	INFORME DE SUPERVISIÓN No. 07 - **(2 PERIODO - ABRIL - 2024)**
	FECHA DEL INFORME: 05-ABRIL DE 2024
CONTRATO Y/O ACUERDO No. Resolución 02 MDN LP No.013/2022 Anexo Técnico No. 22 (GRUPO IV) Casco Aviación	FECHA FIRMA CONTRATO: 27 de diciembre de 2022

1. **OBJETO DEL CONTRATO**: Contratar las pólizas de seguro requeridas para la adecuada protección de los bienes e interés patrimoniales, así como aquellos por los que sean o fuere legalmente responsables e les corresponda asegurar en virtud de disposición legal o contractual del Ministerio de Defensa Nacional y de la Unidad Administrativa Especial de Justicia Penal Militar y Policial, correspondientes al Grupo IV y Grupo XII, de acuerdo al acto administrativo de Adjudicación del programa de seguro, para lo cual EL ASEGURADOR se obliga para con el MINISTERIO a expedir las siguientes pólizas: GRUPO IV CASCO AVIACIÓN

Contratos adicionales y/o modificatorios

TIPO	FECHA	OBJETO
ADICION	18-AGO-23	Adicionar a la Póliza de Casco de Aviación No. 220222900104 de MDN-FUERZA AÉREA COLOMBIANA-DILOS por un valor de CINCUENTA Y CUATRO MIL OCHOCIENTOS NOVENTA Y UN DÓLARES CON VEINTICUATRO CENTAVOS (USD 54.891,24)

FAC- MODIFICATORIO 1- Adición No. 02

Adicionar a la Póliza de Casco de Aviación No. 220222900104 de MDN-FUERZA AÉREA COLOMBIANA-DILOS por un valor de CINCUENTA Y CUATRO MIL OCHOCIENTOS NOVENTA Y UN DÓLARES CON VEINTICUATRO CENTAVOS (USD 54.891,24)

incluido IVA., con vigencia entre las 00:00 horas del 22 de agosto de 2023 hasta las 24:00 horas del 31 de diciembre de 2023.

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FECHA DE SUSCRIPCIÓN 18 de agosto de 2023

1.1. RELACION DE BIENES Y/O SERVICIOS OBJETO DEL CONTRATO

ITEM	DESCRIPCION	CANTIDAD	VALOR UNITARIO EN CONDICIONES	VALOR TOTAL EN CONDICIONES
01	SEGURO GRUPO IV CASCOS DE AVIACION	N/A	N/A	USD 32.898.387,19
			VALOR TOTAL EN CONDICIONES	USD 32.898.387,19

2. VALOR DEL CONTRATO: USD 32.898.387,19

USD 32.898.387,19

ADICIÓN
USD 54.891,24

VALOR DEL CONTRATO USD 32.953.278,43

2.1. DISCRIMINACIÓN DEL VALOR:

2.2 SITUACIÓN FORMA DE PAGO POR VIGENCIAS

TIPO DE CONTRATO	VALOR EN DÓLARES	VALOR GASTOS DE NACIONALIZACIÓN	VALOR TOTAL EN DÓLARES
PRINCIPAL	USD 32.898.387,19	N/A	USD 32.898.387,19
ADICIONAL 1	USD 54.891,24	N/A	USD 54.891,24
VALOR TOTAL	USD 32.953.278,43	N/A	USD 32.953.278,43

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EN DÓLARES

CONTRATADO			PAGADO					PENDIENTE POR CANCELAR
TIPO DE PAGO	VIGENCIA	VALOR USD	OBLIGA-CION No.	FECHA OBLIGACION	ORDEN DE PAGO No.	FECHA ORDEN DE PAGO	VALOR PAGADO	
SEGURO GRUPO IV CASCOS DE AVIACION								
CXP PAGADERAS EN EL PRIMER TRIMESTRE 2023	2022	USD 42.320,45	105823	17-feb-23	38769723	21-feb-23	USD42.320,45	**PAGADO**
TOTAL 2022		**USD 42.320,45**						
PAC MARZO	**2023**	USD 8.874.956,42	140223	28-feb-23	58095323	3-mar-23	USD 8.874956,42	**PAGADO**
ADICION 2023	ADICIÓN 2023	USD 54.891,24	1217123	24-nov-23	418032723	29-nov-23	USD 54.891,24	**PAGADO**
TOTAL 2023		**USD 8.929.847,66**						
PAC MARZO	2024	USD 8.689.295,07	242524	29-feb-24	49802324	4-mar-24	USD 8.689.295,07	**PAGADO**
TOTAL 2024		**USD 8.689.295,07**						
SALDO	2025	USD 9.563.772,31						
	2026	USD 5.728.042,94						
TOTAL SALDO ACUERDO		**USD 15.291.815,25**						
TOTAL CONTRATO		**USD 32.953.278,43**						

EN PESOS

CONTRATADO			PAGADO					PENDIENTE POR CANCELAR
TIPO DE PAGO	VIGENCIA	VALOR COP$	OBLIGACION	FECHA OBLIGA-CION	ORDEN DE PAGO No.	FECHA ORDEN DE PAGO	VALOR PAGADO	
CXP PAGADERAS EN EL PRIMER TRIMESTRE 2023	2022	$ 217.950.296,90						
REDUCCIÓN SOBRANTE POR DIFERENCIAL CAMBIARIO	2022	-$ 11.450.847,58	CRP 1085322 (RESERVA PRESUPUESTA) REDUCIDO EL 08-03-2023 SEGÚN ACTA No. 03-CODAF REDUCCIÓN REZAGO PRESUPUESTAL, CORRESPONDIENTE A DIFERENCIAL CAMBIARIO					
TOTAL 2022		**$ 206.499.449,32**	105823	17-feb-23	38769723	21-feb-23	$ 206.499.449,32	PAGADO
PAC MARZO	2023	$ 46.149.773.394,59						
REDUCCIÓN SOBRANTE POR DIFERENCIAL CAMBIARIO	2023	-$ 3.639.492.107,71	SE SOLICITA LA REDUCCIÓN AL CRP 9123 Y CDP 8923 POR DIFERENCIAL CAMBIARIO; CORRESPONDIENTE AL PAGO EFECTUADO EN EL MES DE MARZO					
PAC MARZO	2023	$ 42.510.281.286,88	140223	28-feb-23	58095323	3-mar-23	$ 42.510.281.286,88	PAGADO

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ADICION 2023	ADICIÓN 2023	$ 247.010.580,00							
REDUCCIÓN SOBRANTE POR DIFERENCIAL CAMBIARIO	ADICIÓN 2023	-$ 23.999.931,26	13/DIC/2023 SE SOLICITA LA REDUCCIÓN AL CRP 9123 POR DIFERENCIAL CAMBIARIO; CORRESPONDIENTE AL PAGO EFECTUADO EN EL MES DE NOVIEMBRE						
PAC NOVIEMBRE	ADICIÓN 2023	$ 223.010.648,74	1217123	24-nov-23	418032723	29-nov-23	$ 223.010.648,74	PAGADO	
TOTAL 2023		**$ 42.733.291.935,62**							
PAC MARZO	2024	$ 44.315.404.870,54							
REDUCCIÓN SOBRANTE POR DIFERENCIAL CAMBIARIO	2024	-$ 10.126.759.325,43	02/FEBRERO/2024 SE SOLICITA LA REDUCCIÓN DE CPA, CDP Y CRP, POR AJUSTE EN TASA VIGENCIA 2.024 A $4.500,oo SEGÚN HERMES N° FAC-S-2023-010270-CR DEL 7 DE OCTUBRE DE 2023 / MDN-COGFM-FAC-COFAC-JEMFA 08/MARZO/2024 SE SOLICITA LA REDUCCIÓN DE CPA, CDP Y CRP, POR DIFERENCIAL CAMBIARIO DE ACUERDO CON LA ORDEN DE PAGO No. 49802324 DEL 04 MARZO 2.024						
TOTAL 2024		**$ 34.188.645.545,11**	242524	29-feb-24	49802324	4-mar-24	$ 34.188.645.545,11	PAGADO	
SALDO	2025	$ 45.906.107.080,58							
	2026	$ 28.067.410.398,07							
TOTAL SALDO ACUERDO		**$ 73.973.517.478,65**							
TOTAL CONTRATO		**$ 151.101.954.408,70**							

2.3. RESUMEN DE DOCUMENTOS PRESUPUESTALES

CONCEPTO	VIGENCIA PPTAL	CDP No.	FECHA CDP	CRP No.	FECHA CRP	VALOR PAGADO	VALOR CTO. $
SEGURO GRUPO IV CASCOS DE AVIACION	CXP 2022	97822	27/OCT-22	10853	31-DIC-22	$ 206.499.449,32	217.950.296,90
	2023	8923	04-ENE-23	9123	04-ENE-23	$42.510.281.286,88	46.149.773.394,59
	ADICIÓN 2023	8923	04-ENE-23	9123	04-ENE-23	$223.010.648,74	$252.499.704,00
	2024	2824	03-ENE-24	7124	03-ENE-2024	$ 34.188.645.545,11	$44.315.404.870,54
	2025			CRP VF 18122			
	2026			CRP VF 18122			

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3. SITUACIÓN DE ENTREGAS:

El plazo máximo de ejecución del contrato es el 31-JUL-2026.
La situación del cronograma de actividades entregables pactado es:

ITEM	DESCRIPCIÓN	HITO CONTRACTUAL	FECHA DE CUMPLI-MIENTO	VALOR A ENTREGAR EN US$	ACTA No.	FECHA ACTA	ENTRADA DE ALMACEN No.	VALOR ENTREGADO EN US$
AÑO 2022								
01	PÓLIZA CASCOS AVIACION VIGENCIA 2022	ANEXO TÉCNICO 22	29-DIC-22	42.320,45	N/A	RECIBO A SATISFACCIÓN 31-DIC-22	N/A	42.320,45
TOTAL A ENTREGAR AÑO 2022								42.320,45
ITEM	**DESCRIPCIÓN**	**HITO CONTRACTUAL**	**FECHA DE CUMPLI-MIENTO**	**VALOR A ENTREGAR EN US$**	**ACTA No.**	**FECHA ACTA**	**ENTRADA DE ALMACEN No.**	**VALOR ENTREGADO EN US$**
AÑO 2023								
01	PÓLIZA CASCOS AVIACION VIGENCIA 2023	ANEXO TÉCNICO 22	17-ENE-23	8.874.956,42	N/A	RECIBO A SATISFACCIÓN 03-FEB-23	N/A	8.874.956,42
TOTAL A ENTREGAR AÑO 2023								8.874.956,42
ADICIÓN No.1 2023								
01	PÓLIZA CASCOS AVIACION VIGENCIA 2023	ANEXO TÉCNICO 22	18-AGO-23	54.891,24	N/A	RECIBO A SATISFACCIÓN 12-OCT-23	N/A	54.891,24
TOTAL A ENTREGAR AÑO 2023								8.929.847,66
AÑO 2024								
01	PÓLIZA CASCOS AVIACION VIGENCIA 2024	ANEXO TÉCNICO 22	19-ENE-24	8.689.295,07	N/A	RECIBO A SATISFACCIÓN 09-FEB-23	N/A	8.689.295,07
TOTAL A ENTREGAR AÑO 2024								8.689.295,07
VALOR TOTAL ACUERDO								32.953.278,43

4. RESUMEN DE PÓLIZAS

Garantía única de cumplimiento No. (NO APLICA)

Tomado de: ESTUDIOS Y DOCUMENTOS PREVIOS - LICITACIÓN PÚBLICA 2022 - SEGUROS GENERALES - MINISTERIO DE DEFENSA NACIONAL ítem 11.1. De acuerdo con lo dispuesto por el artículo 7º de la Ley 1150 de 2007 en los contratos de seguro no será obligatoria la constitución de garantía única de cumplimiento.

AMPAROS	VIGENCIA		VALOR ASEGURADO
	DESDE	HASTA	
Cumplimiento del contrato	N/A	N/A	N/A
Anticipo	N/A	N/A	N/A
Calidad de suministros	N/A	N/A	N/A
Calidad de servicio	N/A	N/A	N/A
Correcto Funcionamiento equipos	N/A	N/A	N/A
Póliza Seriedad de la oferta	13/dic/22	28/mar/23	19.745.398.456,55

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5. TRABAJOS Y/O ACTIVIDADES REALIZADAS:

1. 31-dic-2022 – Recibo a satisfacción póliza vigencia 2022 (TC. MARIA DEL ROSARIO CALLE RODRIGUEZ).
2. inclusión de la aeronave B737 FAC 1222, pasajeros unidad logística y operativa CATAM se encuentra en Oklahoma City EEUU, fue adquirida recientemente por la FAC 29 DIC 2022, con la empresa AAR CORP, continúa en instalaciones de la empresa dado que se está adelantando el Chequeo C Mayor de la aeronave (como parte del servicio pos venta del contrato de adquisición) y se estima que finalice el 30 de marzo de 2023. La empresa AARC CORP en sus observaciones a la minuta de adquisición, requirió seguro de la aeronave a partir del 25 de enero de 2023. 17 de enero la aeronave tendrá cobertura desde el 19 de enero de 2023 hasta el 10 de abril de 2023. La inclusión en la póliza de la aeronave B737 FAC 1222 se entiende no es retroactiva, por ende, se solicita cobertura desde el 19/01/2023 al 10/04/2023, 81 días según la verificación efectuada por la aseguradora en cuanto a monto y días. (TC. MARIA DEL ROSARIO CALLE RODRIGUEZ).
3. Solicitud de la exclusión del B767 MRTT FAC 1202, en razón a que la aeronave se encuentra en Mexicana en México con un mantenimiento mayor y adicional está pendiente por definir situación motor izquierdo. (TC. MARIA DEL ROSARIO CALLE RODRIGUEZ).
4. 31-ENERO-2023 – Se recibe la póliza de CASCOS DE AVIACION correspondiente a la vigencia 2023.
5. 03 –FEB-2023- se tramita RECIBO A SATISFACCION por valor de USD 8.874.956,42

   MY. SANDOVAL CARMEN ANDREA

6. 24-FEBRERO-2023 Capacitación: póliza de aviación -descripción de las coberturas de daños (casco, casco guerra, accidentes personales) y ajuste de reclamos - ministerio de defensa
7. (MY. SANDOVAL) 16-MARZO-2023 Capacitación: Póliza de aviación - descripción de la cobertura de responsabilidad civil y ajuste de reclamos.
8. Inclusión de la aeronave Boeing 737-732 FAC 1222 dentro de la póliza de seguros, a partir del 10 de abril de 2023, hasta el 20 de diciembre de 2023.
9. La empresa aseguradora asignó 01 cupo para la asistencia al curso R1 Sistema de Gestión de Seguridad Aérea (SMS) realizado del 31 de mayo al 09 de junio de 2023 en la Pontificia Universidad Javeriana, al que asistió el señor Teniente Coronel Carlos Corredor Jefe Sección Operacional Comando y Control.
10. Exclusión de la póliza de la aeronave Fokker 28 FAC 0002 a partir del 05 de junio de 2023, mediante certificado número 2202223000681- 1.
11. Exclusión de la póliza de la aeronave C-295 FAC 1282 desde las 00:00 horas del 01 de septiembre de 2023 hasta el 31 de diciembre de 2023.
12. Se solicitó adición de USD 54.891,24 para efectuar la inclusión de la aeronave T6-C / MODELO 3000 FAC 2356 que ingresa a los inventarios de la FAC.

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13. Inclusión de la aeronave EASA.IM. A.63 T6-C / MODELO 3000 FAC 2356 dentro de la póliza de seguros, desde la 00:00 horas del 22 de agosto de 2023 hasta las 24:00 horas del 31 de diciembre de 2023, mediante póliza 2202223003179.
14. Inclusión de la aeronave B 767-200 MMTT FAC 1202 dentro de la póliza de seguros, desde las 00:00 del 15 de septiembre de 2023 hasta las 24:00 horas del 31 de diciembre de 2023,
15. mediante póliza 220222303109.
16. Inclusión de la aeronave CESSNA C-172 FAC 2478 dentro de la póliza de seguros, desde las 00:00 del 27 de noviembre de 2023 hasta las 24:00 horas del 31 de diciembre de 2023, mediante
17. póliza 2202223003468.
18. Inclusión de la aeronave CESSNA C-172 FAC 2479 dentro de la póliza de seguros, desde las 00:00 del 27 de noviembre de 2023 hasta las 24:00 horas del 31 de diciembre de 2023, mediante
19. póliza 2202223003469.
20. Inclusión de la aeronave BOEING 737-732 FAC 1222 dentro de la póliza de seguros, desde las 00:00 del 21 de diciembre de 2023 hasta las 24:00 horas del 31 de diciembre de 2023, mediante
21. póliza 2202223003470
22. Como compromiso dentro de la licitación se debe actualizar anualmente el mapa de riesgos para cada Fuerza del Ministerio de Defensa, debido a que en el presente año se están enfocando en los Programas de Gestión de Riesgos de cada fuerza a través de la aplicación de la Herramienta de Evaluación de Capacidad Organizacional (OCET), para ellos se envió la información requerida por los reaseguradores y se realizaron entrevistas con el personal de tripulantes de las aeronaves que se encuentran aseguradas con el fin de verificar el trabajo en campo concerniente a seguridad operacional y con esto el corredor de seguros se compromete a entregar el mapa de riesgos en enero de 2024.
23. Durante la vigencia 2023 se cumplió con el objeto del contrato; se utilizó la póliza vigente con el evento sucedido en la aeronave C-208 FAC 5069, evento ocurrido el 13 de julio de 2023, en el cual el avión tuvo Salida de pista en CACOM-1, la aeronave cuenta con un deducible de USD$50.000,00, se asignó como taller reparador a Central Aerospace el cual se encuentra realizando los trabajos en la aeronave y los componentes afectados.
24. Mediante oficio No FAC-S-2023-038623-CE del 28 de diciembre de 2023 se solicita la modificación de supervisión de la Póliza Casco de Aviación contratada, por el Señor Mayor Harold Jefrey Sanabria Posada.
25. Mediante acta FAC-S-2024-000110-AG del 02 de enero 2024 se efectúa la entrega del contrato por cambio de supervisión.

MY. SANABRIA POSADA HAROLD JEFREY

26. Mediante oficio NO. RS20240109002213 del 9 de enero de 2024 por el cual se modifica la Circular 230 del 28 de diciembre de 2022, en el sentido de modificar al funcionario designado como supervisor del programa de seguros para la Fuerza Aeroespacial Colombiana.
27. Solicitud a JEADA, el día 17 de enero de 2024 del certificado de disponibilidad presupuesta y certificado de registro presupuestal vigente para el año 2024.

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28. Firma del formato de CALENDARIZACIÓN DE PAGOS CONTRATOS EN MONEDA EXTRANJERA con las REDUCCIÓN AJUSTE DE TRM A $4.500,00; USD 8.689.295,07 correspondiente a $ 39.101.827.815,00 pesos.
29. 06/FEB/2024 se envia en correo por parte del corredor de seguros la ENTREGA CERTIFICADO RENOVACIÓN PÓLIZA CASCO AVIACIÓN PROGRAMA SEGUROS VIGENCIA FISCAL - FAC / LICITACIÓN PUBLICA No. 013/2022 para la vigencia 2024.
30. 08/FEB/2024- notificacion siniestro Aeronave FAC 2476 por golpe con aves en el plano izquierdo.
31. 09/FEB/2024 - ACTA DE RECIBO A SATISFACCIÓN DE BIENES Y SERVICIOS PARCIAL por recibo de la póliza del año 2024.
32. 26/feb/24 - desistimiento del reclamo que se encontraba abierto de la aeronave FAC 1284.
33. Pago PAC MARZO con ORDEN DE PAGO No. 49802324 DEL 04 MARZO 2024.
34. 04/MAR/24 - Entrega informe actualizado de mapa de riesgos del FAC, entregado por el Corredor de Reaseguros, en cumplimiento de las obligaciones establecidas en el numeral 7.2.3 del Pliego de Condiciones de la Licitación Publica 013 de 2022.
35. Firma del formato de CALENDARIZACIÓN DE PAGOS CONTRATOS EN MONEDA EXTRANJERA con las REDUCCIÓN AJUSTE DE TRM. 08/MARZO/2024 SE SOLICITA LA REDUCCIÓN DE CPA, CDP Y CRP, POR DIFERENCIAL CAMBIARIO DE ACUERDO CON LA ORDEN DE PAGO No. 49802324 DEL 04 MARZO 2.024.
36. 15/MAR/24 – Consignación al Tesoro Nacional por el valor de las horas de vuelo pendiente por pagar por un valor USD 33.008 de la aeronave Cessna 208 FAC 5056.
37. 26/MAR/24 – Solicitud cotización del valor restante para completar el seguro en la vigencia 2024 para las siguientes aeronaves: FAC1222, FAC 2356, FAC2478, FAC2479.
38. 27/MAR/24 – Solicitud cotización del valor de la póliza para adicionar las aeronaves que no se encuentran incluidas en la póliza vigente.

6. AVANCE TOTAL DEL PROYECTO:

Porcentaje Avance en tiempo: 35.44 %
Porcentaje de Ejecución (en relación a los bienes o servicios entregados): 53.59 % (PÓLIZAS 2022, 2023 Y 2024)
Porcentaje de pagos realizados**:** 53.60%

FECHA OBL	OBLIGACIONES	FECHA O.P.	ORDENES DE PAGO	VALOR PESOS
17-feb-2023	105823	21-02-2023	38769723	$206.499.449,32
28-feb-2023	140223	03-03-2023	58095323	$42.510.281.286,88
29-nov-2023	1217123	2023-11-29	418032723	$223.010.648,74
29-feb-2024	242524	4-mar-24	49802324	$ 34.188.645.545,11

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Porcentaje de pagos pendientes de realizar: 46.40 % (para la totalidad del presupuesto asignado)

7. CRONOGRAMA DE EJECUCIÓN (SI APLICA)

NO APLICA

8. NOVEDADES Y/O INFORMACIÓN DE IMPORTANCIA

NINGUNA

9. ANEXOS AL INFORME

1. Acta recibo a Satisfacción 2024
2. Formato de CALENDARIZACIÓN DE PAGO
3. Informe actualizado de mapa de riesgos del FAC

MY. HAROLD JEFREY SANABRIA POSADA
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ACTA DE RECIBO A SATISFACCIÓN DE BIENES Y SERVICIOS PARCIAL	FECHA 09 de FEBRERO de 2023
CONTRATO No.	Resolución 02 MDN LP No.013/2022 Anexo Técnico No. 22 (GRUPO IV) Casco Aviación
FECHA SUSCRIPCIÓN	27 de diciembre de 2022.
OBJETO DEL CONTRATO	Adquisición pólizas Casco Aviación
FORMA DE PAGO	Dentro de los noventa (90) días siguientes a la iniciación de cada una de las vigencias, a la entrega y aprobación del certificado de vigencia de las pólizas adjudicadas y registro de la factura electrónica en la plataforma correspondiente
CONTRATISTA	UNIÓN TEMPORAL MAPFRE SEGUROS GENERALES DE COLOMBIA S.A., AXA COLPATRIA SEGUROS S.A., LA PREVISORA S.A. COMPAÑÍA DE SEGUROS y HDI SEGUROS S.A
INTERVENTOR	NO APLICA
SUPERVISOR	MY. HAROLD JEFREY SANABRIA POSADA
VALOR INICIAL DEL CONTRATO	USD 32.898.387,19
PLAZO DE EJECUCION (DE ENTREGA)	29-DIC-2022 al 31-JUL-2026
FECHA DE INICIO	29-DIC-2022
FECHA DE SUSPENSIÓN	NO APLICA
FECHA DE REINICIACIÓN	NO APLICA
CONTRATO MODIFICATORIO No. 1	
FECHA DE SUSCRIPCIÓN	18 de agosto de 2023
OBJETO DEL CONTRATO MODIFICATORIO	Adicionar a la Póliza de Casco de Aviación No. 220222900104 de MDN-FUERZA AÉREA COLOMBIANA-DILOS por un valor de CINCUENTA Y CUATRO MIL OCHOCIENTOS NOVENTA Y UN DÓLARES CON VEINTICUATRO CENTAVOS (USD 54.891,24) incluido IVA., con vigencia entre las 00:00 horas del 22 de agosto de 2023 hasta las 24:00 horas del 31 de diciembre de 2023.
FORMA DE PAGO	El Valor de la presente adición será pagado por el MDN dentro de los noventa días siguientes a la entrega y aprobación del certificado de vigencia de las pólizas adjudicadas y registro de la factura electrónica en la plataforma correspondiente, previo al perfeccionamiento del anexo técnico respectivo, expedición del registro presupuestal, entrega y aprobación de las pólizas adjudicadas y certificación expedida por el representante legal o revisor fiscal del pago de aportes parafiscales.
PLAZO DE ENTREGA	El plazo de ejecución es el comprendido entre las 00:00 horas del 22 de agosto de 2023 hasta las 24:00 horas del 31 de diciembre de 2023 (132 días de vigencia).
VALOR FINAL DEL CONTRATO	USD 32.953.278,43

En la ciudad de Bogotá D.C., el día 09 del mes de febrero de 2024, se reunieron el señor BG. FEDERICO BOCANEGRA BERNAL, en su calidad de Ordenador del Gasto con traspaso de funciones administrativas y de mando como CODAF, el señor MY. HAROLD JEFREY SANABRIA POSADA en su calidad de supervisor por parte del **MINISTERIO DE DEFENSA NACIONAL – FUERZA AÉREA COLOMBIANA** y el señor LUIS DAVID ARCILA HOYOS en su calidad de Representante Legal de la UNIÓN TEMPORAL MAPFRE SEGUROS GENERALES DE COLOMBIA S.A., AXA COLPATRIA SEGUROS S.A., LA PREVISORA S.A. COMPAÑÍA DE SEGUROS y HDI SEGUROS S.A ; con el objeto

de efectuar el correspondiente recibo PARCIAL de los servicios correspondientes al objeto contractual descrito en el citado contrato.

Luego de adelantar la inspección a los servicios se estableció que estos cumplen con los requerimientos, normas y/o especificaciones
técnicas y las entregas se cumplió dentro del plazo contractual establecido. A continuación, se describen pormenorizadamente los bienes entregados y/o servicios prestados, así:

DESCRIPCIÓN DE OBRAS RECIBIDAS	**CANTIDAD**	**OBSERVACIONES GENERALES**
NO APLICA		NO APLICA
DESCRIPCIÓN DE BIENES RECIBIDOS	**CANTIDAD**	**OBSERVACIONES GENERALES**
NO APLICA		NO APLICA
DESCRIPCIÓN DE SERVICIOS RECIBIDOS	**CANTIDAD**	**OBSERVACIONES GENERALES**
PÓLIZA SEGURO DE CASCO AVIACIÓN - GRUPO IV	1	**USD 8.689.295,07**
DESCRIPCIÓN DE OBRAS, BIENES Y SERVICIOS ADICIONALES OFRECIDOS (Ofrecidos por el contratista y que fueron objeto de ponderación y escogencia del contratista, para seguimiento por parte del supervisor)	**CANTIDAD**	**OBSERVACIONES GENERALES**
NO APLICA		NO APLICA
ANEXOS O ACTIVIDADES SOPORTE DE LA (S) FACTURA (S) A CANCELAR (cuando se trate de contratos de servicios de transporte (terrestre, aéreo y fluvial) servicios de operadores logísticos o cuyo objeto obedezca a servicios logísticos, servicios de atención de eventos institucionales)	**CANTIDAD**	**OBSERVACIONES GENERALES**
PÓLIZA SEGURO DE CASCO AVIACIÓN - GRUPO IV 220222900104	1	PÓLIZA DE SEGURO DE ACUERDO A LICITACIÓN 2022
AMPARO PROVISIONAL AVIACIÓN - EXCLUSIÓN FAC 1282	1	DOCUMENTO MAPFRE 29 de diciembre de 2023 EXCLUSIÓN FAC 1282
AMPARO PROVISIONAL AVIACIÓN - EXCLUSIÓN FAC 0002	1	DOCUMENTO MAPFRE 29 de diciembre de 2023 EXCLUSIÓN FAC 0002
AMPARO PROVISIONAL AVIACIÓN - INCLUSIÓN FAC 1222, 2356, 2478, 2479	1	DOCUMENTO MAPFRE 29 de diciembre de 2023 INCLUSIÓN FAC 1222, 2356, 2478, 2479 HASTA EL 16/JUL/ 2024

PERSONAL REQUERIDO PARA LA EJECUCION DEL SERVICIO (EXIGIDO EN LAS ESPECIFICACIONES TECNICAS)		
NOMBRES Y APELLIDOS	**CARGO**	**OTROS (TARJETA PROFESIONAL/TITULO PROFESIONAL O TECNICO)**
NO APLICA	NO APLICA	NO APLICA
NO APLICA	NO APLICA	NO APLICA

AUMENTO VIDA ÚTIL DE LOS BIENES, EFECTIVIDAD OPERATIVA, CAPACIDAD PRODUCTIVA Y CALIDAD DE LOS BIENES

El pago de este recibo a satisfacción incrementa el valor y/o la vida útil del bien a intervenir.

- **Incrementa el valor del bien:**

SI: ____ NO: __X__ Valor del incremento: $_____ (Valor parcial o total correspondiente a este pago)

- **Una vez ejecutado el 100% del contrato, incrementa vida útil del bien:**

SI: ____ NO: __X__ Años a incrementar: _____

- **En caso de ser el pago final de un contrato de obra o mantenimiento mayor sobre un bien inmueble, indique si el bien se encuentra en condiciones de uso, una vez ejecutado el 100% del Contrato:**

SI____ NO __X__

*Esta información debe guardar relación con la registrada en los estudios y documentos previos del proceso contractual.

SITUACIÓN FINANCIERA DEL CONTRATO

DETALLE DEL PAGO	VALOR	OBSERVACIONES
VALOR INICIAL DEL CONTRATO	$ USD 32.898.387,19	
VALOR ADICIÓN	$ USD 54.891,24	
VALOR FINAL CONTRATO	$ USD 32.953.278,43	
PAGO ANTICIPADO O ANTICIPO	NO APLICA	
CXP PAGADERAS EN EL PRIMER TRIMESTRE 2023	$ USD 42.320,45	

PRIMER PAGO PARCIAL PAC MARZO 2023	USD 8.874.956,42	FACTURA ELECTRÓNICA DE VENTA 1384380
SEGUNDO PAGO PARCIAL PAC NOVIEMBRE 2023	USD 54.891,24	FACTURA ELECTRÓNICA DE VENTA 1913653
TERCER PAGO PARCIAL MARZO 2024	USD 8.689.295,07	
VIGENCIA 2024	USD 0	
VIGENCIA 2025	USD 9.563.772,31	
VIGENCIA 2026	USD 5.728.042,94	
SALDO DEL CONTRATO	USD 15.291.815,25	

OBSERVACIONES

NO APLICA

EN CONSTANCIA, FIRMAN QUIENES INTERVINIERON

MAPFRE PAPERLESS

Firmado digitalmente por LUIS DAVID ARCILA HOYOS
Fecha: 2024.02.13 00:11:25 -05'00'

LUIS DAVID ARCILA HOYOS
Representante Legal de la compañía
UNIÓN TEMPORAL MAPFRE SEGUROS GENERALES DE COLOMBIA S.A – AXA COLPATRIA SEGUROS S.A - LA PREVISORA S.A. - COMPAÑÍA DE SEGUROS - HDI SEGUROS S.A
CONTRATISTA

MY. HAROLD JEFREYS ANABRIA POSADA
SUPERVISOR

BG. FEDERICO BOCANEGRA BERNAL
ORDENADOR DEL GASTO
JESDE - CON TRASPASO DE FUNCIONES
ADMINISTRATIVAS Y DE MANDO COMO COMANDANTE DE APOYO A LA FUERZA

	FUERZA AEROESPACIAL COLOMBIANA	Código	GA-JEADA-FR-239
	CALENDARIZACIÓN DE PAGOS CONTRATOS EN MONEDA EXTRANJERA	Versión	1
		Vigencia	7/09/2023

AÑO VIGENCIA

RESOLUCIÓN No. 02 MDN - LICITACIÓN PÚBLICA No.013/2022 - Anexo Técnico No. 22(GRUPO IV) - ADQUISICIÓN PÓLIZA DE SEGUROS CASCO DE AVIACIÓN

VIGENCIA 2022

RUBRO / DESCRIPCIÓN	REC	VIG	INFORMACIÓN INICIAL DEL CONTRATO	No. CRP	USD	TASA DE CAMBIO SEGÚN ADJUDICACIÓN	PESOS SEGÚN ADJUDICACIÓN
A-02-02-02-007-001 SERVICIOS FINANCIEROS Y SERVICIOS CONEXOS	10	2022	CONTRATO INICIAL VIGENCIA 2022	1085322	USD 42.320,45	$ 5.150,00	$ 217.950.296,90
CONTRATO INICIAL VIGENCIA 2022					**USD 42.320,45**	**$ 5.150,00**	**$ 217.950.296,90**

CPA No. 530

RUBRO / DESCRIPCIÓN	REC	VIG	PLAN DE PAGOS					INFORMACIÓN PRESUPUESTAL PAGO VIGENCIA				
			FORMA DE PAGO	No. CRP	USD	TASA DE CAMBIO PARA PAGO	PESOS PARA PAGO	USD PAGADO	TIPO DE CAMBIO PAGADO	PESOS PAGADOS	DIFERENCIAL CAMBIARIO	DESCRIPCIÓN
A-02-02-02-007-001 SERVICIOS FINANCIEROS Y SERVICIOS CONEXOS	10	2022	PRIMER PAGO PARCIAL PAC CXP PAGADERAS EN EL PRIMER TRIMESTRE 2023.	1085322	USD 42.320,45	$ 5.150,00	$ 217.950.296,90	USD 35.563,40	$ 4.878,24	$ 173.486.800,42	$ 11.450.847,58	ORDEN DE PAGO No. 38769723 DEL 17-02-2023 PAGADO EL 21-02-2023 // SEGÚN FACTURA ELECTRÓNICA DE VENTA N° 1368218 (PRIMA NETA)
								USD 6.757,05	$ 4.885,66	$ 33.012.648,90		ORDEN DE PAGO No. 38769723 DEL 17-02-2023 PAGADO EL 21-02-2023 // SEGÚN FACTURA ELECTRÓNICA DE VENTA N° 1368218 (IVA)
VALOR ACTUAL DEL CRP					**USD 42.320,45**	**$ 5.150,00**	**$ 217.950.296,90**	**USD 42.320,45**		**$ 206.499.449,32**	**$ 11.450.847,58**	

AJUSTES PRESUPUESTALES VIGENCIA 2022	DÓLARES	TASA	ADICIONES	REDUCCIONES	OBSERVACIONES
REDUCCIÓN SOBRANTE POR DIFERENCIAL CAMBIARIO	USD 0,00	$ 0,00		$ (11.450.847,58)	CRP 1085322 (RESERVA PRESUPUESTA) REDUCIDO EL 08-03-2023 SEGÚN ACTA No. 03-CODAF REDUCCIÓN REZAGO PRESUPUESTAL, CORRESPONDIENTE A DIFERENCIAL CAMBIARIO
TOTAL AJUSTES PRESUPUESTALES VIGENCIA 2022	**USD 0,00**		**$ 0,00**	**$ (11.450.847,58)**	

CONCEPTO	VALOR USD	TASA ACTUAL	VALOR EN PESOS	VALOR USD PAGADO	VALOR EN PESOS PAGADO
TOTAL VIGENCIA 2022	USD 42.320,45		$ 206.499.449,32	USD 42.320,45	$ 206.499.449,32
SALDO POR OBLIGAR Y PAGAR VIGENCIA 2022	USD 0,00		$ 0,00	CRP POR UTILIZAR EN PESOS	$ 0,00

VIGENCIA 2023

RUBRO / DESCRIPCIÓN	REC	VIG	INFORMACIÓN INICIAL DEL CONTRATO	No. CRP	USD	TASA DE CAMBIO SEGÚN ADJUDICACIÓN	PESOS SEGÚN ADJUDICACIÓN
A-02-02-02-007-001 SERVICIOS FINANCIEROS Y SERVICIOS CONEXOS	10	2023	CONTRATO INICIAL VIGENCIA 2023	9123	USD 8.874.956,42	$ 5.200,00	$ 46.149.773.394,59
CONTRATO INICIAL VIGENCIA 2023					**USD 8.874.956,42**	**$ 5.200,00**	**$ 46.149.773.394,59**

CPA No. 038

RUBRO / DESCRIPCIÓN	REC	VIG	PLAN DE PAGOS					INFORMACIÓN PRESUPUESTAL PAGO VIGENCIA				
			FORMA DE PAGO	No. CRP	USD	TASA DE CAMBIO PARA PAGO	PESOS PARA PAGO	USD PAGADO	TIPO DE CAMBIO PAGADO	PESOS PAGADOS	DIFERENCIAL CAMBIARIO	DESCRIPCIÓN
A-02-02-02-007-001 SERVICIOS FINANCIEROS Y SERVICIOS CONEXOS	10	2023	PAC MARZO	9123	USD 8.874.956,42	$ 5.200,00	$ 46.149.773.394,59	USD 7.457.946,57	$ 4.808,14	$ 35.858.851.221,08	$ 3.639.492.107,71	ORDEN DE PAGO No. 58095323 PAGADO EL 03-03-2023 // SEGÚN FACTURA ELECTRÓNICA DE VENTA N° 1384380 (PRIMA NETA)
								USD 1.417.009,85	$ 4.693,99	$ 6.651.430.065,80		ORDEN DE PAGO No. 58095323 PAGADO EL 03-03-2023 // SEGÚN FACTURA ELECTRÓNICA DE VENTA N° 1384380 (IVA) - TRM SEGÚN FACTURA
			DENTRO DE LOS 90 DÍAS SIGUIENTES AL PERFECCIONAMIENTO DE LA ADICIÓN		USD 54.891,24	$ 4.500,00	$ 247.010.580,00	USD 46.127,09	$ 4.092,33	$ 188.767.274,22	$ 23.999.931,26	ORDEN DE PAGO No. 418032723 PAGADO EL 29-11-2023 // SEGÚN FACTURA ELECTRÓNICA DE VENTA N° 1913653 (PRIMA NETA) - TRM COMUNICADA Y CERTIFICADA POR LA SUPERINTENDENCIA FINANCIERA DE COLOMBIA (3 DIAS HÁBILES ANTES DEL GIRO)
								USD 8.764,15	$ 3.907,21	$ 34.243.374,52		ORDEN DE PAGO No. 418032723 PAGADO EL 29-11-2023 // SEGÚN FACTURA ELECTRÓNICA DE VENTA N° 1913653 (IVA) - TRM SEGÚN FACTURA
2023					**USD 8.929.847,66**		**$ 46.396.783.974,59**	**USD 8.929.847,66**		**$ 42.733.291.935,62**	**$ 3.663.492.038,97**	

AJUSTES PRESUPUESTALES VIGENCIA 2023	DÓLARES	TASA	ADICIONES	REDUCCIONES	OBSERVACIONES
1.REDUCCIÓN SOBRANTE POR DIFERENCIAL CAMBIARIO	USD 0,00	$ 0,00		$ (3.639.492.107,71)	SE SOLICITA LA REDUCCIÓN AL CRP 9123 Y CDP 8923 POR DIFERENCIAL CAMBIARIO; CORRESPONDIENTE AL PAGO EFECTUADO EN EL MES DE MARZO
2.ADICIÓN EN DÓLARES VIGENCIA 2023	USD 54.891,24	$ 4.600,00	$ 252.499.704,00		08/SEP/2023 SE SOLICITA ADICIÓN AL CRP 9123, SEGÚN MODIFICATORIO AL ANEXO No. 22/2022
3.REDUCCIÓN AJUSTE TRM $4.500	USD 0,00	$ 0,00		$ (5.489.124,00)	22/NOV/2023 SE SOLICITA LA REDUCCIÓN CRP 9123, POR AJUSTE A LA TRM $4.500; CONFORME A CIRCULAR No. FAC-S-2023-010749- DEL 10-OCTUBRE-2023 E INSTRUCCONES DE JEMFA.
4.REDUCCIÓN SOBRANTE POR DIFERENCIAL CAMBIARIO				$ (23.999.931,26)	13/DIC/2023 SE SOLICITA LA REDUCCIÓN AL CRP 9123 POR DIFERENCIAL CAMBIARIO; CORRESPONDIENTE AL PAGO EFECTUADO EN EL MES DE NOVIEMBRE
TOTAL AJUSTES PRESUPUESTALES VIGENCIA 2023	**USD 54.891,24**		**$ 252.499.704,00**	**$ (3.668.981.162,97)**	

CONCEPTO	VALOR USD	TASA ACTUAL	VALOR EN PESOS	VALOR USD PAGADO	VALOR EN PESOS PAGADO
TOTAL VIGENCIA 2023	USD 8.929.847,66		$ 42.733.291.935,62	USD 8.929.847,66	$ 42.733.291.935,62

	FUERZA AEROESPACIAL COLOMBIANA	Código	GA-JEADA-FR-239
	CALENDARIZACIÓN DE PAGOS CONTRATOS EN MONEDA EXTRANJERA	Versión	1
		Vigencia	7/09/2023

	SALDO POR OBLIGAR Y PAGAR VIGENCIA 2023				USD 0,00		$ 0,00	CRP POR UTILIZAR EN PESOS			$ 0,00			
VIGENCIA 2024	CONTRATO FINAL VIGENCIA 2023				USD 8.929.847,66	$ 4.785,44	$ 42.733.291.935,62							
	CONTRATO INICIAL VIGENCIA 2024				USD 8.689.295,07	$ 5.100,00	$ 44.315.404.870,54							
	RUBRO / DESCRIPCIÓN	REC	VIG	PLAN DE PAGOS				INFORMACIÓN PRESUPUESTAL DE PAGOS VIGENCIA						
				FORMA DE PAGO	No. CRP	USD	TASA DE CAMBIO PARA PAGO	PESOS PARA PAGO	USD PAGADO	TIPO DE CAMBIO PAGADO	PESOS PAGADOS	DIFERENCIAL CAMBIARIO	DESCRIPCIÓN	
	A-02-02-02-007-001 SERVICIOS FINANCIEROS Y SERVICIOS CONEXOS	10	2024	PAC. PRIMER TRIMESTRE DE 2024	CRP 7124	USD 8.689.295,07	$ 4.500,00	$ 39.101.827.828,54	USD 7.301.928,63	$ 3.934,57	$ 28.729.954.238,60	$ 4.913.182.283,43	ORDEN DE PAGO No. 49802324 DEL 04 MARZO 2.024 - FACTURA No. 2066271 DE FECHA 08 FEBRERO 2024 PRIMA NETA	
									USD 1.387.366,44	$ 3.934,57	$ 5.458.691.306,51		ORDEN DE PAGO No. 49802324 DEL 04 MARZO 2.024 - FACTURA No. 2066271 DE FECHA 08 FEBRERO 2024 IVA. USD 1.387.366,44	
	VALOR ACTUAL DEL CRP				USD 8.689.295,07		$ 39.101.827.828,54	USD 8.689.295,07		$ 34.188.645.545,11	$ 4.913.182.283,43			
	AJUSTES PRESUPUESTALES VIGENCIA 2024				DÓLARES	TASA	ADICIONES	REDUCCIONES	OBSERVACIONES					
	1.REDUCCIÓN AJUSTE DE TRM A $4.500,00				USD 0,00	$ 4.500,00		$ 5.213.577.042,00	02/FEBRERO/2024 SE SOLICITA LA REDUCCIÓN DE CPA, CDP Y CRP, POR AJUSTE EN TASA VIGENCIA 2.024 A $4.500,oo SEGÚN HERMES N° FAC-S-2023-010270-CR DEL 7 DE OCTUBRE DE 2023 / MDN-COGFM-FAC-COFAC-JEMFA					
	2.REDUCCIÓN SOBRANTE POR DIFERENCIAL CAMBIARIO							$ 4.913.182.283,43	08/MARZO/2024 SE SOLICITA LA REDUCCIÓN DE CPA, CDP Y CRP, POR DIFERENCIAL CAMBIARIO DE ACUERDO CON LA ORDEN DE PAGO No. 49802324 DEL 04 MARZO 2.024					
	TOTAL AJUSTES PRESUPUESTALES VIGENCIA 2024				USD 0,00		$ 0,00	$ 10.126.759.325,43						
	CONCEPTO				VALOR USD	TASA ACTUAL	VALOR EN PESOS	VALOR USD PAGADO	VALOR EN PESOS PAGADO					
	TOTAL VIGENCIA 2024				USD 8.689.295,07		$ 34.188.645.545,11	USD 8.689.295,07	$ 34.188.645.545,11					
	SALDO POR OBLIGAR Y PAGAR VIGENCIA 2024				USD 0,00		$ 0,00	CRP POR UTILIZAR EN PESOS			$ 0,00			
VIGENCIA 2025	RUBRO / DESCRIPCIÓN			INFORMACIÓN INICIAL DEL CONTRATO	No. CRP	USD	TASA DE CAMBIO SEGÚN ADJUDICACIÓN	PESOS SEGÚN ADJUDICACIÓN						
	A-02-02-02-007-001 SERVICIOS FINANCIEROS Y SERVICIOS CONEXOS	10	2025	CONTRATO INICIAL VIGENCIA 2025	CRP VF 18122	USD 9.563.772,31	$ 4.800,00	$ 45.906.107.080,58	CPA No. 021					
	CONTRATO INICIAL VIGENCIA 2025					USD 9.563.772,31	$ 4.800,00	$ 45.906.107.080,58						
	RUBRO / DESCRIPCIÓN	REC	VIG	PLAN DE PAGOS					INFORMACIÓN PRESUPUESTAL PAGO VIGENCIA					
				FORMA DE PAGO	No. CRP	USD	TASA DE CAMBIO PARA PAGO	PESOS PARA PAGO	USD PAGADO	TIPO DE CAMBIO PAGADO	PESOS PAGADOS	DIFERENCIAL CAMBIARIO	DESCRIPCIÓN	
	A-02-02-02-007-001 SERVICIOS FINANCIEROS Y SERVICIOS CONEXOS	10	2025	DENTRO DE LOS 90 (NOVENTA) DÍAS INICIACIÓN DE2025	CRP VF 18122	USD 9.563.772,31	$ 4.800,00	$ 45.906.107.080,58						
	VALOR ACTUAL DEL CRP				USD 9.563.772,31		$ 45.906.107.080,58	USD 0,00		$ 0,00	$ 0,00			
	AJUSTES PRESUPUESTALES VIGENCIA 2025				DÓLARES	TASA	ADICIONES	REDUCCIONES	OBSERVACIONES					
	TOTAL AJUSTES PRESUPUESTALES VIGENCIA 2025				USD 0,00		$ 0,00	$ 0,00						
	CONCEPTO				VALOR USD	TASA ACTUAL	VALOR EN PESOS	VALOR USD PAGADO	VALOR EN PESOS PAGADO					
	TOTAL VIGENCIA 2025				USD 9.563.772,31		$ 45.906.107.080,58	USD 0,00	$ 0,00					
	SALDO POR OBLIGAR Y PAGAR VIGENCIA 2025				USD 9.563.772,31		$ 45.906.107.080,58	CRP POR UTILIZAR EN PESOS			$ 45.906.107.080,58			
	RUBRO / DESCRIPCIÓN			INFORMACIÓN INICIAL DEL CONTRATO	No. CRP	USD	TASA DE CAMBIO SEGÚN ADJUDICACIÓN	PESOS SEGÚN ADJUDICACIÓN						

		FUERZA AEROESPACIAL COLOMBIANA											Código	GA-JEADA-FR-239	
		CALENDARIZACIÓN DE PAGOS CONTRATOS EN MONEDA EXTRANJERA											Versión	1	
													Vigencia	7/09/2023	
VIGENCIA 2026	A-02-02-02-007-001 SERVICIOS FINANCIEROS Y SERVICIOS CONEXOS	10	2026	CONTRATO INICIAL VIGENCIA 2026	CRP VF 18122	USD 5.728.042,94	$ 4.900,00	$ 28.067.410.398,07	CPA No. 020						
	CONTRATO INICIAL VIGENCIA 2026					USD 5.728.042,94	$ 4.900,00	$ 28.067.410.398,07							
	RUBRO / DESCRIPCIÓN	REC	VIG	PLAN DE PAGOS					INFORMACIÓN PRESUPUESTAL PAGO VIGENCIA						
				FORMA DE PAGO	No. CRP	USD	TASA DE CAMBIO PARA PAGO	PESOS PARA PAGO	USD PAGADO	TIPO DE CAMBIO PAGADO	PESOS PAGADOS	DIFERENCIAL CAMBIARIO	DESCRIPCIÓN		
	A-02-02-02-007-001 SERVICIOS FINANCIEROS Y SERVICIOS CONEXOS	10	2026	DENTRO DE LOS 90 (NOVENTA) DÍAS INICIACIÓN DE2025	CRP VF 18122	USD 5.728.042,94	$ 4.900,00	$ 28.067.410.398,07							
	VALOR ACTUAL DEL CRP					USD 5.728.042,94		$ 28.067.410.398,07	USD 0,00		$ 0,00	$ 0,00			
	AJUSTES PRESUPUESTALES VIGENCIA 2026					DÓLARES	TASA	ADICIONES	REDUCCIONES	OBSERVACIONES					
	TOTAL AJUSTES PRESUPUESTALES VIGENCIA 2026					USD 0,00		$ 0,00	USD 0,00						
	CONCEPTO					VALOR USD	TASA ACTUAL	VALOR EN PESOS	VALOR USD PAGADO	VALOR EN PESOS PAGADO					
	TOTAL VIGENCIA 2026					USD 5.728.042,94		$ 28.067.410.398,07	USD 0,00	$ 0,00					
	SALDO POR OBLIGAR Y PAGAR VIGENCIA 2026					USD 5.728.042,94		$ 28.067.410.398,07	CRP POR UTILIZAR EN PESOS	$ 28.067.410.398,07					
	VALOR TOTAL DEL CONTRATO (VIGENCIAS 2022-2026)					USD 32.953.278,43		$ 150.895.454.959,38	USD 17.661.463,18	$ 77.128.436.930,05					
	SALDO POR EJECUTAR DEL CONTRATO														
	SALDO POR OBLIGAR Y PAGAR DEL CONTRATO								USD 15.291.815,25	$ 73.767.018.029,33			08/mar/2024		

MY. HAROLD JEFFEY BANABRIA POSADA
Supervisor Contrato

TC. NANCY MARLEY PACHECO OVIEDO
Director de Gestión y Seguimiento Administrativo - DIGES

CR. JOSÉ RODOLFO CORTES OLARTE
Jefe Jefatura Administrativa

BG. ADILSON NEVARDO BUENO PINEDA
Comandante de Apoyo a la Fuerza

Proyectó:

ASD2. SERGIO RODRIGO HERRERA DELGADO
Asesor Presupuestal - DIGES

Fuerza Aeroespacial Colombiana

Risk Management Process Review

Sirius Aviation Limited

18 January 2024

Prepared by:

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Captain S D Stewart, BEng, FRAeS

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List of Abbreviations

3CA	Control Change Cause Analysis
ADM	Advanced Data Monitoring
AFDR	Accident Flight Data Recorder
ALARP	As Low As Reasonably Practical
ARMS	Aviation Risk Management Solutions
BASH	Bird/Animal Aircraft Strike Hazard
COTS	Commercial Off The Shelf
CRM	Crew Resource Management / Composite Risk Management
CVR	Cockpit Voice Recorder
DISOP	Directorate of Fuerza Aeroespacial Operational Safety
ERC	Event Risk Classification
FAA	Federal Aviation Agency
FAiR3	Flowchart Analysis of Investigation Results (Version 3)
FDM	Flight Data Monitoring
FDR	Flight Data Recorder
FLIR	Forward Looking Infrared
FOD	Foreign Object Damage
FOQA	Flight Operations Quality Assurance
FRMS	Fatigue Risk Management System
FTL	Flight Time Limitations
HFACS	Human Factors Aviation Classification System
HFM	Human Factors Management
ICAO	International Civil Aviation Organisation
ISAT	Insurance Safety Advisory Tool
IEP	Internal Evaluation Programme
KPI	Key Performance Indicator
LOSA	Line Operations Safety Audit
MEDA	Maintenance Error Decision Aid
MoC	Management of Change
MOSA	Military Operations Safety Audit
NASO	Acceptable Operational Level of Safety
OCET	Organisational Capability Evaluation Tool
ORA	Operational Risk Assessment
QAR	Quick Access Recorder
QRH	Quick Reference Handbook
RCA	Root Cause Analysis
RMPR	Risk Management Process Review
SA	Safety Assurance
SAG	Safety Action Group
SARPS	Standards And Recommended Practises
SIRA	Safety Issue Risk Assessment
SIGSO	Integrated Safety Reporting System
SMS	Safety Management System
SOAR	(Gallagher's) Safety and Operational Aviation Risk Solutions
SPI	Safety Performance Indicator

SRB	Safety Review Board
TEM	Threat and Error Management

Executive Summary

Sirius Aviation completed a Risk Management Process Review (RMPR) of Fuerza Aeroespacial Colombiana, on behalf of Gallagher's Safety and Operational Aviation Risk Solutions (SOAR) practice, in December 2023, as a follow-on to the Insurance Safety Advisory Tool (ISAT) assessment completed by Sirius Aviation in 2022.

The RMPR was completed in three parts: Documentation review of the existing and pertinent Corporate Manuals, Safety and Quality/Compliance Manuals and the corresponding processes within the operational manuals; review of the risk management system; and interviews. Data obtained during the 2022 ISAT was also included in the review.

To gather the core data, Sirius employed its own process, the Organisation Capability Evaluation Tool (OCET). The OCET is designed to determine the extent to which an organisation's current risk management policies, procedures and practices comply with applicable regulations and conform to current industry best practices.

The organisational structure and management system that Fuerza Aeroespacial Colombiana has in place effectively supports Air Force operations. The organisation is able to respond effectively and follow-up operational risks, and continuously improve the overall system.

Safety directives, objectives and guidelines are well defined through "Plan Ayacucho", " Estrategia para el desarrollo aéreo y espacial de la Fuerza Aerea Colombiana 2042 (EDAES)", and "Gestión de la Seguridad Operacional (MAGSO)" and The Quick Reference Handbook for Operational Safety (2022) (QRH) provide a solid foundation for effective safety management governance and operational risk oversight. The Airmanship Programme and Aeronautical Decision Making Model for FAC and Annual safety reliability report supporting operations and validation of the strategic approach are particular standouts in this programme.

Fuerza Aeroespacial Operational Safety encourages a positive operational safety culture, and key risks are translated into key risk management initiatives. There is clear evidence of the SMS driving risk detection and management that is then incorporated into risk mitigation programmes and risk informed training programmes. The current Fuerza Aeroespacial SMS capability, as documented (MAGSO), comprises reactive, proactive, and predictive elements. However, from interviews with key staff, it was found that the MOSA (Maintenance Operations Safety Auditing) is not in place.

The MAGSO states a requirement that Key Performance Indicators from Operational, Technical and Human Factors are statistically monitored, and it was confirmed that SPIs are currently monitoring the safety objectives and operational risk trends in FAC.

There was no evidence provided of a compliance framework (scheduled audit application and tracking of key findings) within the SMS to oversee the operation. This is despite detailed process documentation within the MAGSO, QRH and Operational Safety Plan that defines these activities.

The Sirius team identified a number of opportunities for performance improvement in risk management systems, safety tools, and associated methodologies, the integration of Safety and Quality systems, Safety Performance monitoring, and risk-based oversight of operations.

The following are the core areas that, when addressed, could significantly enhance the Fuerza Aeroespacial operational risk management performance delivery:

- **Compliance Monitoring in SMS:** Fuerza Aeroespacial should have (as required under RACAE 219.321) a Quality Management System (QMS) based on audits or reviews, as an integral part of its SMS (From the information provided the auditing, other than Safety, is managed by Quality Section (Sección Calidad), but the scope of that area is unknown). An integrated QMS withing the SMS would provide for the auditing and evaluation of the management system and of operations and maintenance functions, and ensure that the organisation is compliant with regulations. It would also support hazard identification and identify areas of continuous improvement. A limited assurance function is in place but a compliance framework in the SMS is not. Having a complete QMS in place will enhance Fuerza Aerospacial capabilities to monitor the SMS performance.

- **Safety and Quality Database System enabling safety data analysis and safety performance monitoring:** The implementation of a dedicated Safety, Risk and Assurance system integrated to existent management systems and configurable to the Fuerza Aeroespacial operations, is recommended. The platform should have the capability to record and classify safety events, to conduct effective risk management, to develop risk registers, to enable risk-based quality and compliance capability, schedule, track, and the risk assess audits and their findings.

- This would enable systematic data analysis and setting and monitoring of effective safety targets and SPIs. This capability, once fully implemented, would enable more effective risk-based decision making based on safety data analysis at Safety Boards and Safety Committees at Fuerza Aeroespacial Units.

- **Integration of Safety and Quality enabling Risk-Based Auditing:** The current Quality function is not effectively integrated with Safety Risk Management and does not include a risk-based auditing functionality. Audit schedules should be modified according to the risk levels identified in the operational bases (e.g., risk-based audit oversight). Audit checklists should be systematically updated to reflect the implementation of new risk controls (supporting evaluation of implementation effectiveness) from Safety investigations. A well-formed Quality programme comprises Evaluations, Audits and Inspections and process/procedural documentation. Currently, the evaluation aspect has not been implemented and it would benefit to the Air Force to implement an Internal Evaluation Programme (IEP).

- **Risk Management Methodology and Root Cause Analysis tools:** The risk management process would significantly benefit from implementation of the international best practice ARMS (Aviation Risk Management Solutions) process. Both Event Risk Classification and Safety Issue Risk Assessment within ARMS are based on concepts that make risk assessments conceptually more robust whilst keeping them pragmatic and simple for Fuerza Aeroespacial personnel. From the investigations and documentation reviewed, it was apparent that causal factor analysis tools were being employed to support Root Cause Analysis (RCA). However, Maintenance Error Decision Aid (MEDA) along with the already implemented HFACS tool, would support the safety investigation process and effective application of a just culture system. Also, dedicated Causal Factor Analysis tools such as Taproot, 5Y, and/or Control Change Cause Analysis (3CA), supporting incident/accident investigations, will significantly improve capability.

Addressing these core areas as outlined in this report will support Air force in risk management capability and allow existing resources to better utilise their time in managing operational risk.

1 Project Overview

The Risk Management Process Review (RMPR) was designed to ensure existing risk management processes comply with best practices, using the Organisation Capability Evaluation Tool (OCET), and to assist in understanding operational risks. It consists of three aspects:

1. Documentation review of the existing and pertinent Corporate Manuals, Safety and Quality/Compliance Manuals and the corresponding processes within the operational manuals.
2. Interviews with key personnel and a review of the operation/facilities (as allowed) to validate information obtained during the documentation review.
3. A final report with information obtained during the RMPR that will include opportunities for improvement and assessed strengths of the existing risk management programme.

1.1 Safety Management

1.1.1 SMS Culture

Since the first publication of Patrick Hudson's Safety Culture, the accepted development of a safety culture moves from Pathological to Generative through improvements in learning (knowledge), processes, attitudes, and beliefs.

See Figure 1 - The Safety Culture Ladder.

One of the key differentiators between most high hazard industries and others, is the significant upfront investment in Proactive safety. In the case of aviation, this means, at a minimum, design, manufacturing, continuing airworthiness, operational requirements, and flight crew training. At the operational level, therefore, an aviation organisation should aim for a proactive system, identifying possible hazards without necessarily relying solely on reporting or near miss data, whilst retaining the reactive and the predictive capabilities that accident and incident data provide.

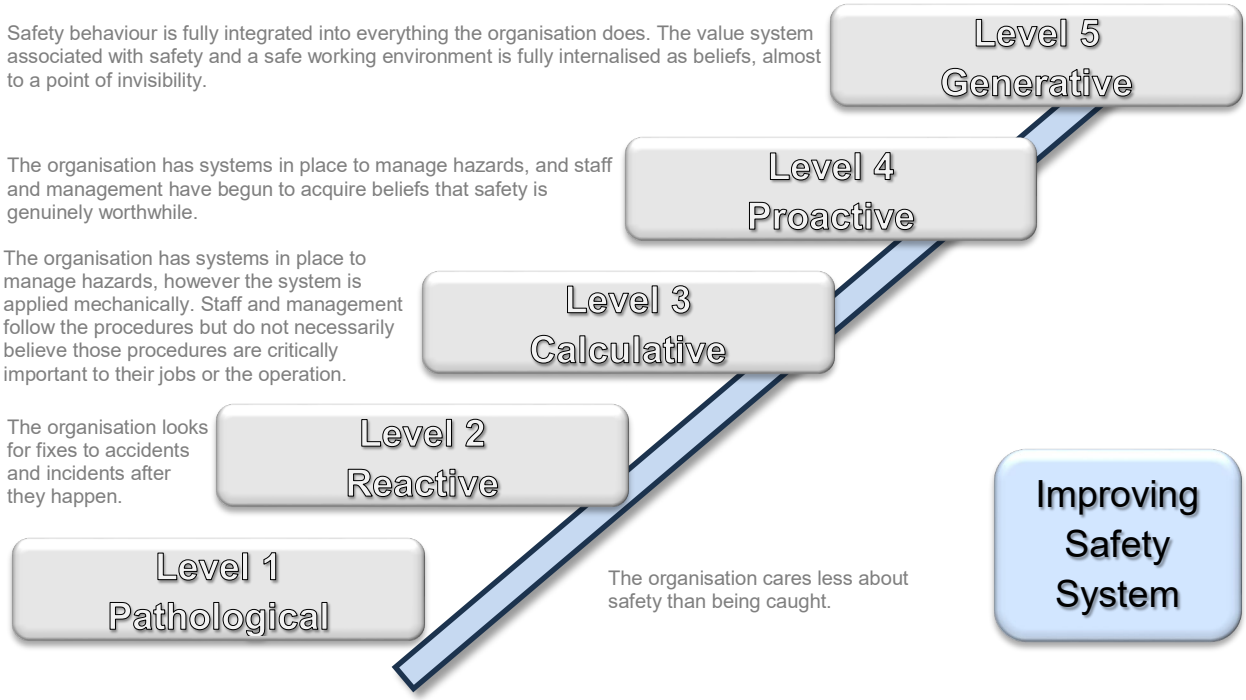


Figure 1 - The Safety Culture Ladder

1.1.2 ICAO Four Pillars

ICAO describes four pillars of Safety Management. These are:

1. Safety Policy
2. Safety Risk Management
3. Safety Assurance
4. Safety Promotion



The Safety Policy sets the standards and expectations of the senior leadership. It should reflect the mission and values, and should be amended to reflect changes in operating environment and organisational learning.

The key to effective Safety Risk Management and Safety Assurance is data. This evidence comes from multiple sources. In a reactive organisation, data mainly comes from accident and incident reports, and audits. A more mature Safety Management System will include diverse data sources, including flight

data, engineering data, training data, near miss reports, indeed every stream of data available.

An effecting reporting system including voluntary reports, is reliant on a “Just Culture”.

Safety Promotion underpins the SMS, using communication and training to ensure that throughout the organisation, the mission, values, aims, objectives, and all safety processes, become embedded in the day-to-day working culture.

1.2 OCET Background

SMS is all about understanding the risk exposure and facilitating risk-based decision-making throughout the organisation. An effective SMS combined with initiatives in safety technology and systems, is at the forefront of ensuring safe operations and management of risk.

Sirius Aviation has designed an analysis tool (OCET – Organisational Capability Evaluation Tool) to provide the insurance community with a structured means of evaluating an operator’s risk processes, exposure profile, and SMS effectiveness, taking into account safety innovation and initiatives specific to the operator, with the aim of reducing risk.

The OCET model is based on reviewing the organisation with the core assumptions that it follows the SMS principles and guidelines published in ICAO Annex 19 and Doc 9859, to include:

- Operational risk processes and procedures in place
- The governance processes in place
- Safety performance measures to support risk-informed governance

2 Methodology

2.1 RMPR Scope and Application

The scope of the RMPR included a review of the safety, compliance and risk processes and procedures of the Fuerza Aeroespacial Colombiana operational areas listed below and to a limited extent:

- Corporate Safety Management
- Operations Management
- Airworthiness Maintenance Management
- Quality Assurance/Compliance Monitoring
- Operational Safety Division
- Air Operations
- Training Programs

The scope also includes a review of safety event management and report handling utilising reports/documentation.

2.2 Standards Referenced

ICAO

- Doc 9859 Safety Management Manual, 4th Edition, 2018
- ICAO Doc 9995 Manual of Evidenced Based Training, 2013
- ICAO Annex 19 Safety Management, 2nd Edition, 2016
- ICAO Doc 9966 Manual for the oversight of Fatigue Management Approaches, 2016

Reglamento Aeronáutico Colombiano Aviación de Estado – RACAE:

- RACAE 43 Mantenimiento
- RACAE 114 Investigación de accidentes aéreos
- RACAE 145 Organizaciones de mantenimiento aprobadas
- RACAE 219 Sistema de gestión de seguridad operacional

3 Review

3.1 Documentation Reviewed

The Fuerza Aeroespacial Colombiana supplied the following documentation which was reviewed by Sirius. It was clear that the requested information was already available in the FAC systems/databases as part of operational oversight.

- Manual Gestión de la Seguridad Operacional – MAGSO . Ed. 2, 2020
- Programa de Aseguramiento de Calidad de las Operaciones Aéreas (FOQA)
- Estrategia para el desarrollo aéreo y espacial de la Fuerza Aérea Colombiana 2042
- Código de Ética Militar Aérea (CETMA)
- Fiabilidad Operacional SPI 2023
- Plan Estratégico de Seguridad Operacional 2020 – 2042
- Quick Reference Handbook en Seguridad Operacional, Ed. 3, Sep- 2022
- Informe final Suceso de Seguridad Operacional, Ver.1, Oct. 2020
- Formato Visita de Acompañamiento/Inspección Sistema de Gestión de Seguridad FAC, Ago. 2023
- Sistema De Reportes FAC.
- Guía del Sistema de Gestión De Seguridad y Salud en el Trabajo, Ver 1
- Informe Fiabilidad 2021

3.2 Interviews Accomplished

The following interviews were conducted:

Maintenance Quality Assurance

- Técnico Jefe John Fredy Gutiérrez Chivatá

Maintenance and Airworthiness SMS - ASO

- Subteniente Juan Sebastián Tobón Medina

Unfortunately, the SOAR Team asked to have meetings with additional key personnel like the Head of the SMS, Head of Flight Operations, Head of Training, Head of Human Factors Programme, Head of the FOQA Programme, Head of the Safety Investigations, but the team was advised these personnel were unavailable in the allotted timeframe for the project.

With this restriction, the SOAR team have drafted the report based on documentation received from the Fuerza Aeroespacial Colombiana and documentation available from the Fuerza Aeroespacial website.

4 Results and Analysis

A full list of recommendations is included in Section 6.

4.1 Mission

Fuerza Aeroespacial is guided by clearly defined strategic vision, mission, and organisational principles,values and responsibilities, focussed on delivering operational readiness, and driving operational excellence for Air Force operations (Estrategia para el desarrollo aéreo y espacial de la Fuerza Aerea Colombianca 2042). The Strategic Plan for Operational Safety principal focus is the 'prevention of accidents' through providing Commanders at all levels, Heads of Safety Departments, Officers and Operational Safety Advisors, the necessary capabilities and operational tools and processes to mitigate risk. The safety strategy and documentation suite (MAGSO and QRH) is of a high standard and reflects a clear understanding of key operational risks being managed.

The Manual de Gestión de Seguridad Operacional (MAGSO) documents the policy regarding safety and risk, but compliance is not explicitly considered although the SMS manual outlines safety assurance and compliance requirements. It is recommended that the Fuerza Aeroespacial Safety Policy explicitly include effective compliance monitoring of operations (refer 6.1.1).

4.2 Organisational Governance and Structure

4.2.1 Structure

The organisation is guided by clearly defined mission, vision, and values that shape the Air Force culture and drive operational excellence. These guiding principles are supported by means of different manuals and documents. The organigram is based on the management structure defined for the Fuerza Aeroespacial, but has specific functions and responsibilities as defined in the MAGSO (2020).

In this regard, it is important to bear in mind that the Colombian Forces are in the process of developing and implementing the RACAES, which will be the guiding regulatory standard. The AAAES "Autoridad Aeronáutica Aviación de Estado" (State Aviation Aeronautical Authority) is in charge of developing the RACAES. Although RACAES's parts for Maintenance are already published, the equivalent parts for Operations are not.

A risk-aware safety culture is fostered within the Fuerza Aeroespacial organisation, with safety initiatives in place (Plan Estratégico de Seguridad Operacional 2020 – 2042) to enhance risk maturity. This culture is cascaded into

the Fuerza Aeroespacial organisation at all levels from Commanders of Groups and Air Stations. Cultural change is being driven through safety leadership and behavioural safety programmes and is an area of continued focus supported through the NASO, MOSA (Flight Ops and Technical) and ADM programmes.

The organisation's activities and services are well-defined, with a robust structure that encompasses all levels of authority. Responsibilities, accountabilities, and authority are delineated across the organisation. A Senior Officer (Fuerza Aeroespacial Commander) serves as the accountable executive, overseeing the performance of the management system.

4.2.2 Management System

The Management System in place covers safety governance, staff performance, instruction and training, and evaluation, ensuring roles are filled based on appropriate knowledge, skills, training, and experience. Development and succession planning are in place for all roles.

The MAGSO outlines the functions and governance of the Fuerza Aeroespacial SMS capability from the Strategic, Operational, and Tactical levels. Effective safety governance is delivered through the DISOP and enabled by the Director of Fuerza Aeroespacial Operational Safety, Head of Accident Prevention Department, Head of Operational Human Factors Division, Head of Operational Reliability, and Head of Operational Safety Investigations. This represents an effective management structure inthe Fuerza Aeroespacial Operational Safety Department, covering key domain safety and risk functions.

Fuerza Aeroespacial has effective risk-based information dissemination, enabled by Commanders who meet monthly and share safety information with their units, based on safety investigation findings, Safety Performance Indicators (SPIs), and survey reports, as a complement to Safety communications using the Hermes platform.

Whilst a safety training register is maintained for all personnel, it is recommended that a dedicated Training Management System (TMS) is implemented supported by a competency management framework, linked to the organisational structure and the Fuerza Aeroespacial's needs (refer 6.1.2).

It is clear commanders and line units understand the requirements and the operational need of an effective SMS in Fuerza Aeroespacial.

4.2.3 Responsibilities

Responsibilities, accountabilities, and authority throughout the safety organisation are described in the MAGSO (2020). The Fuerza Aeroespacial Commander

serves as the accountable executive, overseeing the management and development of the Safety Management System.

The organisation has an operational risk-based approach with a formal risk and corporate governance framework, commensurate with its size. The risk governance structure is clear, outlining the roles, responsibilities, and accountabilities of those involved in risk management, from the Fuerza Aeroespacial Commander embedded in the Fuerza Aeroespacial Command Structure, to Fuerza Aeroespacial Units.

There is a particular focus on Aviation Safety, with the safety directorate embedded into operational structure.

4.2.4 Safety Accountability

The management system outlines the safety accountability, authorities, and responsibilities of all personnel, ensuring the safety and security of aircraft operations. The DISOP of Fuerza Aeroespacial Operational Safety is responsible for ensuring a risk-based approach to operational safety and effective monitoring of SMS performance in line units.

Although the organisation adheres to a corporate code of ethics and performance, it is recommended to complete the transition to RACAE framework and make available to all personnel all manuals and documents related to the management system. This will allow and facilitate the embodiment of the organisation’s culture at all operational levels.

4.3 Document System

The document system operations manuals are structured to support Fuerza Aeroespacial operations, outline the processes necessary to achieve service objectives; and are aligned with the provisions of ICAO and RACAE (however the Compliance and Safety Assurance elements need additional focus).

4.3.1 SMS

The current Fuerza Aeroespacial SMS capability, as documented, comprises reactive, proactive, and predictive elements. This risk management capability facilitates a preventative (feed forward loop) functionality and well as the recovery (feedback loop). Key information on sources of risk as outlined in the MAGSO come from Fuerza Aeroespacial air incident and accident reports, Mandatory reports, Voluntary reports, Operational safety audits and inspections, SPIs, Change Management process linked to safety initiatives, Operational Reliability reports, Annual SMS reviews, safety culture surveys, Military Operations Safety Audit (MOSA).

The SMS elements are aligned with the RACAE 219. HSE risk management is also independent from Aviation Safety Management. HSE and Aviation SMS should be integrated to form an Integrated ISMS capability (refer 6.1.3).

The Fuerza Aeroespacial´s existing annual strategic planning processes, "Plan Ayacucho", "Estrategia para el desarrollo aéreo y espacial de la Fuerza Aerea Colombiana 2042", " Plan Estratégico de Seguridad Operacional 2020- 2042", and MAGSO, provide a solid foundation for effective safety management governance and operational risk oversight. The strategic planning cycle comprises of an annual review of the effectiveness of the SMS supporting Fuerza Aeroespacial Operations, and in the case any new risk this is addressed and reviewed through the monthly safety committees and quarterly safety plan performance review cycle.

Fuerza Aeroespacial SMS should also benchmark safety performance against other aviation organisations (e.g. US Army Aviation) and also learn from incidents and accidents from aviation industry operators using similar aircraft types.

The safety reporting system is managed by the IGEFA based on the data collected by the DESOP from each unit. However, this responsibility is not completely documented in the MAGSO. (refer 6.1.4)

MAGSO cites a Safety Assurance and Compliance capability (QMS) as an instrumental part of the SMS, however, this Safety Assurance is limited to SPIs, Base visits and ADM/MOSA, and it is not clear how Fuerza Aeroespacial links Compliance audits with the SMS performance (refer 6.1.5)

There could be found no evidence of a functioning Compliance Monitoring function in Fuerza Aeroespacial against guidance and requirements of ICAO 9859 and RACAE.

Safety assurance activities include safety auditing and bi-monthly reports from external suppliers. It is strongly recommended to document risk-based audits when deemed necessary according to the supplier performance (refer 6.1.6)

Fuerza Aeroespacial has in place an effective safety communication framework including Safety meetings, Risk Management team meetings, Lessons learnt promotions, Safety Bulletins and emails.

An SMS training programme is in place, however, in accordance with the MAGSO, the key safety personnel (DISAP, DESOP and ASO) require additional formal SMS training, e.g. Safety Performance Monitoring, Safety Risk Analysis, Incident / Accident Investigation, Auditing, etc.

4.4 Organisational Safety Culture

4.4.1 Just Culture

Fuerza Aeroespacial Operational Safety encourages a positive operational safety culture with a Just Culture policy and effective procedures in place, including a culpability process. The operational safety culture is a core safety programme initiative incorporated into command and operations policies.

Methods to assess safety culture perceptions in Fuerza Aeroespacial include annual surveys, interviews/focus groups, monthly safety meetings, and incident/accident reviews. There is strong senior officer support for the establishment and improvement of safety culture and the safety climate in the units.

The annual safety survey would benefit if more surveys were targeted against implemented safety initiatives linked to the annual safety planning cycle to evaluate staff responses on perceived effectiveness (MAGSO Sect 6.1.3.2) (refer 6.1.7).

Fuerza Aeroespacial should focus on additional measures to enhance their approach to safety culture including improving management information systems to enhance organisational learning and developing audit systems (QMS) through which the whole of the system performance can be evaluated. This also includes development of industry best practice safety training programme linked to required competencies per role and instigating a 'raised hand culture' where staff are engaged and involved in safety on a daily basis.

It is recommended that Fuerza Aeroespacial also consider upgrading the FAiR3 process (Flowchart Analysis of Investigation Results) (refer 6.1.8).

4.4.1.1 Flowchart Analysis of Investigation Results (FAiR3)

Aviation regulators recognise the importance of the need to consider Human Factors within Safety Management Systems and their contributing to safe operations and development of a strong reporting culture. In doing so, the selection of appropriate interventions will become much more effective; enabling the right focus on systemic improvements and, where necessary, upon the individuals' actions and intentions as opposed to the consequences. The Baines Simmons FAiR3 (Flowchart Analysis of Investigation Results) system helps organisations to establish and maintain effective process and practice that drives safety culture overall. FAiR3 guides intervention choices so that organisations can ensure that any actions are tailored to maximise effectiveness from both a systems and human performance perspective.

The FAiR3 System relies upon a complete and comprehensive event investigation and as such, complements tools such as the Maintenance Error Decision Aid (MEDA) and the currently implemented Human Factors Analysis and Classification System (HFACS), bridging the gap between the investigation and an organisation's continuous improvement from the human in the system. The system builds on the practical implementation of Just Culture in aviation environments both civil and military, FAiR3 offers a pragmatic and real-world solution, leading to reliable decision making in what can be a fractious environment. Simple to use, the tool requires minimal training and can be used by non-human factors specialists.

- See Annex A FAiR3

4.5 Strategic and Tactical Risk Management

Fuerza Aeroespacial utilises the EDAES manual to document all aspects of organisational management and corporate governance frameworks. Most of the policies and objectives are defined there. An integrated Management Manual that consolidates and integrate the processes and information already in place would be beneficial. For example, the quality policy is not included in the MAGSO.

A high-level committee, composed of Commanders from various levels and additional advisory staff, is in place. This committee is responsible for reviewing matters related to SMS, accidents, just culture, and mission accomplishment. All topics discussed and decisions made are documented in the SMS platform, although no evidence of this was presented.

The committee consists of two groups: the primary group, which holds decision-making authority, and a secondary group that provides expert support on various subjects.

The strategic planning cycle is conducted annually, with quarterly reviews taking place every three months. The organisation has implemented NARO and NASO indicators, which are monitored for each unit. Data for analysis is gathered from events, occurrences, and both voluntary and mandatory reports. However, the Fuerza Aeroespacial does not utilise external data.

According to the provided documentation, safety risk management is not effectively integrated with safety assurance and compliance. No information was available regarding operational decision-making procedures. (refer 6.1.9)

The MAGSO and the SMS QRH have integrated an Accident Prevention Plan (APP) approach with SMS, aligned to ICAO Doc. 9859. The APP initiatives include:

- Flight Data Analysis Program (FOQA)
- Human Factors Program (HFM)
- Remotely Piloted Aircraft Accident Prevention Program
- Runway Incursion Prevention Programme
- Mid-Air Collision Avoidance
- Bird Aircraft Strike Hazard (BASH)
- Air Armament Safety Programme
- Ground Accident Prevention Programme
- FOD Programme
- Maintenance Reliability and Quality Program
- Accident Prevention Program in Training Flights
- Controlled Flight into Terrain Programme

Accident risk reduction (historically known as accident prevention) involves activities to avoid low-probability, high-severity negative events; typically, accidents and serious incidents. Safety Risk Management within an SMS involves activities that generate information to inform leadership decisions regarding priorities in resource allocation to mitigate safety risk. This defines the relationship between Safety Risk Management and accident prevention: prioritised allocation of resources is the domain Safety Risk Management; safety programmes are the domain of accident prevention (adapted from 'Management of Safety as a Business Function' D.Maurino, 2022).

With the lack of an effective QMS capability, new risk controls are not effectively reviewed through targeted audits and inspections, therefore the achievement of safety performance targets and mitigation of risk to ALARP cannot be assured.

The risk management process utilises the ICAO 5x5 risk matrix to risk assess the negative events. This risk management process would benefit from the implementation of the internationally accepted Safety Issue Risk Assessment (SIRA) process. It is recommended that Fuerza Aeroespacial should investigate the adoption of SIRA for the evaluation and management of operational risk (refer 6.1.10).

An industry working group, ARMS (Aviation Risk Management Solutions) was set up in 2007 in order to develop a new and better methodology for Operational Risk Assessment (ORA). The primary target group for the methodology is airlines but it is fully applicable to other aviation organisations.

The methodology defines an overall process for Operational Risk Assessment and describes each step. The assessment process starts with Event Risk Classification (ERC), which is the first review of events in terms of urgency and the need for further investigation. This step also attaches a risk value to each event - which is necessary for creating safety statistics reflecting risk. The next step is data analysis in order to identify current Safety Issues. These Safety Issues are then risk assessed in detail through the Safety Issue Risk Assessment (SIRA). The whole process ensures that any necessary safety actions are identified, creates a Register for following up risks and actions, and provides a Safety Performance Monitoring function. SIRA can also be used to make Safety Assessments, which is a requirement of the "Management of Change" element of the SMS.

Both ERC and SIRA are based on new concepts that make the assessments conceptually more robust whilst keeping them pragmatic and simple.

In particular, the Event Risk Classification process within SIRA is based on evaluation of remaining safety barriers as part of the risk assessment process. This provides a more effective and accurate assessment of event-based risk.

The example matrix is as follows:

Question 2			
What was the effectiveness of the remaining barriers between this event and the most likely accident scenario?			
Effective	Limited	Minimal	Ineffective
50	100	500	2500
10	20	100	500
2	4	20	100
1			

Question 1	
If this event had become an accident, what would have been the most likely outcome?	
Catastrophic accident	Loss of aircraft or multiple deaths (3 or more)
Major accident	1 or 2 fatalities, multiple serious injured, major damage to aircraft
Minor injuries or damage	Minor injuries, minor damage to aircraft
No result of accident	No potential damage or injuries

Figure 3 - SIRA Event Risk Matrix

- *See Annex B ERC/SIRA Process*

4.5.1 Risk Management and Root Cause Analysis tools

Fuerza Aeroespacial have, as a key initiative, the dissemination and application of the DoD HFACS model, which presents a systematic and multidimensional approach to error analysis and accident prevention, in order to carry out a structured analysis of human error patterns, establishing contributing factors and the root causes of different events. They are also preparing a DOC aviation accident and incident investigation procedures booklet (ICAO 9756, based on Annex 13), establishing criteria and procedures in accident investigation.

Industry established tools such as HFACS (Human Factors Analysis Classification System) and Maintenance Error Decision Aid (MEDA) allow the identification of active and latent failures of the operational processes and managerial oversight, these support the development of evidence-based risk interventions. Significant occurrence and accident investigations would also benefit from a dedicated Causal Factor Analysis capability, to support the investigation process, for example, Root Cause Analysis (RCA) such as Taproot, STEP, 5Y, and/or Control Change Cause Analysis (3CA).

Furthermore, for presentation of key risks to senior commanders at monthly safety meetings held at the level of all the Units, it is recommended that the Bowtie method is implemented to highlight the links between risk controls and the underlying management system. Bowtie is a method for assessing hazards and operational risks and is also well-suited to communicating aviation risk issues to non-specialists.

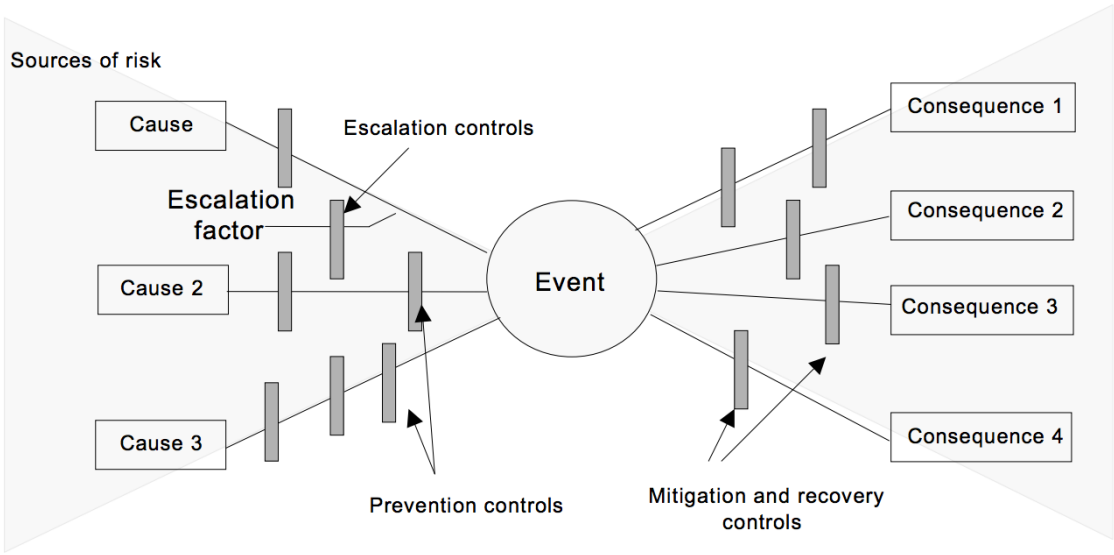


Figure 4 - Bowtie Diagram

Fuerza Aeroespacial have limited application of Root Cause Analysis tools to support incident and accident investigations. Significant occurrence and accident investigations would benefit from use of dedicated Causal Factor Analysis and Root Cause Analysis (RCA) processes. It is recommended that Fuerza Aeroespacial adopt one or more RCA processes such as Bowtie Method, Taproot, 5Y, Control Change Cause Analysis (3CA), and Maintenance Error Decision Aid (MEDA) (refer 6.1.11).

4.5.2 Risk Assessment supported by Reactive and Proactive Hazard Identification

Hazard Identification capability in the Fuerza Aeroespacial SMS includes reactive and proactive elements driving effective risk-based decision making (using an internal risk decision process model (QRH)). At present, the currently implemented SMS capability risk information is derived principally from safety reports, incident and accident investigations, operational reliability reports, FOQA, MOSA and safety surveys. The MAGSO states Fuerza Aeroespacial SMS supports reactive, proactive, and predictive hazard identification methods.

The Fuerza Aeroespacial SMS should actively look to include additional proactive information sources to improve the understanding of operational risk, including:

- Safety Observation Reports – the reporting identified potential hazards.
- Near Miss reports.
- Quality and Safety Audits
- Lost Time Injury Reports.

With the currently implemented capability of KPI/SPIs, FOQA and MOSA, the SMS can effectively apply a predictive capability. Predictive methods of hazard identification involve a combination of statistical predictive modelling and analysis, and real time system performance capture, in order to identify hazards prior to adverse outcomes being experienced. Methods used to predicatively identify hazards include statistical modelling of:

- Causal and Contributory Factor Trends Analysis
- Safety Performance Trend Analysis
- Aircraft Performance Trend Analysis

It is recommended that Fuerza Aeroespacial should introduce data analytic and big data tools and processes to enhance proactive hazard identification, and support risk-based decision making as outlined in the MAGSO (refer 6.1.12).

4.5.3 Fatigue Risk Management System (FRMS) and Crew Performance

Fuerza Aeroespacial currently employs an Hours of Service (HOS) framework to manage crew fatigue. A Fatigue Risk Management System (FRMS) would provide a substantial safety enhancement to Fuerza Aeroespacial operations. An FRMS aims to ensure that operational crew members, and maintenance personnel, are sufficiently alert so that they can operate to at least a satisfactory level of performance. It applies safety management principles and processes to control the specific risks associated with crewmember fatigue. Like an SMS, a FRMS seeks to achieve a realistic balance between safety, productivity, and costs. It seeks to proactively identify opportunities to improve operational processes and reduce fatigue induced risk, as well as identify deficiencies after adverse events. The structure of a FRMS is modelled on the SMS framework. The core activities are Safety Risk Management and safety assurance. These core activities are governed by an FRMS policy and supported by FRMS promotion processes, and the system must be documented. A FRMS relies on an effective safety reporting culture where employees have been trained and are encouraged to report hazards. Once implemented, the benefits of an FRMS include:

- Improved safety performance
- Increased operational flexibility
- Reduction of frequency of incidents and accidents
- Potential reduction in annual insurance premiums
- Provision of a safer working environment

As there are synergies between SMS and FRMS, many of the elements required may already be in place. This is a system that Fuerza Aeroespacial should review as part of a future safety programme.

The majority of FTL duty limits schemes are not supported by scientific studies and do not manage cumulative fatigue. FTL limits alone do not effectively manage crew fatigue. It is recommended that Fuerza Aeroespacial should explore implementation of a Fatigue Risk Management System (FRMS) to optimise crew alertness in conduct of Fuerza Aeroespacial operations (refer 6.1.13).

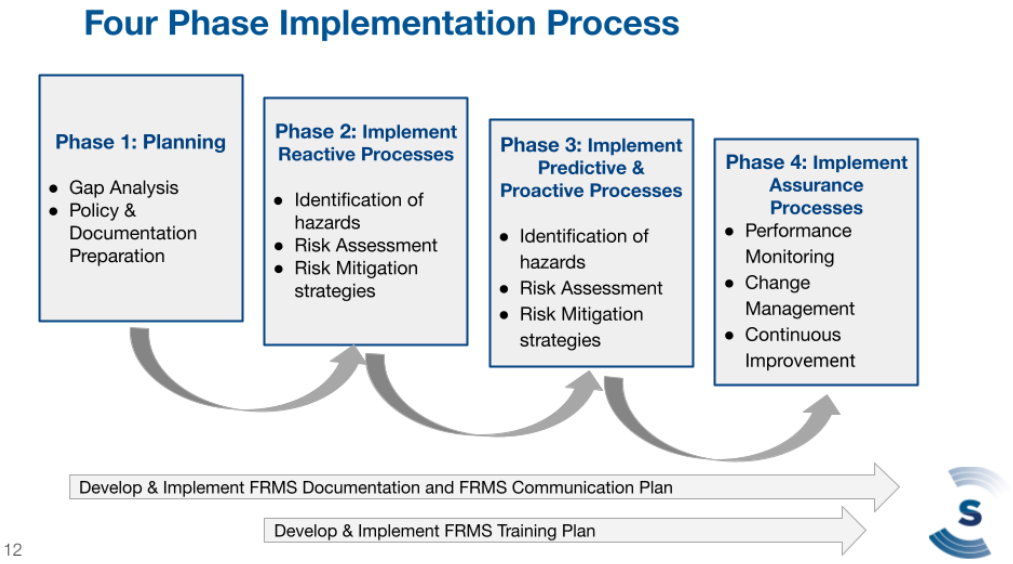


Figure 5 - Four Phase FRMS Implementation

4.5.4 FOQA / FDM

Flight Operations Quality Assurance (FOQA), also known as Flight Data Monitoring (FDM), is the routine collection and analysis of flight data to generate objective and predictive information to improve flight safety.

In practice, it means continuously recording flight parameters throughout the flight, routinely collecting this data from aircraft, and processing the recordings with the help of specific software, to extract safety-relevant information, such as deviations from the operating procedures or abnormal parameter values.

A well implemented FOQA programme will allow an organisation to:

1. Detect trends in operation that are adversely affecting safety, even before they result in a serious incident,
2. Reliably capture safety-relevant events during operation, even if they were not reported by the flight crew,
3. Build and maintain a complete and accurate picture of its safety risks, which is essential for an effective SMS,
4. Verify the effectiveness of corrective actions (corrective training, change to operating procedures, equipment retrofit, etc),
5. Support engineering investigations.

Fuerza Aeroespacial has implemented a comprehensive FDM process that allows for the verification of operational flights, including predictive capabilities. Although the FOQA Manual has been provided, it has been reported that other manuals or tools have not been implemented as per the interviews. Moreover, the FOQA programme does not encompass the entire fleet. Data sources that comprise the FAC FOQA programme include FDR/CVR, FLIR/MOSA, ART telemetries and Advanced Data Monitoring (ADM).

While KPIs and SPI analyses are conducted, the Fuerza Aeroespacial lacks at present advanced data analytics. (Refer 6.1.14)

From a safety perspective, continuous improvement is based on data collected from inspections, assessments, ADM, and reporting systems for both internal and external organisations. According to the interview, there is no advanced data analytics in place. Although the FDM (ADM), this programme does not cover the entire fleet.

For general operations and the fleet already monitored by ADM, the organisation can demonstrate effective performance monitoring. However, a significant number of aircraft remain outside the ADM programme, limiting the scope and accuracy.

4.6 Safety Assurance and Compliance Monitoring

4.6.1 Framework

Fuerza Aeroespacial should have (as required under RACAE 219.300) a quality assurance programme that provides for the auditing and evaluation of the management system, and of operations and maintenance functions, to ensure the organisation is:

- Complying with applicable regulations and standards
- Satisfying stated operational needs
- Identifying areas requiring improvement
- Identifying hazards to operations

Current implemented capability (MAGSO) includes:

- Monitoring of operational safety performance (SPI)
- Operational Safety Accompaniment Visits
- Change Management Procedure
- Continuous improvement of operational safety
- Operational safety studies (internal FAC and external industry)
- Operational safety surveys (focused on targeted safety issues)

The full evaluation of the FAC safety system is conducted at a minimum every two years in each operational unit.

The SMS manual mentions the need of the QMS, however the in SMS manual and in the QRH reflect a procedure call "VISITAS DE ACOMPAÑAMIENTO". This unit visit programme scope has a requirement to confirm implementation of the SMS and safety programme initiatives for each unit. However, the current format of the programme does not allow for tracking of risk control implementation or permit a risk classification of the findings of the visit process.

In addition during the interviews with the QA MNT, it was found that not all the auditors are formally auditor trained or have advanced SMS training.

From the information provided through the interview process, the compliance audit schedule, other than Safety, is managed by Quality Section (Sección Calidad), but the scope of that area is unknown and not documented in MAGSO and QRH.

MAGSO cites a Safety Assurance and Compliance capability (QMS) as an instrumental part of the SMS, however, there doesn't appear to be implemented all the core tier elements of a Quality Management System. With the lack of an effective QMS capability, new risk controls are not effectively reviewed through targeted audits and inspections, therefore the achievement of safety performance targets and mitigation of risk to ALARP cannot be assured (6.1.5).

4.6.2 Safety and Quality database system

Fuerza Aerospacial has a database system termed Hermes supporting the upload and storage of safety information such as safety alerts/bulletins, audit minutes, inspections, FOQA reports etc. This is not equivalent to a dedicated Safety and Quality Database. The FAC SMS would benefit from the implementation of a software platform with the capability to record and classify safety events, to conduct effective risk management, to develop risk registers, to enable risk-based quality and compliance capability, and to schedule, track, and the risk assess audits and their findings.

The platform can also incorporate safety data analytics, performance dashboard and continuous update of risk registers, supporting safety governance. Such platforms are readily commercially available and can be customised to FAC service needs.

The adoption of a more comprehensive tool supporting FAC SMS could significantly improve FAC risk governance and Performance and Assurance based oversight of operations (Refer 6.1.15).

4.6.3 Safety Risk Management and Safety Assurance integration

FAC recognise that the ISMS incorporates and integrates the functionality of Safety Risk Management and Safety Assurance supporting operational safety integrity, effective safety governance and continuous improvement (MAGSO Fig 8 Ch 6 p58). The integration of the existing Safety database with safety performance data from external providers, compliance auditing information, and the application of a robust risk assessment for issued findings, will significantly enhance the organisational risk visibility. This comprehensive approach will facilitate the development of a more holistic risk register, providing a more complete understanding of potential risks and enabling more effective risk management strategies.

Beyond system-based improvements, from a process level and management governance-based perspective, important synergies and integration between Quality Assurance and Safety can include the sharing and standardisation of risk assessment methodologies and process findings (refer 6.1.9).

4.6.4 Risk Based Auditing

The Fuerza Aeroespacial Quality programme approved by the DISOP should review the service auditing requirements, audit schedule, scope of audits, and audit frequency, based on operational risk oversight and mandatory regulatory audit requirements. Audit schedules should be modified according to the risk levels identified in the bases (e.g., risk-based audit oversight).

Audit checklists should be systematically updated to reflect the implementation of new risk controls (supporting evaluation of implementation effectiveness) from Safety investigations. Also, while the existing Quality programme meets the internal FAC requirements (MAGSO), it does not address all the tiers of quality. A well-formed programme will include evaluations, audits and inspections; and it would benefit the Fuerza Aeroespacial SMS to implement an Internal Evaluation Programme (IEP). The SMS would also benefit from inter-service standardisation and an inter-service, branch-independent audit programme. An IEP is a high-level programme that provides a means to maintain and refine the management system by continually monitoring the effectiveness and efficiency of processes and systems.

Fuerza Aeroespacial would benefit from more effective use of compliance monitoring programmes, where audit schedules are modified, according to the identified risk levels (refer 6.1.5). It is recommended that Fuerza Aeroespacial adopts a high-level Internal Evaluation Programme (IEP) to provide a means to maintain and refine the management system, through continual monitoring of the effectiveness and efficiency of processes and systems (refer 6.1.16).

4.6.5 Change Management

MAGSO cites a formal and comprehensive process to change management (MoC) within the organisation. The process seeks to systematically understand the changes that may have an impact on the identified hazard and risk mitigation strategies before implementing such changes.

The Change Management Plan documents and tracks the necessary information required to effectively manage change from inception to delivery. This document will provide guidelines of how to manage change, to ensure the consequences of change do not pose a threat to company operations or pose a risk to individuals or groups. The Change Plan should be a controlled document and will evolve as the needs of the project change.

Fuerza Aeroespacial have a dedicated Management of Change process in their documentation, but during the interviews with the key stakeholders, Sirius was unable to verify the implementation of this process.

4.6.6 Operational KPIs and incident/accident statistics

Analysis of operational Safety Performance Indicators is outlined in the MAGSO. The example SPIs in the manual are subjected to descriptive statistical analysis to identify risk tolerability trends (alert levels are determined by any point that is above the third standard deviation line, when two consecutive points are above the second standard deviation line, or when three consecutive points are above the first standard deviation line).

The above points are considered triggers that alert the organisation about sub-standard safety performance and require the immediate meeting of the Safety Committee associated with the identified risk, to carry out analysis and implement risk mitigation measures.

From the interviews, there was evidence of implementation of safety programmes linked to an approved safety plan. These programmes have SPI and SPT to monitor the status of the implementation of the safety objectives of the approved annual plan, however the responsible of the development of the programmes unknows the results of the indicators.

The safety performance indicators are used to monitor known safety risks, to detect emerging safety risks, and to determine any necessary corrective actions with the owners of the process or the programme implementation. Implementation of a comprehensive SPI architecture is an area in which Fuerza Aeroespacial shold look to improve operational oversight and enable quantifiable safety performance monitoring.

SPI monitoring and measurement should focus on:

1. Identification of all the safety-critical functions and the safety indicators that define the level of safety in these areas.
2. Identify targets that define the level to be maintained, or desired improvement to be achieved, for relevant indicators in each function with a view to achieving continuous improvement throughout the entire Operating Company activities.
3. Identify alerts that will indicate an actual or developing safety performance problem in a particular safety indicator or function.
4. Review Operating Unit safety performance to determine whether modifications or additions to existing indicators, targets, or alerts, are needed to achieve continuous improvement.
5. Targets define long-term Operating Company safety performance objectives. They are expressed in numerical terms and should be concrete, measurable, acceptable, reliable, and relevant. A corresponding alert level should be identified for each SPI, quantifying the unacceptable performance threshold (abnormal occurrence rate) during a specified monitoring period.

Other SPIs that Fuerza Aeroespacial can implemented in their monitoring framework:

Indicator	Indicator Type	Alert Level Criteria	Improvement Target Level Criteria
Exceedances – Take-off	Asset	Avg. + 1/2/3 SD	5% better
Stabilized – Approach	Asset		
Mission SOP Compliance	Asset		
Serious Incidents	Asset		
Actual vs. Planned Maintenance Duration	Asset		
Aircraft Unavailable – Maintenance & Technical	Asset		
CAMO Extensions	Asset		
Open Minimum Equipment Lists	Asset		
Actual vs. Budgeted Hours Flown	Reputation		
Mission Readiness (On Time Departure)	Reputation		
Missions Completed – Mission Success	Reputation		
Customer Complaints	Reputation		
Media Coverage	Reputation		
Regulatory and Compliance Exceedances	Reputation		
CO^2 Emissions	Environmental		
Fuel Purchase	Environmental		
Lost Time Injuries	People		
Training Hours to Regular Hours Worked	People		
Hours Safety Review vs. Total Hours (Management)	People		
Overtime to Regular Hours worked	People		
Absentee and Sick Hours to Regular Hours worked	People		
Actual vs. Budgeted Staff	People		

It is recommended that the Fuerza Aeroespacial can share in real time with all the process or implementation plans owners the SPI/KPI Dashboard; this allows the owners to implement immediate corrective or improvement actions (refer 6.1.17).

5 Recommendations

5.1.1 Safety Policy

The Safety Policy as outlined in the MAGSO does not specifically detail Compliance Monitoring capability although this is clearly defined in process and procedure in Section 5 of the manual.

The Fuerza Aeroespacial Safety Policy should include effective compliance monitoring of operations.

5.1.2 Training Competency Management System

Whilst a safety training register is maintained for all personnel, it is not supported by a dedicated competency management framework linked to organisational structure and service needs.

Fuerza Aeroespacial should implement a Training Management System supported by a competency management capability.

5.1.3 SMS

The SMS elements are not yet fully aligned with the RACAE 219 (manual under review). HSE risk management is also independent from Aviation Safety Management. This is something the Operational Safety Department is aware of and taking steps to correct.

HSE and Aviation SMS should be integrated to form an Integrated SMS (iSMS) capability.

5.1.4 SMS Documentation

The safety reporting system is managed by the IGEFA based on the data collected by the DESOP from each unit. However, the IGEFA responsibilities are not clearly documented in the MAGSO.

Document the IGEFA responsibility in the MAGSO manual regarding the safety reporting system.

5.1.5 Effective QMS Implementation

MAGSO cites a Safety Assurance and Compliance capability as an instrumental part of the SMS, however, an Assurance and Compliance Monitoring capability in line with ICAO 9859 and RACAE is not implemented.

Fuerza Aeroespacial should implement Safety Assurance and Compliance monitoring processes and procedures in accordance with the requirements of ICAO Doc 9859, and industry's best practices.

5.1.6 External Suppliers Monitoring

Safety assurance activities include safety auditing and bi-monthly reports from external suppliers.

Fuerza Aeroespacial should document risk-based audits when deemed necessary according to the supplier performance.

5.1.7 Safety Culture Surveys

The annual safety survey would benefit if it were targeted against implemented safety initiatives linked to the annual safety planning cycle, to evaluate staff responses on perceived effectiveness.

The annual safety survey questions should include evaluation of the perceived effectiveness of implemented safety initiatives.

5.1.8 Just Culture

Fuerza Aeroespacial has not implemented latest industry best practice on Just Culture.

Fuerza Aeroespacial should investigate the adoption of industry best practice Just Culture processes, such as FAiR3 (Flowchart Analysis of Investigation Results) as the standard tool.

5.1.9 Integrated Quality Assurance and Safety Risk Management

According to the provided documentation, Safety Risk Management is not integrated with Safety Assurance and Compliance Monitoring (even through documented in the MAGSO). No information was available regarding operational decision-making procedures.

The results of safety and quality performance reviews should be integrated together, to support necessary governance of the key risk trends/audit findings.

Key risk trends/audit findings should be identified, tracked and managed at Safety Board meetings.

5.1.10 Safety Issue Risk Assessment

The risk management process would benefit from implementation of the internationally accepted Safety Issue Risk Assessment (SIRA) process.

Fuerza Aeroespacial should investigate the adoption of SIRA for the evaluation and management of operational risk.

5.1.11 Root Cause Analysis

Significant occurrence and accident investigations do not employ modern causal factor investigation tools or processes.

Fuerza Aeroespacial should adopt one or more RCA processes such as Bowtie Method, Taproot, 5Y, Control Change Cause Analysis (3CA), and Maintenance Error Decision Aid (MEDA).

5.1.12 Proactive and Predictive Hazard Identification

The Fuerza Aeroespacial should actively look to include proactive and predictive elements to improve the understanding of operational risk inclusive of.

It is recommended that Fuerza Aeroespacial should implement additional proactive tools like a Quality and Safety Audits that includes the verification of the states of the risk controls, implemented due to the results of the investigations, or the enforcement to the operational and tactical personnel to report any kind of hazard identified in the operation.

It is recommended that Fuerza Aeroespacial should introduce data analytic and big data tools and processes, to enhance proactive and predictive hazard identification, and support risk-based decision making as outlined in the MAGSO.

5.1.13 Fatigue Management

FTL limits alone do not effectively manage crew fatigue.

Fuerza Aeroespacial should explore implementation of a Fatigue Risk Management System (FRMS) to optimise the personnel alertness in conduct of the operations.

5.1.14 Flight Operations Safety Assurance

While KPIs, SPI, FOQA and MOSA analyses are conducted, the Fuerza Aeroespacial lacks advanced data analytics.

Fuerza Aeroespacial should explore implementation of an advance data analytic to improve the predictive safety programmes.

5.1.15 Safety and Quality Database

Fuerza Aeroespacial do not have an integrated safety and quality database system. This means that event classification, risk management and compliance monitoring oversight is not supported by safety data analytics.

Fuerza Aeroespacial should explore COTS (Commercial Off the Shelf) Safety and Quality database systems, to support their operational activities.

5.1.16 Internal Evaluation Programme (IEP)

Fuerza Aeroespacial would benefit from more effective use of compliance monitoring programmes, where audit schedules are modified according to the identified risk levels.

Fuerza Aeroespacial should adopt a high-level Internal Evaluation Programme (IEP), to provide a means to maintain and refine the management system, through continual monitoring of the effectiveness and efficiency of processes and systems.

5.1.17 Operational KPI/SPI indicators

From the interviews there was evidence of implementation of safety programmes monitored by SPIs and SPTs, however those responsible for the development of the safety programmes were unaware of the trending results of the safety performance measures.

It is recommended that the Fuerza Aeroespacial share the operations SPI/KPI Dashboard with all the process owners and safety plan staff.

6 Conclusion

The Risk Management Process Review (RMPR) was designed to determine the extent to which current risk management policies, procedures and practices are implemented within the organisation. The review has identified that Fuerza Aeroespacial has opportunities for performance improvement in safety systems, safety tools, risk management, compliance monitoring, and training.

The organisational structure and management system that Fuerza Aeroespacial has in place, allows them to respond effectively and follow-up operational risks, and continuously improve the overall system. The SMS has an effective risk management capability. Safety directives, objectives, and guidelines are well defined, and key risks affecting Fuerza Aeroespacial are translated into key risk management initiatives.

The seventeen (17) areas of recommendation above will allow Fuerza Aeroespacial to significantly enhance its risk management procedures; of those Sirius has identified, there are five (5) that will have a significant impact on enhancing the proactive risk management capabilities of Fuerza Aeroespacial, and so reduce the overall safety risk. These are:

- Strategic and Tactical Risk Management
- Safety and Quality Database System
- Compliance Monitoring Programme
- Advance Data Analysis of Flight Data Monitoring
- Integration of Safety and Quality enabling Risk Based Auditing

This investment in the operation will ensure that the risk picture of Fuerza Aeroespacial is clear, with risk management opportunities clearly identified. Further, it will allow current resources to manage safety more effectively.

Gallagher, the SOAR team, and Sirius aviation would like to thank Fuerza Aeroespacial and all the participating personnel for their honesty and openness throughout this review process. We are ready to assist in these operational changes and implementation measures.

About Us

Sirius Aviation Limited is a more than just aviation consultancy; we work with and solve problems for a wide range of aviation clients worldwide.

Sirius provides clients in the aviation industry the services and solutions they need to help identify sources of risk within their business. We apply extensive aviation industry experience to:

- Help identify sources of risk
- Put programme in place to mitigate the impact of enterprise and operational risk sources
- Embed a safety and risk culture across the whole organisation
- Provide proven consulting and managerial experience in safety/security operations and management systems.

We have a global presence, which allows us to respond quickly, and with knowledge of the local marketplace, throughout the world and across all sectors of the aviation industry.

Through Sirius you can fulfil all of your aviation safety, security and quality requirements. Our customer focused and industry leading services are all designed to help increase safety, improve processes and reduce costs within your business.

Our team of specialist professionals, all drawn from the aviation industry, bring the knowledge, skill and experience necessary to help you manage today's complex risk management environment.

We apply extensive aviation industry experience to help identify sources of risk, put programmes in place to mitigate the impact of enterprise and operational risk sources, embed a safety and risk culture across the whole organisation and provide proven consulting and managerial experience in safety operations and management systems.

It is the way we deliver our service – managing each key area of risk and applying expert industry knowledge – that makes us an indispensable part of your team.

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Appendices

Annex A Flowchart Analysis of Investigation Results (FAiR3)

Annex B ARMS (Aviation Risk Management Solutions)