.

b) Check that the colours of the signs are correct.

6.7 Illuminated Wind Direction Indicators

a) Check that the illuminated wind direction indicator(s) (WDI) are conspicuous from the approach, the circuit area, the apron and the runway threshold.

b) Assess that WDI will show a true representation of surface wind in the vicinity of the runway(s), and not be adversely affected by adjacent structures, trees, etc.

6.8 Apron Floodlights

a) Check that the apron floodlights provide adequate illumination on the apron to maneuver, load/unload, and fuel aircraft, as appropriate.

b) Check that the apron floodlights do not cause glare to a pilot circling, approaching to land, or on the movement area.

6.9 Aerodrome vicinity

a) Check obstacle lights in the vicinity of the aerodrome for operating effectiveness, and for any that are not operating.

b) Check for the presence of extraneous lights on and within 6 km of the aerodrome which may cause confusion.

c) Where an aerodrome beacon is provided, check that it is not visually shielded by objects, does not cause dazzle, flashes at the correct rate, has the correct colour light flashes, and the approximate range at which it can be seen.

7. FLIGHT INSPECTION – APPROACH LIGHTS

7.1 Carry out a normal approach from 4 nm starting with all the approach lights at maximum intensity setting. Confirm that the pattern is correct: either simple approach, Cat I, or Cat II/III, and for Cat II/III systems check that the colour of the side row barrettes is correct. Check that the lights show a uniform pattern. Vary the approach path: a small variation in elevation and azimuth should not present any noticeable change in the intensity of the lights. A large variation should produce a progressive reduction in intensity as the aircraft leaves the area of primary coverage of the lights. These changes in intensity should be similar for all lights. Irregular changes indicate incorrect setting angles of individual light units and should be noted for corrective action on the ground.

7.2 During the approach call for the progressive reduction in intensity down to the minimum setting. Check that all lights respond correctly and simultaneously to the intensity setting changes, and that any period of light extinction between intensities is sufficiently brief as to be operationally acceptable.

7.3 With both the approach lights and the runway lights selected to the same intensity stage, check that the intensity of the approach lights is visually compatible with the runway edge lights and the threshold lights. Repeat this check for all intensity stages.

7.4 With the approach lights set at a suitable intensity setting (the lowest at which the lights are discernible is normally best), check that all the individual lights are illuminated. Note and record any light outages or misalignment.

8. FLIGHT INSPECTION – RUNWAY CENTRE LINE LIGHTS

8.1 Carry out a normal ILS approach from 4 nm starting with the runway centre line lights at maximum intensity setting. Confirm that the pattern is correct, and uniform. (It may be easier to observe this if the runway edge lights are extinguished while making this check.) Check that the colour/pattern of the last 900 m of centerline lighting is correct.

8.2 During the approach call for the progressive reduction in intensity down to the minimum setting. Check that all lights respond correctly and simultaneously to the intensity setting changes, and that any period of light extinction between intensities is sufficiently brief as to be operationally acceptable.

8.3 With both the runway centre line lights, the approach lights and the runway edge lights all selected to the same intensity stage, check that the intensity of the runway centre line lights is visually compatible with the other lighting systems. Repeat this check for all intensity stages.

8.4 With the runway centre line lights set at a suitable intensity setting for the prevailing visibility, (and the runway edge lights also on to the corresponding intensity), carry out an approach, landing, and roll-out to the far end of the runway. Check the adequacy of visual cues, and absence of dazzle. Check that all the individual lights are illuminated. Note and record any light outages or misalignment.

9. FLIGHT INSPECTION – RUNWAY TOUCHDOWN ZONE LIGHTS

9.1 Carry out a normal ILS approach from 4 nm starting with the runway touchdown zone lights at maximum intensity setting. Confirm that the pattern is correct, and uniform.

Note: It may be easier to observe this if the runway edge lights are extinguished, but the approach lights and runway centre line lights are illuminated, while making this check.

9.2 During the approach call for the progressive reduction in intensity down to the minimum setting. Check that all lights respond correctly and simultaneously to the intensity setting changes, and that any period of light extinction between intensities is sufficiently brief as to be operationally acceptable.

9.3 With both the runway touchdown zone lights, the runway centre line lights, the approach lights and the runway edge lights all selected to the same intensity stage, check that the intensity of the runway touchdown zone lights is visually compatible with the other lighting systems. Repeat this check for all intensity stages.

9.4 With the runway touchdown zone lights set at a suitable intensity setting for the prevailing visibility, (and the approach lights, the runway centre line lights and the runway edge lights also on the corresponding intensity), carry out an approach, landing, and roll- out to at least beyond the far end of the touchdown zone lights. Check the coherence of the visual pattern, (but not the colour), provided by the Cat II/III approach light side row barrettes and the touchdown zone light barrettes. Check for the absence of dazzle. Check that all the individual lights are illuminated. Note and record any light outages or misalignment.

10. FLIGHT INSPECTION - PAPI

10.1 The flight inspection is to confirm the system usability. The system is usable if it can be seen and interpreted at a sufficient distance prior to the threshold; the colour changes are sharp; the colour change increments are uniform; and the indicated approach slope is compatible with that provided by other approach aids such as an ILS when provided.

10.2 A suggested form for recording the results of a PAPI flight inspection is included at Appendix III. When identifying individual PAPI units, the naming convention shown in

CAR 139 Chapter 5, "Figure 5-17: The Arrangement of a PAPI System and the Resulting Display", is to be used.

10.3 Day check. Where possible the day check should be carried out in bright sunlight to confirm the visual acuity of the PAPI in the most demanding visual conditions:

a) with the PAPI on maximum intensity stage, position the aircraft at approximately 5 NM from the threshold at 1200 ft AGL on the approach to the runway. Hold this altitude and make a qualitative check of the system to determine that there are no obvious deficiencies such as lights not operating. Check that:

(i) the lights appear of uniform intensity throughout the system;

(ii) the lights appear to be in a straight line, in a horizontal plane;

(iii) the signal changes from red to white is sharp and appears to occur instantly;

(iv) the colour change sequence is even; and

b) during the approach call for the progressive reduction in intensity. Check that all lights respond correctly and simultaneously to the intensity setting changes, and that any period of light extinction between intensities is sufficiently brief as to be operationally acceptable. Select the intensity stage appropriate for the ambient conditions for the remainder of the checks.

c) commence the next approach from approximately 5 NM from the threshold at 1200 ft AGL. Intercept the visual glide path and note the maximum range at which an on-slope indication can be clearly recognized, i.e. the difference between the red and white lights is clearly discernible. The minimum acceptable range is 4 NM in good visibility. While maintaining an "on-slope" indication, note the system sensitivity.

10.4 Compatibility with Non-Visual Aids. Where an instrument glide path is available, carry out an instrument approach maintaining the glide path. Check that the PAPI indicates "on-slope" from a range of 4 NM to the threshold. (Note: The ILS glide path should be near the lower limits of the PAPI "on-slope" signal if an aeroplane with a small eye-to- aerial height is used.)

10.5 **Obstacle check**. From a range slightly beyond 4 NM, fly an approach sufficiently low so as to be just within the all-red indication, i.e. the fourth light unit is indicating just red. Hold this indication throughout the approach and check that there are no obstacles throughout the azimuth coverage of the light beams.

10.6 **Night check**. From a range of approximately 4 NM, fly an approach with both the PAPI and the runway lights on. Call for the progressive reduction in intensity of the lower intensity stages. (Stages 4 to 1 for a 6-stage installation, or Twilight and Night intensity for a 3-stage installation.) Check that:

a) all PAPI lights respond correctly and simultaneously to the intensity setting changes; and

b) the intensity of the PAPI is visually compatible with the runway edge lights and the threshold lights for each of the relevant intensity stages.

   (i) that the lights forming the pattern appear to be substantially in a horizontal plane;

   (ii) that for the cross-bars and the "fly-up" lights, the corresponding lights on either side of the runway change simultaneously;

   (iii) that the corresponding "fly-up" lights on either side of the runway disappear simultaneously;

   (iv) that the corresponding "fly-down" lights on either side of the runway appear simultaneously;

c) fly a straight-in approach and call for the progressive reduction in day intensities (Stages 6, 5, and 4):

   (i) check that the intensities are uniform throughout the system;

   (ii) check that all lights respond correctly and simultaneously to the intensity setting changes, and that any period of light extinction between intensities is sufficiently brief as to be operationally acceptable.

APPENDIX I

GROUND CHECK REPORT - PAPI

Aerodrome	
Runway	
Design Aircraft	
Eye-to-wheel-height group	
Design wheel clearance over threshold	
Design approach angle	
Design minimum eye height over threshold	
Critical Obstacle, if any; (location and height)	
PAPI Manufacturer Type	
Single or Double Sided	
ILS co-sited (Yes/No)	
Any non-standard design aspects, such as reduced azimuth. (Give details)	

	Left Side Light Units A-B-C-D
Distance from Threshold - Design	
Distance from Threshold - Measured	
Distance - RWY edge to D	
Distance - D to C	
Distance - C to B	
Distance - B to A	
Aligned along front of Units (yes/no)	
Aligned in horizontal plane (yes/no)	
Leveling (clinometer setting) of - A	
Leveling (clinometer setting) of - B	
Leveling (clinometer setting) of - C	
Leveling (clinometer setting) of - D	
Foundations, frangibility and stability (yes/no)	
Vertical colour transition angle of - A	

	Left Side Light Units A-B-C-D
Vertical colour transition angle of - B	
Vertical colour transition angle of - C	
Vertical colour transition angle of - D	
Light beam horizontal spread - A	
Light beam horizontal spread - B	
Light beam horizontal spread - C	
Light beam horizontal spread - D	
Obstacle Assessment Surface, vertical angle, and any penetrations	
Critical Obstacle, if any. Angle to top.	

Overall System Check, and General Remarks: -

Add additional pages if necessary)

I certify that I have checked this PAPI installation, and the system meets the Specifications and Standards.

Signature_____ Date _____

Name (print) _____

Qualification _____

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APPENDIX II

FLIGHT INSPECTION REPORT - AERODROME LIGHTING SYSTEMS

Aerodrome		Weather	
Runway		Visibility	
Aircraft		Cloud	
Date		Time	
Crew			

Not all systems listed on this form will necessarily require checking at a particular aerodrome.

LIGHTING SYSTEM (where provided)	FINDINGS satisfactory /unsatisfactory	REMARKS
Runway Lights		
- Edge		
Pattern		
Colour		
Intensity		
- Threshold Including **RTIL** and **Wing Bars**, where provided		
Pattern		
Colour		
Intensity		
- Runway End		
Pattern		
Colour		
Intensity		
Taxiway Lights - Edge		
Adequate guidance		
Colour		
Taxiway Lights – C/L		
Adequate guidance		
Colour		
Runway Guard Lights, Intermediate Holding Position Lights, Stop Bars		
Clearly visible		
Location & Pattern		
Colour		

Intensity		
LIGHTING SYSTEM (where provided)	**FINDINGS** satisfactory / unsatisfactory	**REMARKS**
Movement Area Guidance Signs		
Visible		
Legible		
Colour		
Illuminated Wind Direction Indicator		
Conspicuous - Approach		
Conspicuous - Apron		
Conspicuous - Thresholds		
Truly representative		
No glare		
Apron Floodlights		
Adequate Illumination		
No glare		
Aerodrome Environment		
Obstacle lights		
Extraneous light		
Aerodrome Beacon:-	Present / Not present	
Visual characteristic		
Approx. visual range		
Approach Lights CAT I or CAT II/III (circle the appropriate one)		
Pattern		
Colour		
Intensity:-		
No of Stages		
Intensity changes		
Compatibility with Runway lights		
Runway Centreline Lights		
Pattern		

Colour		
Runway Touchdown Zone Lights		
Pattern		
Intensity:-		
No of Stages		
Intensity changes		
Compatibility with other light systems		

Remarks: -

(Add additional pages if necessary)

I certify that I have flight inspected the aerodrome lighting system/s, and the system/s meets the operational requirements.

Signature _____ Date _____

Name (print) _____

Letter of Competency No. _____

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APPENDIX III

FLIGHT INSPECTION REPORT - PAPI

Aerodrome	
Runway	
Design approach angle	
Single or Double Sided	
ILS co-sited (Yes/No)	
Any design variations from standard layout. (Give details)	

Weather		Visibility	
Cloud		Aircraft	
Date		Time	
Crew			

ITEM CHECKED	FINDINGS satisfactory / unsatisfactory	REMARKS
DAY CHECK		
Qualitative check of System		
- Uniformity of intensity		
- Straight, Horizontal appearance		
- Colour change sharpness		
- Steady progression of signal		
- Double sided – Symmetry (L-R)		
Day Intensities		
– Response to Change of Intensity		
Range of System (4 NM min)		
– Sensitivity of "on-slope" signal.		
– Compatibility with ILS (where present)		
– Obstacle clearance on Approach, with full system just Red, throughout the azimuth of light beams either side of centerline.		
Azimuth restrictions (if applicable)	Confirm effectiveness	
NIGHT CHECK		
Night Intensities		
– Matching of PAPI to Runway (for each Night Intensity)		
– Response to Change of Intensity		

Remarks: -
(Add additional pages if necessary)

I certify that I have flight inspected this PAPI installation, and the system meets the relevant operational requirements.

Signature _____ Date_____

Name (print) _____