

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

N 8900.247

National Policy

Effective Date:
12/4/13

Cancellation Date:
12/4/14

SUBJ: OpSpec/MSpec/LOA B054/MB054 – Class II Navigation Using Single Long-Range Navigation System (S-LRNS)

1. Purpose of this Notice. This notice amends and clarifies guidance for Federal Aviation Administration (FAA) inspectors to authorize and issue Operations Specification (OpSpec)/Management Specification (MSpec)/Letter of Authorization (LOA) B054/MB054, Class II Navigation Using Single Long-Range Navigation System (S-LRNS) to operators conducting airplane operations under Title 14 of the Code of Federal Regulations (14 CFR) parts 91 subpart K (part 91K), 121, 121/135, 125 (including the Letter of Deviation Authority (LODA) 125M operators), and 135. The amendments contained in this notice enable airplanes equipped with S-LRNS to qualify for Required Navigation Performance 10 (RNP 10) authorization for operation in a limited number of designated areas of operations, (e.g., the Gulf of Mexico). This notice amends the applicable B054 templates (i.e., OpSpec B054, MSpec MB054, and LOA B054).

2. Audience. The primary audience for this notice consists of FAA certificate-holding district offices (CHDO) and principal operations inspectors (POI) assigned to operators conducting airplane operations under parts 91K, 121, 125 (including LODA holders 125M operators), and 135. The secondary audience includes Flight Standards Services (AFS) divisions and branches in the regions and in headquarters (HQ).

3. Where You Can Find This Notice. You can find this notice on the MyFAA employee Web site at https://employees.faa.gov/tools_resources/orders_notices. Inspectors can access this notice through the Flight Standards Information Management System (FSIMS) at <http://fsims.avs.faa.gov>. Operators can find this notice on FAA's Web site at <http://fsims.faa.gov>. This notice is available to the public at http://www.faa.gov/regulations_policies/orders_notices.

4. Background. A Special Area of Operation (SAO) conference was held in May 2012 to bring appropriate sections of FAA Order 8900.1, Flight Standards Information Management System (FSIMS), up to date. OpSpec/MSpec/LOA B054 revision was required because it made reference to aircrews following procedures in Advisory Circular (AC) 90-79, Recommended Practices and Procedures for the Use of Electronic Long-Range Navigation Equipment, which was cancelled on September 6, 1994. This notice amends the applicable templates to account for Global Positioning System (GPS)/Global Navigation Satellite System (GNSS) and/or distance measuring equipment (DME)/DME updating the S-LRNS prior to entering and exiting Class II airspace and removes language not applicable to RNP 10 operations.

5. Guidance. The Flight Technologies and Procedures Division (AFS-400) developed this notice. This notice contains the following:

- The sample OpSpec B054 template in Appendix A applies to part 121.
- The sample OpSpec B054 template in Appendix B applies to part 121/135.
- The sample OpSpec B054 template in Appendix C applies to part 135.
- The sample OpSpec B054 template in Appendix D applies to part 125.
- The sample LOA B054 template in Appendix E applies to part 125M (125M LODA).
- The sample MSpec MB054 template in Appendix F applies to part 91K.

6. Action. Inspectors should review the revised guidance for issuance of the paragraph contained in this notice. Inspectors should provide this notice to the operators for whom they are responsible, alerting them to updated operating procedures, as well as required pilot knowledge and training.

7. Disposition. We will incorporate the information in this notice into FSIMS before this notice expires. Direct questions concerning the information in this notice to the Performance Based Flight System Branch (AFS-470) at 202-385-4623.

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/s/ John Barbagallo
Director, Flight Standards Service

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Appendix A. Sample OpSpec B054, Class II Navigation Using Single Long-Range Navigation System (S-LRNS): 14 CFR Part 121

a. The certificate holder shall conduct all Class II navigation operations using Single Long-Range Navigation System (S-LRNS) in accordance with 14 CFR part 121, § 121.351 and the provisions of this operations specification paragraph.

b. Authorized Airplane(s) and Equipment. The certificate holder is authorized to conduct Class II S-LRNS operations using the following airplane(s).

Table 1 – Single Long-Range Navigation System Airplane(s) and Equipment

Airplane M/M/S	Single Long-Range Navigation Systems (S-LRNS)	
	Manufacturer	Model

c. Area of Operation. The area of operation where S-LRNS is permitted is defined by the following description and excludes all the North Atlantic Minimum Navigation Performance Specifications (NAT/MNPS) airspace:

- Beginning at 44°47'20" N/67°00'00" W.
- Hence to 39°00'00" N/67°00'00" W.
- Hence to 38°30'00" N/69°20'00" W.
- Hence to 38°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/58°00'00" W.
- Hence to 07°46'00" N/58°00'00" W.
- Then northwestward along the adjacent coastline of South America, the eastern coastline of Central America, the eastern coastline of Mexico, and the southern and eastern coastlines of the United States to the beginning point.

d. Special Limitations and Provisions. The certificate holder shall conduct all operations using a S-LRNS in accordance with the following limitations and provisions:

(1) Unless specifically authorized elsewhere in these operations specifications, the certificate holder shall **not** conduct Class II navigation operations within:

- Central East Pacific (CEP) and composite airspace,
- North Pacific (NOPAC) airspace,
- NAT/MNPS airspace, or
- Areas of magnetic unreliability (AMU). The S-LRNS shall be operational as required by paragraph B039 (NAT/MNPS) and B040 (AMU), as applicable.

(2) If the airplane is equipped with only a Single Long-Range Communication System (LRCS), the requirements of operations specifications paragraph B045, Extended Overwater Operations Using a Single Long-Range Communication System, must be met.

(3) The certificate holder shall conduct all Class II S-LRNS operations so the airplane is continuously navigated to the degree of accuracy required for air traffic control (ATC). For areas where these accuracy and navigation performance standards have not been formally established, the long-range navigation system (LRNS) must be used to continuously navigate the airplane so that the cross-track and/or the along-track errors will not exceed 25 nautical miles at any point along the flight plan route specified in the ATC clearance.

(4) Prior to entering any airspace requiring the use of a LRNS, for airplanes approved for operations using GPS equipage and/or DME/DME automatic updating, the systems must be confirmed to be functioning normally (no fault indications); for all other airplanes, the position shall be accurately fixed using airways navigation facilities or ATC radar.

(a) After exiting this airspace, the airplane position shall be accurately fixed and the LRNS error shall be determined and logged in accordance with the operator's approved procedures. An arrival gate position check satisfies this requirement.

(b) For airplanes approved for operations and using GPS equipage and/or DME/DME automatic position updating, no exit position fix is required unless there is an indication of LRNS malfunction.

(5) An LRNS fix may be substituted for a required en route ground facility when that facility is temporarily out of service, provided the approved navigation system has sufficient accuracy to navigate the airplane to the degree of accuracy required for ATC over that portion of the route.

(6) At dispatch, **at least one** of the navigation systems listed below must be installed and operational:

(a) One independent inertial navigation system (INS), or

(b) One flight management system (FMS)/navigation sensor combination (or equivalent) suitable for the route to be flown, or

(c) One independent GPS navigation system approved for Class II navigation in oceanic and remote areas.

(7) Flightcrew procedures must be in place and used in the event of the loss of the S-LRNS after dispatch.

(8) Before conducting any operations authorized by these operations specifications, the flightcrew must be qualified in accordance with the certificate holder's approved training program for the system and procedures being used.

e. Airplane(s) Equipped with S-LRNS Authorized RNP 10 in Certain Designated Areas of Operations. Class II navigation using an S-LRNS equipped airplane authorized RNP 10 must be conducted in accordance with the following limitations or provisions:

(1) At dispatch, one of the navigation system configurations listed in subparagraph d(6) must be installed, operational, and (as listed in Table 2) approved for RNP 10.

(2) The certificate holder must ensure that the airplane navigation system will provide RNP 10 performance for the planned flight time in the airspace and, if applicable, that the airplane will be operated within the RNP 10 time limit specified in Table 2 below.

(3) The International Civil Aviation Organization (ICAO) flight plan filed with the Air Traffic Service Provider (ATSP) must show that the airplane and operator are approved for RNP 10. The operation must be conducted using the airplane(s), navigation equipment and specific area of operation listed in Table 2 below.

**Table 2 – Single Long-Range Navigation System
Airplane(s) and Equipment Authorized RNP 10**

Airplane M/M/S	S-LRNS Manufacturer	S-LRNS Model	RNP 10 Time Limit	Area of Operations Where Permitted

Note: *Gulf of Mexico oceanic control areas: the Houston CTA, the Gulf of Mexico portion of the Miami Oceanic CTA, the Merida and Monterrey CTAs.

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Appendix B: Sample OpSpec B054, Class II Navigation Using Single Long-Range Navigation System (S-LRNS): 14 CFR Part 121/135

- a. The certificate holder shall conduct all Class II navigation operations using Single Long-Range Navigation System (S-LRNS) in accordance with 14 CFR part 121, § 121.351 or part 13, § 135.165, as appropriate, and the provisions of this operations specification paragraph.
- b. Authorized Airplane(s) and Equipment. The certificate holder is authorized to conduct Class II S-LRNS operations using the following airplane(s).

Table 1 – Single Long-Range Navigation System Airplane(s) and Equipment

Airplane M/M/S	Single Long-Range Navigation Systems	
	Manufacturer	Model

- c. Area of Operation. The area of operation where S-LRNS is permitted is defined by the following description and excludes all the North Atlantic Minimum Navigation Performance Specifications (NAT/MNPS) airspace:

- Beginning at 44°47'20" N/67°00'00" W.
- Hence to 39°00'00" N/67°00'00" W.
- Hence to 38°30'00" N/69°20'00" W.
- Hence to 38°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/58°00'00" W.
- Hence to 07°46'00" N/58°00'00" W.
- Then northwestward along the adjacent coastline of South America, the eastern coastline of Central America, the eastern coastline of Mexico, and the southern and eastern coastlines of the United States to the beginning point.

- d. Special Limitations and Provisions. The certificate holder shall conduct all operations using a S-LRNS in accordance with the following limitations and provisions:

(1) Unless specifically authorized elsewhere in these operations specifications, the certificate holder shall **not** conduct Class II navigation operations within:

- Central East Pacific (CEP) and composite airspace,
- North Pacific (NOPAC) airspace,
- NAT/MNPS airspace, or
- Areas of magnetic unreliability (AMU). The S-LRNS shall be operational as required by paragraph B039 (NAT/MNPS) and B040 (AMU), as applicable.

(2) If the airplane is equipped with only a Single Long-Range Communication System (LRCS), the requirements of operations specifications paragraph B045, Extended Overwater Operations Using a Single Long-Range Communication System, must be met.

(3) The certificate holder shall conduct all Class II S-LRNS operations so the airplane is continuously navigated to the degree of accuracy required for air traffic control (ATC). For areas where these accuracy and navigation performance standards have not been formally established, the long-range navigation system (LRNS) must be used to continuously navigate the airplane so the cross-track and/or the along-track errors will not exceed 25 nautical miles at any point along the flight plan route specified in the ATC clearance.

(4) Prior to entering any airspace requiring the use of a LRNS, for airplanes approved for operations using GPS equipage and/or DME/DME automatic updating, the systems must be confirmed to be functioning normally (no fault indications); for all other airplanes, the position shall be accurately fixed using airways navigation facilities or ATC radar.

(a) After exiting this airspace, the airplane position shall be accurately fixed and the LRNS error shall be determined and logged in accordance with the operator's approved procedures. An arrival gate position check satisfies this requirement.

(b) For airplanes approved for operations and using GPS equipage and/or DME/DME automatic position updating, no exit position fix is required unless there is an indication of LRNS malfunction.

(5) An LRNS fix may be substituted for a required en route ground facility when that facility is temporarily out of service, provided the approved navigation system has sufficient accuracy to navigate the airplane to the degree of accuracy required for ATC over that portion of the route.

(6) At dispatch, **at least one** of the navigation systems listed below must be installed and operational:

(a) One independent inertial navigation system (INS), or

(b) One flight management system (FMS)/navigation sensor combination (or equivalent) suitable for the route to be flown, or

(c) One independent GPS navigation system approved for Class II navigation in oceanic and remote areas.

(7) Flightcrew procedures must be in place and used in the event of the loss of the S-LRNS after dispatch.

(8) Before conducting any operations authorized by these operations specifications, the flightcrew must be qualified in accordance with the certificate holder's approved training program for the system and procedures being used.

e. Airplane(s) Equipped with S-LRNS Authorized RNP 10 in Certain Designated Areas of Operations. Class II navigation using an S-LRNS equipped airplane authorized RNP 10 must be conducted in accordance with the following limitations or provisions:

(1) At dispatch, one of the navigation system configurations listed in subparagraph d(6) above must be installed, operational, and (as listed in Table 2) approved for RNP 10.

(2) The certificate holder must ensure that the airplane navigation system will provide RNP 10 performance for the planned flight time in the airspace and, if applicable, that the airplane will be operated within the RNP 10 time limit specified in Table 2 below.

(3) The International Civil Aviation Organization (ICAO) flight plan filed with the Air Traffic Service Provider (ATSP) must show that the airplane and operator are approved for RNP 10. The operation must be conducted using the airplane (s), navigation equipment and specific area of operation listed in Table 2 below.

Table 2 – Single Long-Range Navigation System Airplane(s) and Equipment Authorized Required Navigation Performance 10

Airplane M/M/S	S-LRNS Manufacturer	S-LRNS Model	RNP 10 Time Limit	Area of Operations Where Permitted

Note:*Gulf of Mexico oceanic control areas: the Houston CTA, the Gulf of Mexico portion of the Miami Oceanic CTA, the Merida and Monterrey CTAs.

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Appendix C: Sample OpSpec B054, Class II Navigation Using Single Long-Range Navigation System (S-LRNS): 14 CFR Part 135

- a. The certificate holder shall conduct all Class II navigation operations using Single Long-Range Navigation System (S-LRNS) in accordance with 14 CFR part 135, § 135.165, as appropriate, and the provisions of this operations specification paragraph.
- b. Authorized Airplane(s) and Equipment. The certificate holder is authorized to conduct Class II S-LRNS operations using the following airplane(s).

Table 1 – Single Long-Range Navigation System Airplane(s) and Equipment

Airplane M/M/S	Single Long-Range Navigation Systems	
	Manufacturer	Model

- c. Area of Operation. The area of operation where S-LRNS is permitted is defined by the following description and excludes all the North Atlantic Minimum Navigation Performance Specifications (NAT/MNPS) airspace:

- Beginning at 44°47'20" N/67°00'00" W.
- Hence to 39°00'00" N/67°00'00" W.
- Hence to 38°30'00" N/69°20'00" W.
- Hence to 38°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/58°00'00" W.
- Hence to 07°46'00" N/58°00'00" W.
- Then northwestward along the adjacent coastline of South America, the eastern coastline of Central America, the eastern coastline of Mexico, and the southern and eastern coastlines of the United States to the beginning point.

- d. Special Limitations and Provisions. The certificate holder shall conduct all operations using an S-LRNS in accordance with the following limitations and provisions:

(1) Unless specifically authorized elsewhere in these operations specifications, the certificate holder shall not conduct Class II navigation operations within:

- Central East Pacific (CEP) and composite airspace,
- North Pacific (NOPAC) airspace,
- NAT/MNPS airspace, or
- Areas of magnetic unreliability (AMU). The S-LRNS shall be operational as required by paragraph B039 (NAT/MNPS) and B040 (AMU), as applicable.

(2) If the airplane is equipped with only a Single Long-Range Communications System (SLRCS), the requirements of operations specifications paragraph B045, Extended Overwater Operations Using a Single Long-Range Communication System, must be met.

(3) The certificate holder shall conduct all Class II S-LRNS operations so the airplane is continuously navigated to the degree of accuracy required for air traffic control (ATC). For areas where these accuracy and navigation performance standards have not been formally established, the long-range navigation system (LRNS) must be used to continuously navigate the airplane so that the cross-track and/or the along-track errors will not exceed 25 nautical miles at any point along the flight plan route specified in the ATC clearance.

(4) Prior to entering any airspace requiring the use of a LRNS, for airplanes approved for operations using GPS equipage and/or DME/DME automatic updating, the systems must be confirmed to be functioning normally (no fault indications); for all other airplanes, the position shall be accurately fixed using airways navigation facilities or ATC radar.

(a) After exiting this airspace, the airplane position shall be accurately fixed and the LRNS error shall be determined and logged in accordance with the operator's approved procedures. An arrival gate position check satisfies this requirement.

(b) For airplanes approved for operations and using GPS equipage and/or DME/DME automatic position updating, no exit position fix is required unless there is an indication of LRNS malfunction.

(5) An LRNS fix may be substituted for a required en route ground facility when that facility is temporarily out of service, provided the approved navigation system has sufficient accuracy to navigate the airplane to the degree of accuracy required for ATC over that portion of the route.

(6) At dispatch, **at least one** of the navigation systems listed below must be installed and operational:

(a) One independent inertial navigation system (INS), or

(b) One flight management system (FMS)/navigation sensor combination (or equivalent) suitable for the route to be flown, or

(c) One independent GPS navigation system approved for Class II navigation in oceanic and remote areas.

(7) Flightcrew procedures must be in place and used in the event of the loss of the S-LRNS after dispatch.

(8) Before conducting any operations authorized by these operations specifications, the flightcrew must be qualified in accordance with the certificate holder's approved training program for the system and procedures being used.

e. Airplane(s) Equipped with S-LRNS Authorized RNP 10 in Certain Designated Areas of Operations. Class II navigation using an S-LRNS equipped airplane authorized RNP 10 must be conducted in accordance with the following limitations or provisions:

(1) At dispatch, one of the navigation system configurations listed in subparagraph d(6) above must be installed, operational, and (as listed in Table 2) approved for RNP 10.

(2) The certificate holder must ensure that the airplane navigation system will provide RNP 10 performance for the planned flight time in the airspace and, if applicable, that the airplane will be operated within the RNP 10 time limit specified in Table 2 below.

(3) The International Civil Aviation Organization (ICAO) flight plan filed with the Air Traffic Service Provider (ATSP) must show that the airplane and operator are approved for RNP 10. The operation must be conducted using the airplane(s), navigation equipment and specific area of operations listed in Table 2 below.

Table 2 – Single Long-Range Navigation System Airplane(s) and Equipment Authorized RNP 10

Airplane M/M/S	S-LRNS Manufacturer	S-LRNS Model	RNP 10 Time Limit	Area of Operations Where Permitted

Note:*Gulf of Mexico oceanic control areas: the Houston CTA, the Gulf of Mexico portion of the Miami Oceanic CTA, the Merida and Monterrey CTAs.

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Appendix D: Sample Opspec B054, Class II Navigation Using Single Long-Range Navigation System (S-LRNS): 14 CFR Part 125

a. The certificate holder shall conduct all Class II navigation operations using Single Long-Range Navigation System (S-LRNS) in accordance with 14 CFR part 125, § 125.203 and the provisions of this operations specification paragraph.

b. Authorized Airplane(s) and Equipment. The certificate holder is authorized to conduct Class II S-LRNS operations using the following airplane(s).

Table 1 – Single Long-Range Navigation System Airplane(s) and Equipment

Airplane M/M/S	Single Long-Range Navigation Systems (S-LRNS)	
	Manufacturer	Model

c. Area of Operations. The area of operation where S-LRNS is permitted is defined by the following description and excludes all the North Atlantic Minimum Navigation Performance Specifications (NAT/MNPS) airspace:

- Beginning at 44°47'20" N/67°00'00" W.
- Hence to 39°00'00" N/67°00'00" W.
- Hence to 38°30'00" N/69°20'00" W.
- Hence to 38°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/58°00'00" W.
- Hence to 07°46'00" N/58°00'00" W.
- Then northwestward along the adjacent coastline of South America, the eastern coastline of Central America, the eastern coastline of Mexico, and the southern and eastern coastlines of the United States to the beginning point.

d. Special Limitations and Provisions. The Operator/Company shall conduct all operations using a S-LRNS in accordance with the following limitations and provisions:

(1) Unless specifically authorized elsewhere in these operation specifications, the certificate holder shall **not** conduct Class II navigation operations within:

- Central East Pacific (CEP) and composite airspace,
- North Pacific (NOPAC) airspace,
- NAT/MNPS airspace, or
- Areas of magnetic unreliability (AMU). The S-LRNS shall be operational as required by paragraph B039 (NAT/MNPS) and B040 (AMU), as applicable.

(2) If the airplane is equipped with only a Single Long-Range Communication System (LRCS), the requirements of operations specifications paragraph B045, Extended Overwater Operations Using a Single Long-Range Communication System, must be met.

(3) The certificate holder shall conduct all Class II S-LRNS operations so the airplane is continuously navigated to the degree of accuracy required for air traffic control (ATC). For areas where these accuracy and navigation performance standards have not been formally established, the long-range navigation system (LRNS) must be used to continuously navigate the airplane so that the cross-track and/or the along-track errors will not exceed 25 nautical miles at any point along the flight plan route specified in the ATC clearance.

(4) Prior to entering any airspace requiring the use of a LRNS, for airplanes approved for operations using GPS equipage and/or DME/DME automatic updating, the systems must be confirmed to be functioning normally (no fault indications); for all other airplanes, the position shall be accurately fixed using airways navigation facilities or ATC radar.

(a) After exiting this airspace, the airplane position shall be accurately fixed and the LRNS error shall be determined and logged in accordance with the operator's approved procedures. An arrival gate position check satisfies this requirement.

(b) For airplanes approved for operations and using GPS equipage and/or DME/DME automatic position updating, no exit position fix is required unless there is an indication of LRNS malfunction.

(5) An LRNS fix may be substituted for a required en route ground facility when that facility is temporarily out of service, provided the approved navigation system has sufficient accuracy to navigate the airplane to the degree of accuracy required for ATC over that portion of the route.

(6) At dispatch, **at least one** of the navigation systems listed below must be installed and operational:

(a) One independent inertial navigation system (INS), or

(b) One flight management system (FMS)/navigation sensor combination (or equivalent) suitable for the route to be flown, or

(c) One independent GPS navigation system approved for Class II navigation in oceanic and remote areas.

(7) Flightcrew procedures must be in place and used in the event of the loss of the S-LRNS after dispatch.

(8) Before conducting any operations authorized by these operations specifications, the flightcrew must be qualified in accordance with the certificate holder's approved training program for the system and procedures being used.

e. Airplane Equipped with S-LRNS Authorized RNP 10 in Certain Designated Areas of Operations. Class II navigation using an S-LRNS equipped airplane authorized RNP 10 must be conducted in accordance with the following limitations or provisions:

(1) At dispatch, one of the navigation system configurations listed in subparagraph d(6) above must be installed, operational, and (as listed in Table 2) approved for RNP 10.

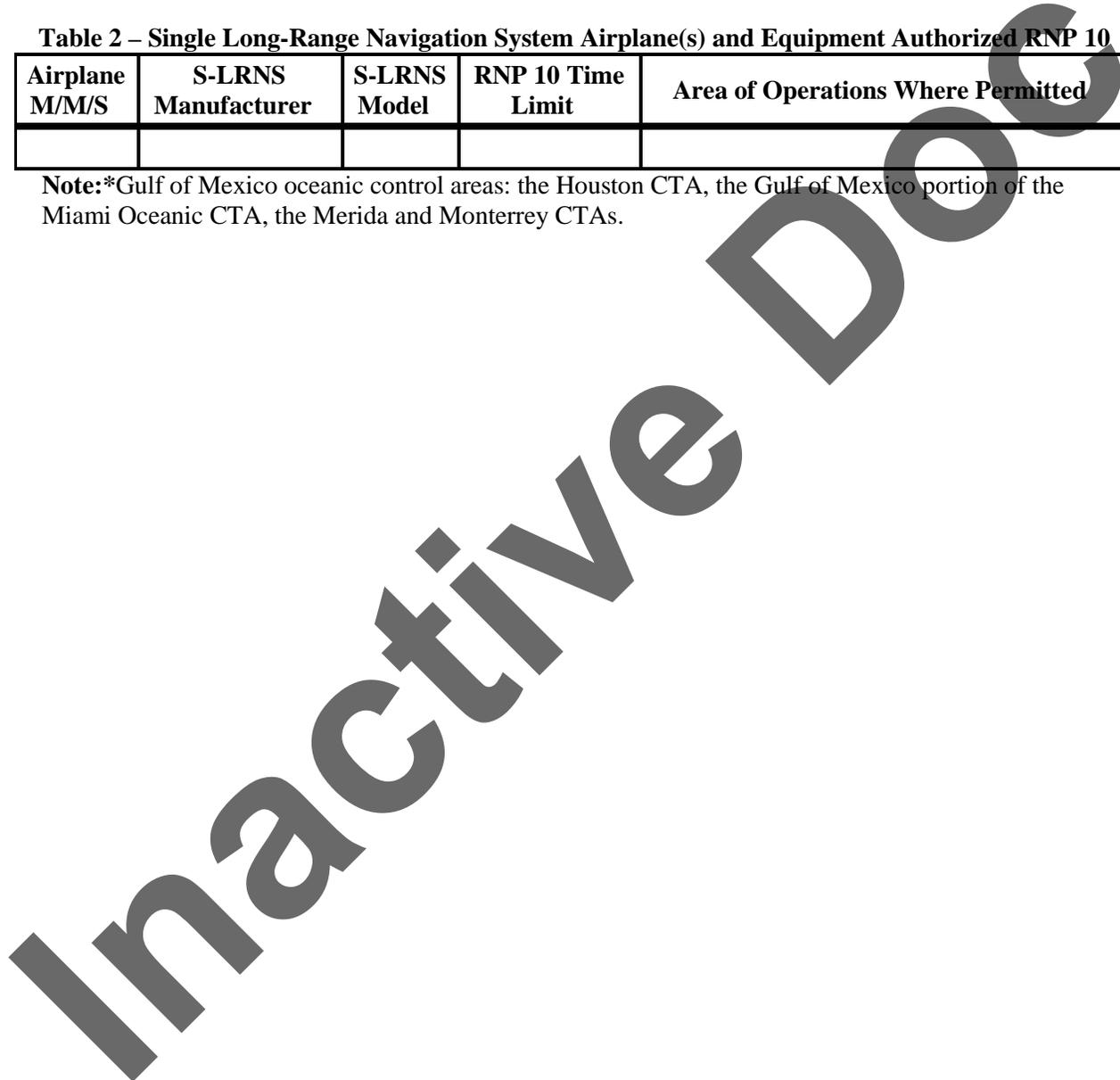
(2) The certificate holder must ensure that the airplane navigation system will provide RNP 10 performance for the planned flight time in the airspace and, if applicable, that the airplane will be operated within the RNP 10 time limit specified in Table 2 below.

(3) The International Civil Aviation Organization (ICAO) flight plan filed with the Air Traffic Service Provider (ATSP) must show that the airplane and operator are approved for RNP 10. The operation must be conducted using the airplane (s), navigation equipment and specific area of operation listed below.

Table 2 – Single Long-Range Navigation System Airplane(s) and Equipment Authorized RNP 10

Airplane M/M/S	S-LRNS Manufacturer	S-LRNS Model	RNP 10 Time Limit	Area of Operations Where Permitted

Note:*Gulf of Mexico oceanic control areas: the Houston CTA, the Gulf of Mexico portion of the Miami Oceanic CTA, the Merida and Monterrey CTAs.



Appendix E: Sample LOA B054, Class II Navigation Using Single Long-Range Navigation System (S-LRNS): 14 CFR Part 125 (LODA A125)

Letter of Authorization

Class II Navigation Using Single Long-Range Navigation System (S-LRNS)

1. The Operator/Company authorized to conduct operations in accordance with the Letter of Deviation Authority (LODA A125) shall conduct all Class II navigation operations using Single Long-Range Navigation System (S-LRNS) in accordance with 14 CFR part 125, § 125.203 and the special limitations and provisions of this Letter of Authorization (LOA).
2. Authorized Airplane(s) and Equipment. The Operator/Company is authorized to conduct Class II S-LRNS operations using the following airplane(s) and S-LRNS.

Table 1 – Single Long-Range Navigation System Airplane(s) and Equipment

Airplane M/M/S	Single Long-Range Navigation Systems	
	Manufacturer	Model

3. Area of Operation. The area of operation where S-LRNS is permitted is defined by the following description and excludes all the North Atlantic Minimum Navigation Performance Specification (NAT/MNPS) airspace:
 - Beginning at 44°47'20" N/67°00'00" W.
 - Hence to 39°00'00" N/67°00'00" W.
 - Hence to 38°30'00" N/69°20'00" W.
 - Hence to 38°00'00" N/60°00'00" W.
 - Hence to 27°00'00" N/60°00'00" W.
 - Hence to 27°00'00" N/58°00'00" W.
 - Hence to 07°46'00" N/58°00'00" W.
 - Then northwestward along the adjacent coastline of South America, the eastern coastline of Central America, the eastern coastline of Mexico, and the southern and eastern coastlines of the United States to the beginning point.
4. Special Limitations and Provisions. The Operator/Company shall conduct all operations using a S-LRNS in accordance with the following limitations and provisions:
 - a. Unless specifically authorized elsewhere in these operation specifications, the certificate holder shall **not** conduct Class II navigation operations within:
 - Central East Pacific (CEP) and composite airspace,
 - North Pacific (NOPAC) airspace,
 - NAT/MNPS airspace, or
 - Areas of magnetic unreliability (AMU). The S-LRNS shall be operational as required by paragraph B039 (NAT/MNPS) and B040 (AMU), as applicable.

b. If the airplane is equipped with only a Single Long-Range Communications System (LRCS), the requirements of LOA B045, Extended Overwater Operations Using a Single Long-Range Communication System, must be met.

c. The Operator/Company shall conduct all Class II S-LRNS operations so the airplane is continuously navigated to the degree of accuracy required for air traffic control (ATC). For areas where these accuracy and navigation performance standards have not been formally established, the long-range navigation system (LRNS) must be used to continuously navigate the airplane so that the cross-track and/or the along-track errors will not exceed 25 nautical miles at any point along the flight plan route specified in the ATC clearance.

d. Prior to entering any airspace requiring the use of a long-range navigation system (LRNS), for airplanes approved for operations using GPS equipage and/or DME/DME automatic updating, the systems must be confirmed to be functioning normally (no fault indications); for all other airplanes, the position shall be accurately fixed using airways navigation facilities or ATC radar.

(1) After exiting this airspace, the airplane position shall be accurately fixed and the LRNS error shall be determined and logged in accordance with the operator's approved procedures. An arrival gate position check satisfies this requirement.

(2) For airplane approved for operations and using GPS equipage and/or DME/DME automatic position updating, no exit position fix is required unless there is an indication of LRNS malfunction.

e. An LRNS fix may be substituted for a required en route ground facility when that facility is temporarily out of service, provided the approved navigation system has sufficient accuracy to navigate the airplane to the degree of accuracy required for ATC over that portion of the route.

f. At release, **at least one** of the navigation systems listed below must be installed and operational:

(1) One independent inertial navigation system (INS), or

(2) One flight management system (FMS)/navigation sensor combination (or equivalent) suitable for the route to be flown, or

(3) One independent GPS navigation system approved for Class II navigation in oceanic and remote areas.

g. Flightcrew procedures must be in place and used in the event of the loss of the S-LRNS after flight release.

h. Before conducting any operations authorized by this LOA, the flightcrew must be qualified in accordance with the Operator/Company's training program for the system and procedures being used.

5. Airplanes Equipped with S-LRNS Authorized RNP 10 in Certain Designated Areas of Operations. Class II navigation using an S-LRNS equipped airplane authorized RNP 10 must be conducted in accordance with the following limitations or provisions:

a. At flight release, one of the navigation system configurations listed in subparagraph 4.f above must be installed, operational, and (as listed in Table 2) approved for RNP 10.

b. The Operator/Company must ensure that the airplane navigation system will provide RNP 10 performance for the planned flight time in the airspace and, if applicable, that the airplane will be operated within the RNP 10 time limited specified in Table 2 below.

c. The International Civil Aviation Organization (ICAO) flight plan filed with the Air Traffic Service Provider (ATSP) must show that the airplane and operator are approved for RNP 10. The operation must be conducted using the airplane (s), navigation equipment and specific area of operations listed below.

Table 2 - S-LRNS Airplane(s) and Equipment Authorized RNP 10

Airplane M/M/S	S-LRNS Manufacturer	S-LRNS Model	RNP 10 Time Limit	Area of Operations Where Permitted

Note:*Gulf of Mexico oceanic control areas: the Houston CTA, the Gulf of Mexico portion of the Miami Oceanic CTA, the Merida and Monterrey CTAs.

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Appendix F: Sample MSpec MB054, Class II Navigation Using Single Long-Range Navigation Systems (S-LRNS): 14 CFR Part 91 Subpart K

a. The program manager shall conduct all Class II navigation operations using a Single Long-Range Navigation System (S-LRNS) in accordance with Title 14 CFR part 91, § 91.511, and the provisions of this management specification paragraph.

b. Authorized Airplane(s) and Equipment. The program manager is authorized to conduct Class II S-LRNS operations using the following airplane and S-LRNS.

Table 1-Authorized Airplane(s) and Equipment

Airplane M/M/S	Single Long-Range Navigation Systems (S-LRNS)	
	Manufacturer	Model

c. Special Limitations and Provisions. The program manager shall conduct all operations using an S-LRNS in accordance with the following limitations and provisions:

(1) The program manager shall conduct all Class II S-LRNS operations only within the areas of en route operation where this paragraph is referenced in paragraph MB050 of these management specifications.

(2) Unless specifically authorized elsewhere in these management specifications, the program manager shall **not** conduct Class II navigation operations within:

- Central East Pacific (CEP) and composite airspace,
- North Pacific (NOPAC) airspace,
- North Atlantic Minimum Navigation Performance Specifications (NAT/MNPS) airspace, or
- Areas of magnetic unreliability (AMU). The S-LRNS shall be operational as required by paragraph B039 (NAT/MNPS) and B040 (AMU), as applicable.

(3) If the airplane is equipped with only a Single Long-Range Communications System (LRCS), the requirements of management specification paragraph MB045, Extended Overwater Operations Using a Single Long-Range Communication System, must be met.

(4) The program manager shall conduct all Class II S-LRNS operations so the airplane is continuously navigated to the degree of accuracy required for air traffic control (ATC). For areas where these accuracy and navigation performance standards have not been formally established, the long-range navigation system (LRNS) must be used to continuously navigate the airplane so that the cross-track and/or the along-track errors will not exceed 25 nautical miles at any point along the flight plan route specified in the ATC clearance.

(5) Prior to entering any airspace requiring the use of a LRNS, for airplanes approved for operations using GPS equipage and/or DME/DME automatic updating, the systems must be confirmed to be functioning normally (no fault indications); for all other airplanes, the position shall be accurately fixed using airways navigation facilities or ATC radar.

(a) After exiting this airspace, the airplane position shall be accurately fixed and the LRNS error shall be determined and logged in accordance with the operator's approved procedures. An arrival gate position check satisfies this requirement.

(b) For airplanes approved for operations and using GPS equipage and/or DME/DME automatic position updating, no exit position fix is required unless there is an indication of LRNS malfunction.

(6) An LRNS fix may be substituted for a required en route ground facility when that facility is temporarily out of service, provided the approved navigation system has sufficient accuracy to navigate the airplane to the degree of accuracy required for ATC over that portion of the route.

(7) At dispatch, **at least one** of the navigation systems listed below must be installed and operational:

(a) One independent inertial navigation system (INS), or

(b) One flight management system (FMS)/navigation sensor combination (or equivalent) suitable for the route to be flown, or

(c) One independent GPS navigation system approved for Class II navigation in oceanic and remote areas.

(8) Flightcrew procedures must be in place and used in the event of the loss of the S-LRNS after dispatch.

(9) Before conducting any operations authorized by this management specification, the flightcrew must be qualified in accordance with the program manager's approved training program for the system and procedures being used.

d. Airplane(s) Equipped With S-LRNS Authorized RNP 10 in Certain Designated Areas of Operations. Class II navigation using an S-LRNS-equipped airplane authorized RNP 10 must be conducted in accordance with the following limitations or provisions:

(1) At flight release, one of the navigation system configurations listed in subparagraph c(7) above must be installed, operational, and (as listed in Table 2) approved for RNP 10.

(2) The program manager must ensure that the airplane navigation system will provide RNP 10 performance for the planned flight time in the airspace and, if applicable, that the airplane will be operated within the RNP 10 time limit specified in Table 2 below.

(3) The International Civil Aviation Organization (ICAO) flight plan filed with the Air Traffic Service Provider (ATSP) must show that the airplane and operator are approved for RNP 10. The operation must be conducted using the airplane(s), navigation equipment and specific area of operations listed in Table 2 below.

Table 2–Single Long-Range Navigation System Airplane(s) and Equipment Authorized RNP 10

Airplane M/M/S	S-LRNS Manufacturer	S-LRNS Model	RNP 10 Time Limit	Area of Operations Where Permitted

Note:*Gulf of Mexico oceanic control areas: the Houston CTA, the Gulf of Mexico portion of the Miami Oceanic CTA, the Merida and Monterrey CTAs.

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