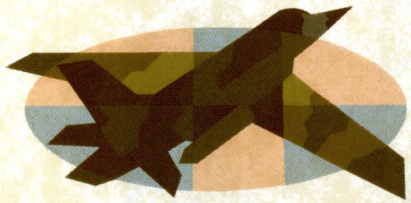
Don't cry because it's over.
Smile because it's happened.
Everything will be OK in the end.
If it's not OK it's not the end.
(Author Unknown)

Michelle was loved by many and will be missed by all.

Her family would like you to join with them after this service to share your memories of her with them.

Please stay and join the family after the Service
in the Church Hall for afternoon tea
and to remember all those wonderful moments
we shared with her.



A SERVICE OF CELEBRATION AND THANKS

MICHELLE ELIZABETH DESMOND

"Loving and loved daughter, sister and sister-in-law,
mother and mother-in-law, nanna, and
staunch friend to all who knew her."

13th August, 1959 – 18th January, 2005

Ipswich Region Community Church
25th January, 2005 at 2.00pm

Music: "*The Reason Why*," Michelle Wright

Welcome: Celebrant – John Haigh, Associate Pastor

Opening Prayer

1st Bible Reading: Ecclesiastes 3: Verses 1-15

Hymn: "*Amazing Grace*"

Eulogy: Family – Mark Desmond

Reflective Music: "*Always On My Mind*," Elvis Presley

Tributes: Friends

2nd Bible Reading: Romans 14: Verses 7-12

Pastor's Message

Lord's and Closing Prayer

Benediction

Song: "*Hymn to Her,*" Chrissy Hynes

Exit of Casket

Family to leave for Warrill Park Lawn Cemetery
Guests are invited to stay for Afternoon Tea.

Amazing Grace

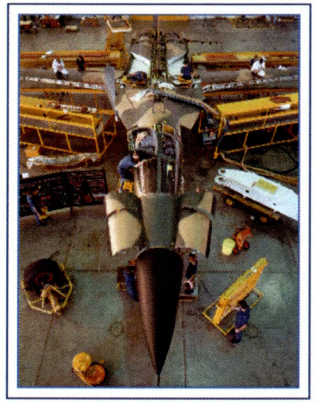
Amazing grace! How sweet the sound
That saved a wretch like me!
I once was lost, but now am found;
Was blind, but now I see.

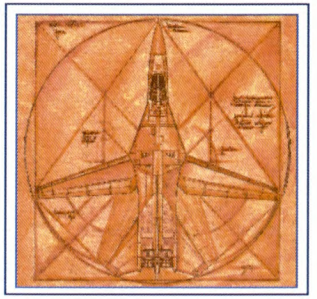
'Twas grace that taught my heart to fear,
And grace my fears relieved;
How precious did that grace appear
The hour I first believed.

Through many dangers, toils and snares,
I have already come;
'Tis grace hath brought me safe thus far,
And grace will lead me home.

When we've been there ten thousand years,
Bright shining as the sun,
We've no less days to sing God's praise
Than when we'd first begun.

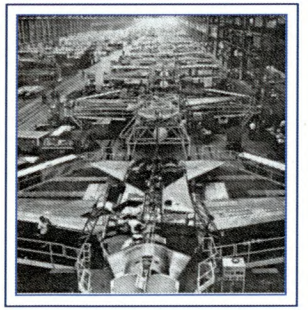
John Newton





ENGINEERS REUNION

3rd March 2005



F-111A 67-106 AMRL Melbourne 5263.9 HRS.

F-111A 67-106

Originally built for TACTICAL AIR COMMAND (TAC) USAF

This Aircraft was given to DSTO (Australia) for tear down and structural analysis. (2005)
Refer to DSTO reports 2005/003 Structural corrosion of F-111A Fuselage 67-106 (DSTO Final Report) dated 7/6/05 and Tear down of F-111A Fuselage 67-106 - Crack Indications, Bonded Panel Degradation and DADTA Control Points - Fuselage Stations 207.5 to 860 (DSTO Report dated 10/6/05).

The Aircraft had accumulated 5263.9 AFHRS

FB-111A converted to F-111G A8-512

Originally built for STRATEGIC AIR COMMAND (SAC).

Rollout date was 27/10/70 with an acceptance date 16/4/71. It was converted to F111G on 1/6/90. This A/C now in the RAAF inventory.

The Aircraft suffered a high speed abort and fire at Amberley RAAF Base on 18/4/06. Both crew survived unhurt - they remained with the aircraft. The pilot inadvertently selected the park brake handle instead of the Hook handle resulting total locking of the main wheels, which were then both ground away down to the stub axles. The resulting fire was sever enough to burn engine cowls, side seals etc. The A/C had a full fuel load and was only saved by the prompt action of the Fire Crew. Cat 4 damage.

See ASOR 6SQN/021/06 attached

A8-512 – Park Brake Application During Takeoff

A8-512 - LH Side

A8-512 - LH Side Close-up

A8-512 – RH Side False Flap Area (Above RH Main Wheel)

ACTION PRECEDENCE: ROUTINE
INFO PRECEDENCE: ROUTINE
ORIGINATORS DTG: 030349Z MAY 06
SICs: KQL -ACCIDENTS/INCIDENTS/VIOLATIONS/OVERFLIGHTS

FROM: DFS-ADF-DAHRTS
ACTION: 82WG
DEFAIR DFS
HQACG
INFO: 1SQN
44WG DET AMB*
6SQN
78WG
81WG
ACAUST
ACDA-ADF
ARDU
AVMED
CSUAMB
DGTA DAIRMAINT
HQ44WG
HQACAUST
SRSPO*

SECTION 1 OF 6
SRSPO FOR CENGR
44WG FOR CO
CSUAMB FOR BFSO/BOPSO

SUBJ:AVIATION SAFETY OCCURRENCE REPORT: 6SQN-021-2006

1. SERIOUS INCIDENT

2. HUMAN/REJECTED TAKE-OFF/HIGH SPEED ABORT AND WHEEL FIRE

3. 18 2315 LOCAL APR 06

4. LOCATION: AMBERLEY/RUNWAY 15//

5. ENVIRONMENTAL CONDITIONS: NIGHT/VMC/N/A
WEATHER: LIGHT WINDS. MOON ILLUMINATION 78%.

6. AIRCRAFT DETAILS:
AIRCRAFT 1: F-111/A08G/A8-512/SONIC 1
SPEED: 100 TO 200 KIAS
ALTITUDE: 0 TO 500 FEET AMSL
FLT PATH: N/A
FLT PHASE: TAKE-OFF
LAST DEPARTURE POINT: YAMB
INTENDED LANDING POINT: YAMB
MISSION: TRAINING/OPCONV AP15N
NVD AIDED: NO
EXTERNAL NVG LIGHTING: OFF
NVG SEARCH LIGHTS: OFF
STROBE/ANTI COLL LIGHTS: ON
LNDG LIGHTS: ON
NAV LIGHTS: ON
HELMET MOUNTED DEVICE: NO
AIRCRAFT 2: F-111/A08G/A8-271/SONIC 2
SPEED: 100 TO 200 KIAS
ALTITUDE: 0 TO 500 FEET AMSL
FLT PATH: CLEAR
FLT PHASE: TAKE-OFF
LAST DEPARTURE POINT: YAMB
INTENDED LANDING POINT: YAMB
MISSION: TRAINING/OPCONV AP16PI
NVD AIDED: NO
EXTERNAL NVG LIGHTING: OFF

NVG SEARCH LIGHTS: OFF
STROBE/ANTI COLL LIGHTS: ON
LNDG LIGHTS: ON
NAV LIGHTS: ON
HELMET MOUNTED DEVICE: NO

7. PERSONNEL DETAILS:
NAV//U/AUTHOFF:NO/AC563 REPORT:NO/
AC/8159998/QFI-D/AUTHOFF:NO/AC563 REPORT:NO/

8. HAZARD NARRATIVE:
SONIC WAS A 2 SHIP FORMATION FOR A NIGHT TFR CONVERSION COURSE SORTIE. THE DEPARTURE FROM AMBERLEY WAS PLANNED AS A 60 SECOND STREAM TAKE-OFF. SONIC 1 COMMENCED A ROLLING TAKEOFF ON RUNWAY 15 THAT PROCEEDED NORMALLY UNTIL ROTATE SPEED, AT WHICH POINT THE RIGHT ENGINE FAILED DUE TO A BIRDSTRIKE. THE TAKEOFF WAS ABORTED. DURING THE ABORT THE PILOT MIS-IDENTIFIED THE HOOK HANDLE AND MOMENTARILY APPLIED THE PARK BRAKE, RESULTING IN BLOWING BOTH MAIN GEAR TYRES. THE AIRCRAFT SKIDDED TO A STOP AND THE MAIN WHEELS WERE GROUND DOWN RESULTING IN TWO WHEEL FIRES. A MAYDAY WAS DECLARED WITH AMBERLEY TOWER AND THE AIRCRAFT SHUTDOWN. AT THIS TIME SONIC 2 TOOK OFF OVER THE TOP OF SONIC 1. THE CREW OF SONIC 1 INSERTED THE EJECTION PINS THEN PERFORMED AN EMERGENCY EGRESS. THE CREW RAN FORWARD OF THE AIRCRAFT UNTIL FIRE SERVICES HAD EXTINGUISHED THE FIRES, THEN RETURNED TO THE FIRE TENDER TO ADVISE THE FIRE CONTROLLER OF THE FUEL AND MUNITIONS STATE OF THE AIRCRAFT. THE CREW OF SONIC 1 WERE TAKEN TO 1ATHS FOR MEDICAL ASSESSMENT. SONIC 2 RETURNED TO AMBERLEY AFTER THEIR SORTIE AND HELD OVERHEAD WHILE THE RUNWAY WAS SWEPT CLEAR OF FOD. SONIC 2 LANDED ON RUNWAY 33 APPROACHING OVER SONIC 1 WHICH WAS STILL ON THE RUNWAY. ATC LAID LIGHTS FOR A DISPLACED THRESHOLD WHICH LEFT 6000 FEET REMAINING FOR SONIC 2 TO LAND.

9. INVESTIGATION:
A. ANALYSIS:
6SQN
001: PROGRAMMING: THE MISSION WAS PROGRAMMED FOR THE SECOND NIGHT WAVE AS AP15N FOR SONIC 1 AND AP16PI FOR SONIC 2. SONIC 1 WAS CREWED BY A STUDENT NAVIGATOR AND A QFI WHILST SONIC 2 WAS CREWED BY A STUDENT PILOT AND AN INSTRUCTOR NAVIGATOR. THE 6 SQUADRON DAILY FLYING PROGRAMME SCHEDULED TWO NIGHT WAVES IN LIEU OF THE USUAL SINGLE WAVE TO OPTIMISE F-111G AIRCRAFT AVAILABILITY WITHIN THE PERIOD OF PLANNED NIGHT FLYING OPERATIONS. THE INCIDENT MISSION WAS SCHEDULED TO TAKE-OFF AT 2200K.
PRE-FLIGHT BRIEFING: SONIC 1 INTENDED THE FORMATION TO DEPART IN 60 SECONDS STREAM AND HAD ANNOTATED THE DOMESTICS CARD WITH 'SOP 60" STREAM'. SONIC 2 UNDERSTOOD THE SOP NIGHT/IMC STREAM DEPARTURE INTERVAL TO BE 30 SECONDS AND THAT THE '60" STREAM' ANNOTATION ON THE DOMESTICS CARD REFERRED ONLY TO THE FORMATION TRAIL INTERVAL TO ACHIEVE ENROUTE.
6SQN
002: SONIC 1 EXPERIENCED A NUMBER OF DELAYS DURING THE AIRCRAFT LAUNCH PHASE, INCLUDING; GROUNDCREW FINISHING MAINTENANCE AND PAPERWORK ON THE TAIL HOOK AREA, UTILITY HYDRAULIC PRESSURE GAUGE MALFUNCTION DURING RIGHT ENGINE START, DASH 60 POWER CART DROPPING EXTERNAL POWER DURING THE ENGINE START SEQUENCE AND A FAILED FLIGHT CONTROL BIT. THESE DELAYS PLACE SONIC 1 WELL BEHIND IN THE LAUNCH SEQUENCE COMPARED TO SONIC 2 WHO WAS NOW WAITING IN THE RUNWAY 15 ORP. SONIC 1 CONDUCTED TFR GROUND CHECKS AND BEFORE TAKE-OFF VAS ON THE TAXI PRIOR TO CALLING READY AND GAINING A ATC DEPARTURE AND TAKE-OFF CLEARANCE FROM RUNWAY 15. THE EMERGENCY BRIEF GIVEN AS PART OF THE PRE-TAKEOFF VA'S COMPLIED TO THE FORMAT GIVEN IN THE DATG BUT DID NOT INCLUDE ANY FORMATION CONSIDERATIONS. SONIC 1 ELECTED TO CONDUCT A ROLLING TAKE-OFF TO EXPEDITE DEPARTURE AND ROLLED DOWN THE RUNWAY 26 SECONDS PRIOR TO THE PLANNED NO LATER THAN TIME OF 2315K.

ACTION PRECEDENCE: ROUTINE
INFO PRECEDENCE: ROUTINE
ORIGINATORS DTG: 030349Z MAY 06
SICs: KQL -ACCIDENTS/INCIDENTS/VIOLATIONS/OVERFLIGHTS

FROM: DFS-ADF-DAHRTS
ACTION: 82WG
DEFAIR DFS
HQACG
INFO: 1SQN
44WG DET AMB*
6SQN
78WG
81WG
ACAUST
ACPA-ADF
ARDU
AVMED
CSUAMB
DGTA DAIRMAINT
HQ44WG
HQACAUST
SRSPO*

SECTION 2 OF 6
SUBJ:
THE TAKE-OFF WAS NORMAL UNTIL 146 KNOTS GROUNDSPEED WHEN THE RIGHT ENGINE INGESTED A BIRD, SUFFERING A COMPRESSOR STALL AND ENGINE SURGE. THE PILOT FELT THE THRUST LOSS, OBSERVED SPARKS AND ORANGE FLAME ABEAM THE COCKPIT ON THE NAVIGATOR'S SIDE AND COMMENCED THE ABORT. CONCURRENTLY, THE NAVIGATOR OBSERVED THE RIGHT ENGINE EPR REDUCE TO 1.0, SAW THE FLAME AND SPARKS AND CALLED 'ABORT ABORT ABORT RIGHT ENGINE FLAMEOUT OF SOME SORT'. THE AIRCRAFT ACHIEVED A MAXIMUM SPEED OF 154 KNOTS GROUNDSPEED DURING THE ABORT. ROTATE SPEED WAS CALCULATED TO BE 145 KIAS AND LIFT-OFF 160 KIAS. SHORTLY AFTER THE ABORT WAS INITIATED THE PILOT LOOKED AHEAD TO ASSESS THE RUNWAY DISTANCE REMAINING AND PERCEIVED THAT THE DISPLACED RUNWAY THRESHOLD RED LIGHTS WERE EXTREMELY CLOSE. THE PILOT REACHED FOR THE HOOK HANDLE INSTINCTIVELY AND PULLED IT TO FULL EXTENSION. THE RIGHT TYRE BLEW IMMEDIATELY AND THE PILOT REALISED HE HAD PULLED THE AUXILIARY BRAKE HANDLE AND PUSHED IT ALL THE WAY IN. AS THE AUXILIARY BRAKE HANDLE WAS BEING RESET THE LEFT TYRE BLEW. THE PILOT THEN PULLED THE HOOK HANDLE TO FULL EXTENSION. THE AIRCRAFT CONTINUED TO SLIDE ON ITS BLOWN TYRES AND AFTER CUTTING THROUGH THE ARRESTOR CABLE CAME TO REST NEAR THE RUNWAY CENTRELINE 500 FEET BEYOND THE DISPLACED THRESHOLD. THE PILOT SHUT DOWN BOTH ENGINES AND INSTRUCTED THE NAVIGATOR TO INSERT THE EJECTION PINS. THE CREW THEN HEARD SONIC 2 PASS DIRECTLY OVERHEAD ON DEPARTURE. THE PILOT ATTEMPTED TO PUSH BOTH ENGINE FIRE PUSH BUTTONS IAW THE ABANDONING THE AIRCRAFT ON THE GROUND CHECKLIST BUT HAD DIFFICULTY IN THE NOW DARK COCKPIT. INVESTIGATION REVEALED THAT NEITHER ENGINE FIRE PUSH BUTTON WAS DEPRESSED AND IT IS ASSESSED THAT THIS HAD NO EFFECT ON THE EVENTUAL OUTCOME. THE CREW, AWARE OF WHEEL FIRES, CONDUCTED A RAPID GROUND EGRESS. EMERGENCY SERVICES ARRIVED IN ATTENDANCE AND THE WHEEL FIRES WERE EXTINGUISHED AND THE CREW TAKEN TO MEDICAL FOR EVALUATION AND LATER RELEASED BACK TO THE UNIT.
6SQN
003: PRIOR TO TAKE-OFF THE CREW OF SONIC 2 COMPLETED THE PRE-TAKEOFF VA'S AND TFR CHECKS IN THE ORP FOR RUNWAY 15. THE EMERGENCY BRIEF GIVEN AS PART OF THE PRE-TAKEOFF VA'S COMPLIED TO THE FORMAT GIVEN IN THE SATC BUT DID NOT INCLUDE ANY FORMATION CONSIDERATIONS. SONIC 2 ACHIEVED A 33-SECOND STREAM ROLLING DEPARTURE BEHIND SONIC 1. SONIC 2 CAVR ANALYSIS REVEALED THAT AT 2315:12K SONIC 2 RECEIVED THE ATC TRANSMISSION 'COPIED'. THE RECEPTION WAS STRENGTH THREE. AT THIS POINT SONIC 2 WAS ACCELERATING THROUGH 40 KNOTS GROUNDSPEED IN FULL AFTERBURNER AND SONIC 1 WAS 65 KNOTS GROUNDSPEED WITH THROTTLES IN IDLE AND RAPIDLY DECELERATING DURING THE ABORT. SONIC 2 AIRCREW DID NOT RECALL RECEIVING THE 'COPIED' TRANSMISSION AND WERE NOT

AWARE AT ANY STAGE DURING THEIR TAKE-OFF THAT SONIC 1 HAD ABORTED. DURING THE TAKE-OFF AT APPROXIMATELY 60 KNOTS GROUNDSPEED SONIC 2 PILOT SCANNED THE RUNWAY AHEAD TO LOOK FOR SONIC 1. SONIC 2 PILOT DID NOT SEE SONIC 1 AT THIS POINT AND RETURNED TO SCANNING THE ENGINE INSTRUMENTS FOR CORRECT INDICATIONS. SONIC 1 PILOT CONTINUED TO ALTERNATE SCAN BETWEEN THE RUNWAY AHEAD AND ENGINE INSTRUMENTS BUT DOES NOT AGAIN CONSCIOUSLY SCAN FOR SONIC 1 NOR INFORM THE INSTRUCTOR THAT HE CANNOT IDENTIFY THE AFTERBURNER OF SONIC 1 AHEAD. SONIC 2 NAVIGATOR DID SEE THE ORANGE FLAME FROM SONIC 1 THAT THE RIGHT ENGINE EMITTED ON STALL AND SURGE DUE TO BIRDSTRIKE BUT DISCOUNTED THE FLAME AS A MOMENTARY ENGINE 'HICCUP' AND RETURNED TO SCAN THE ENGINE INSTRUMENTS FOR CORRECT INDICATIONS. AT APPROXIMATELY 100 KNOTS GROUNDSPEED SONIC 2 NAVIGATOR AGAIN LOOKED AHEAD TO IDENTIFY SONIC 1 BUT DID NOT SEE THE TELL TALE AFTERBURNER AND ASSUMED THAT WAS DUE TO THE CHANGE IN FLAME SHAPE AS SONIC 1 ROTATED PRIOR TO LIFT OFF. SONIC 2 NAVIGATOR THEN REMAINED FOCUSSED ON THE ENGINE INSTRUMENTS FOR THE REMAINDER OF THE TAKE-OFF. SONIC 2 BECAME AWARE THAT SONIC 1 HAD ABORTED ON RECEIPT OF SONIC 1 TRANSMISSION 'SONIC 1 SHUTTING DOWN' AT 2315:50. AT THIS POINT SONIC 2 HAD OVER FLOWN SONIC 1 AND WERE ON DEPARTURE UPWIND AT APPROX. 500 FEET AGL. SONIC 2 FLIGHT PATH WAS RE-FLOWN IN THE SIMULATOR AND IT WAS ASSESSED THAT SONIC 2 PASSED OVER SONIC 1 BETWEEN 50 AND 70 FEET ABOVE THE RUNWAY SURFACE.

6OQN

005: THE F-111 OPCON CURRICULUM INTRODUCES STUDENT PILOTS TO A 'SIMULATED NIGHT/IMC STREAM DEPARTURE' BY DAY ON AP11. DUE TO AIRCRAFT UNAVAILABILITY THE STUDENT PILOT OF SONIC 2 HAD FLOWN AP11 AS A SINGLETON AND THEREFORE HAD NOT ACHIEVED THIS TRAINING OBJECTIVE ON THAT SORTIE. THE STUDENT HAD BEEN EXPOSED TO A 30" DAY STREAM DEPARTURE ON ANOTHER SORTIE WHERE WEATHER HAD REQUIRED THE DEPARTURE TO BE MODIFIED.

THE STUDENT PILOT OF SONIC 2 HAD PREVIOUSLY FLOWN A ROLLING TAKE-OFF DURING THE DAY.

THE STUDENT PILOT OF SONIC 2 HAD NOT PREVIOUSLY SEEN A NIGHT TAKE OFF IN STREAM AS A WINGMAN.

THE STUDENT PILOT OF SONIC 2 HAD RECEIVED THE DAY FORMATION MASS BRIEF THAT INCLUDES PROCEDURES FOR RADAR TRAIL DEPARTURE.

THE DAY FORMATION MASS BRIEF DOES NOT INCLUDE FORMATION ABORT CONSIDERATIONS SPECIFIC TO TRAIL OR STREAM DEPARTURES.

THERE IS NO SPECIFIC F-111 SIMULATOR TRAINING FOR NIGHT/IMC STREAM DEPARTURES AS THE F-111 SIMULATOR MODELS THE PERFORMANCE OF THE LEAD AIRCRAFT POORLY.

CRM ASPECTS OF BOLDFACE MANAGEMENT ARE BROADLY COVERED IN THE STUDENT AIR TRAINING GUIDE. SPECIFICALLY, THE FOLLOWING GUIDANCE IS GIVEN; 'THE PILOT DOES NOT REQUIRE CONFIRMATION OF THE CORRECT CONTROL/SWITCH/PUSHBUTTON BY THE NAVIGATOR PRIOR TO ACTIONING CHECKLIST ITEMS, BUT GOOD CRM PRACTICE WOULD MAKE A PAUSE TO ALLOW THE NAVIGATOR TO VERIFY THE CORRECT USE OF CRITICAL CONTROL BEFORE ACTIONING, AS APPROPRIATE. THE NAVIGATOR SHOULD ONLY TALK BY EXCEPTION I.E. SPEAK UP LOUDLY AND CLEARLY IF HE/SHE FEELS THE PILOT HAS MISTAKENLY GONE FOR THE INCORRECT CONTROL AND IN THE CASE OF ENGINE SHUTDOWN GUARD THE THROTTLE OF THE GOOD ENGINE.' NO FURTHER SPECIFIC CRM ADVICE IS GIVEN WRT ABORT PROCEDURES HOWEVER FURTHER EXAMPLES OUTLINING CRM ASPECTS ARE PROVIDED FOR ENGINE FIRE, BLEED DUCT, ENGINE OIL HOT, WHEEL WELL HOT AND FUSELAGE FIRE.

6SQN

006: THERE IS NO FORMAL REQUIREMENT FOR OPERATIONAL AIRCREW TO COMPLETE AN ABORTED TAKE-OFF IN THE F-111 SIMULATOR AS PART OF THE NORMAL TRAINING CYCLE. IAW 82WG SI (OPS) AIRCREW MUST COMPLETE AN EMERGENCY SIMULATOR SESSION EACH 45 DAYS BUT THE MAKE UP OF THE SIMULATOR SESSION IS AT THE DISCRETION OF THE SIMULATOR INSTRUCTORS. THUS A CREW MAY GO FOR SIGNIFICANT PERIODS WITHOUT HAVING COMPLETED AN ABORT. IT HAS ALSO BEEN NOTED THAT A SIMILAR OCCURRENCE; THE AUXILIARY BRAKE HANDLE BEING PULLED BY MISTAKE INSTEAD OF THE HOOK

ACTION PRECEDENCE: ROUTINE
INFO PRECEDENCE: ROUTINE
ORIGINATORS DTG: 030349Z MAY 06
SICs: KQL -ACCIDENTS/INCIDENTS/VIOLATIONS/OVERFLIGHTS

FROM: DFS-ADF-DAHRTS
ACTION. 02WG
DEFAIR DFS
HQACG
INFO: 1SQN
44WG DET AMB*
6SQN
78WG
81WG
ACAUST
ACPA-ADF
ARDU
AVMED
CSUAMB
DGTA DAIRMAINT
HQ44WG
HQACAUST
SRSPO*

SECTION 3 OF 6
SUBJ:
TIMES EACH YEAR. A SIMILAR INCIDENT HAD OCCURRED IN THE F-111 SIMULATOR IN THE WEEK PRIOR TO THIS OCCURRENCE.
6SQN
007: FATIGUE AND PRESS-ON-ITIS PROBABLY CONTRIBUTED TO THIS OCCURRENCE. THE AIRCREW FROM BOTH AIRCRAFT HAD BEEN AWAKE FOR APPROXIMATELY 16 HOURS AND HAD BEEN AT WORK FOR APPROXIMATELY 8 HOURS BEFORE THE ABORTED TAKE-OFF. THE AUTHORISED CREW DUTY DAY FOR F-111 OPERATIONS IS 12 HOURS. THE FORMATION DEPARTED IMMEDIATELY PRIOR TO THE PLANNED NO LATER THAN TIME OF 2315K DUE TO A NUMBER OF DELAYS DURING SONIC 1 LAUNCH SEQUENCE. THE ACTUAL DEPARTURE TIME IS VERY CLOSE TO THE NATURAL CIRCADIAN LOW, PARTICULARLY AS THE CREWS WERE COMING OFF A DAY FLYING PERIOD. THERE IS HOWEVER NOTHING ABNORMAL IN THE 72 HOUR HISTORIES OF THE CREW WHO HAD JUST ENJOYED FOUR DAYS OFF AS PART OF THE EASTER HOLIDAY.
THE F-111 OPCON WAS RUNNING BEHIND SCHEDULE AND THE STUDENTS HAD ALREADY PLANNED FORMATION SORTIES REDUCED TO SINGLETONS DUE TO AIRCRAFT AVAILABILITY. THE INSTRUCTIONAL STAFF THEREFORE ATTEMPTED TO MAXIMISE THE FORMATION TRAINING OPPORTUNITIES FOR THE STUDENTS. THE PILOT OF SONIC 1 WAS ATTEMPTING TO ACHIEVE THE FORMATION TRAINING BUT FOUND HIMSELF AGAINST A HARD TIME OF 2315K DURING A DIFFICULT AND FRUSTRATING LAUNCH. INDICATIONS OF THIS PRESS-ON OR CAN-DO ATTITUDE ARE EVIDENT IN THE NON-BRIEFED ROLLING TAKE-OFF (SONIC 1 ATTEMPTING TO EXPEDITE THE DEPARTURE) AND SONIC 1 PILOT CHANGE OF HABIT PATTERNS WRT NOT TAKING THE TIME TO RESET THE COCKPIT AND WANDER LIGHTS BEFORE TAKE-OFF.
IT IS POSSIBLE THAT THE PILOT OF SONIC 1, FATIGUED AND RUSHING NORMAL HABIT PATTERNS WOULD NOT HAVE BEEN MENTALLY PREPARED FOR THE SUBSEQUENT EMERGENCY ON TAKE-OFF.
B. FINDINGS:
001: AT NO TIME DURING THE TAKE-OFF WERE SONIC 2 AWARE THAT SONIC 1 HAD ABORTED. HOWEVER, A NUMBER OF CUES WERE AVAILABLE TO SONIC 2 THAT SONIC 1 HAD ABORTED. VISUALLY, THE INSTRUCTOR NAVIGATOR HAD SEEN WHAT WAS AN AN ABNORMAL ORANGE FLAME EMANATE FROM SONIC 1 AND BOTH THE STUDENT PILOT AND INSTRUCTOR NAVIGATOR HAD AT DIFFERENT TIMES DURING THE TAKE-OFF ROLL FAILED TO IDENTIFY THE TELL TALE AND SIGNIFICANT AFTERBURNER FLAME OF SONIC 1. SONIC 2 STUDENT PILOT HAD NOT PREVIOUSLY SEEN THE AFTERBURNER AT NIGHT AS WINGMAN AND HE DID NOT HAVE A PICTURE OF WHAT THEY SHOULD LOOK LIKE FROM A 30 SECOND STREAM DEPARTURE. AURALLY, THERE WAS LITTLE TO CUE THE CREW OF SONIC 2 TO THE ABORT EVEN THOUGH SONIC 1 TRANSMITTED ABORTING AND DECLARED AN ABBREVIATED MAYDAY. THE ONLY RECEPTION BY SONIC 2 WAS THE ACKNOWLEDGEMENT FROM ATC OF THE SONIC 1 MAYDAY OF 'COPIED'.

HOWEVER, DUE TO RECEIVED STRENGTH, RELEVANCE AND COCKPIT WORKLOAD IN SONIC 2 AT THIS TIME THIS TRANSMISSION BY ATC WAS OF LITTLE RELEVANCE. THE KNOWN AND DOCUMENTED POOR PERFORMANCE OF THE F-111 RADIO SUITE, IN PARTICULAR THE VHF RADIO IN USE AT THE TIME EXPLAINS THE LACK OF RECEPTION BY SONIC 2 OF SONIC 1 TRANSMISSIONS. IT IS DIFFICULT TO ASSESS BUT IT IS POSSIBLE THAT HAD ATC TRANSMITTED THE CORRECT READBACK 'SONIC 1 AMBERLEY TOWER ROGER MAYDAY' IN RESPONSE TO SONIC 1'S MAYDAY, SONIC 2 SITUATIONAL AWARENESS MAY HAVE BEEN RE-FOCUSSED ON THE DEVELOPING SITUATION AHEAD.

ON THE NIGHT THE COMBINED AVAILABLE CUES, BOTH VISUAL AND AURAL DID NOT ALTER SONIC 2 PERCEPTION AND EXPECTATION THAT SONIC 1 WAS OPERATIONS NORMAL. CONTRIBUTING TO THIS ERROR OF EXPECTATION WAS THE CREW'S MISDIRECTED TASK FOCUS ON CHECKING THE ENGINE INSTRUMENTS IN LIEU OF CLEARING THE RUNWAY DURING THE STUDENT PILOT'S FIRST NIGHT ROLLING TAKE-OFF. ADDITIONALLY, THE LACK OF A SPECIFIC CIRRICULUM EVENT FOR NIGHT STREAM EMERGENCIES TOGETHER WITH THE LACK OF SUITABLE SIMULATION AND THE MISSED FORMATION TRAINING EVENTS ON PREVIOUS SORTIES DUE TO AIRCRAFT AVAILABILITY MAY HAVE NOT ADEQUATELY PREPARED THE STUDENT PILOT FOR THE CURRICULUM EVENT. FURTHER, BOTH THE STUDENT PILOT AND INSTRUCTOR NAVIGATOR, ALTHOUGH BOTH AWARE THAT THEY COULD NOT SEE SONIC 1 AFTERBURNER, DID NOT COMMUNICATE THIS ESSENTIAL FACT WITH EACH OTHER.

002: TAKE-OFF STREAM INTERVAL WAS NOT FULLY UNDERSTOOD BY ALL AIRCREW IN THE FORMATION. NEITHER 82WG SI(OPS) OR F-111 TACPROCS PROVIDE AN SOP INTERVAL; RATHER A MINIMUM INTERVAL OF 25 SECONDS IS SPECIFIED.

003: THE F-111G OPCON CURRICULUM DESIGN WRT CROUNDSCHOOL, SIMULATOR AND AIRBORNE DESIGN AND INSTRUCTIONAL FLOW IS SOUND. HOWEVER, THE CONTENT OF THE DAY FORMATION MASS BRIEF DOES NOT INCLUDE EMERGENCY CONSIDERATIONS FOR STREAM DEPARTURES, SUCH AS ABORT.

ADDITIONALLY, THE CRM ASPECTS OF ABORT SUCH AS CORRECT HANDLE CONFIRMATION AND R/T CONSIDERATIONS ARE NOT SPECIFIED IN THE STUDENT AIR TRAINING GUIDE. CONSEQUENTLY, THESE CRM ASPECTS ARE NOT STANDARDISED ACROSS THE WING.

004: THE NEW DISPLACED THRESHOLD LIGHTING ON THE DEPARTURE END OF RUNWAY 15 IS BRIGHTER THAN THE SURROUNDING RUNWAY EDGE LIGHTING AND SIGNIFICANTLY BRIGHTER THAN THE EXISTING RUNWAY END LIGHTS THEY REPLACE WHICH THE CREW HAD BECOME ACCUSTOMED TO USING. THE LIGHTS ARE ALSO SPACED FURTHER APART THAN THE ORIGINAL THRESHOLD LIGHTING. WHEN VIEWED FROM A POINT EQUIDISTANT FROM BOTH THRESHOLDS THE GREATER INTENSITY AND SPACING OF THE DEPARTURE END RUNWAY 15 THRESHOLD LIGHTING CREATES A VISUAL ILLUSION THAT THE DISPLACED THRESHOLD IS ABOUT 1,500 FEET AWAY WHERE THE THRESHOLD OF RUNWAY 15 IS 3,500 FEET AWAY. THIS VISUAL ILLUSION LEAD THE PILOT OF SONIC 1 TO BELIEVE THAT HE WAS MUCH CLOSER TO THE END OF RUNWAY 15 DURING THE ABORT THAN HE ACTUALLY WAS. ALSO, THE TEMPORARY ARRESTOR GEAR AT THE DEPARTURE END OF RUNWAY 15 HAD NO LIGHTING, SO THE PILOT LACKED THIS ADDITIONAL AND USEFUL CUE USED TO ASSESS DISTANCE TO THE CABLE AND DISTANCE TO THE END OF THE RUNWAY. ALSO, THE DISTANCE TO RUN MARKER BOARDS HAD NOT BEEN MODIFIED TO REFLECT THE DISTANCE TO THE DISPLACED THRESHOLD AND THEY WERE THEREFORE OF LITTLE USE ON THIS OCCASION. IN THE TIME COMPRESSION OF THE ABORT SEQUENCE, THE STUDENT NAVIGATOR OF SONIC 1 DID NOT CALL OUT ANY DISTANCE TO GO INFORMATION THAT MAY HAVE INCREASED THE PILOT'S AWARENESS REGARDING HOW MUCH RUNWAY DISTANCE REMAINED TO STOP THE AIRCRAFT. IF THE MARKER BOARDS WERE CORRECT AND NO MENTAL CALCULATION WAS REQUIRED TO WORK OUT THE CORRECT DISTANCE TO THE TEMPORARY THRESHOLD, THE NAVIGATOR MAY HAVE MADE A DISTANCE TO GO CALL TO THE PILOT. CONSEQUENTLY, THE PILOT PERCEIVED HE WAS ABOUT TO OVERRUN THE RUNWAY AND INSTINCTIVELY REACHED FOR THE HOOK HANDLE. HAVING NOT IDENTIFIED THE HOOK HANDLE THE PILOT INADVERTENTLY PULLED THE AUXILIARY BRAKE HANDLE.

005: THE PILOT OF SONIC 1 DID NOT POSITIVELY IDENTIFY THE HOOK HANDLE AND PULLED THE AUXILIARY BRAKE HANDLE BY MISTAKE. THE PLANNED

ACTION PRECEDENCE: ROUTINE
INFO PRECEDENCE: ROUTINE
ORIGINATORS DTG: 030349Z MAY 06
SICs: KQL -ACCIDENTS/INCIDENTS/VIOLATIONS/OVERFLIGHTS

FROM: DFS-ADF-DAHRTS
ACTION: 82WG
DEFAIR DFS
HQACG
INFO: 1SQN
44WG DET AMB*
6SQN
78WG
81WG
ACAUST
ACPA-ADF
ARDU
AVMED
CSUAMB
DGTA DAIRMAINT
HQ44WG
HQACAUST
SRSPO*

SECTION 4 OF 6
SUBJ:
REFLEX ACTION. THIS WAS A RESULT OF THE PILOT OF SONIC 1 BELIEVING HE WAS ABOUT TO OVER RUN THE DEPARTURE END OF THE RUNWAY DUE TO THE RUNWAY 15 DEPARTURE END LIGHTING APPEARING TO BE MUCH CLOSER THAN IT ACTUALLY WAS. IT IS PROBABLE THAT THE PILOT, FACED WITH A PERCEIVED TIME CRITICAL SITUATION IN A HIGH STRESS ENVIRONMENT REVERTED TO THE WELL PRACTICED HABIT OF REACHING FOR THE AUXILIARY BRAKE HANDLE RATHER THAN THE HOOK HANDLE WHICH HE HAD ONLY USED SEVERAL TIMES IN HIS CAREER.
COCKPIT LIGHTING SET-UP MAY HAVE CONTRIBUTED TO THE PILOT MISIDENTIFYING THE HOOK HANDLE. VISUAL IDENTIFICATION OF THE HANDLE WOULD HAVE BEEN MORE DIFFICULT THAN USUAL AS THE PILOT HAD NOT REDUCED THE BRIGHTNESS OF HIS WANDER LIGHT WHICH IS LOCATED IN FRONT OF THE HOOK HANDLE AND THE AUXILIARY BRAKE HANDLE AND SHINES DOWN ONTO THE PILOT'S LEFT KNEEBOARD. THIS WANDER LIGHT, IF LEFT ON BRIGHT FOR TAKE-OFF CREATES A DARK HOLE BEHIND IT AND MAKES SWITCH/HANDLE IDENTIFICATION MORE DIFFICULT. FOR THIS REASON SOME F-111 CREWS TURN THIS LIGHT OFF FOR DEPARTURE. THE PILOT DID NOT DO SO IN THIS CASE DUE TO PERCEIVED TIME PRESSURE TO DEPART BEFORE THE BRIEFED NO LATER THAN TIME.
006: ON THE NIGHT OF THE INCIDENT THE DISTANCE TO RUN MARKER BOARDS WERE NOTAMED AS INCORRECT FOR RWY 15. THE TEMPORARY RWY 15 DEPARTURE END ARRESTOR CABLE WAS NOTAMED FOR HAVING NO LIGHTING. RUNWAY 15/33 WAS NOTAMED FOR REDUCED OPERATING LENGTH OF 7000 FEET.
007: THE CAPTAIN OF SONIC 1 ABORTED THE TAKE-OFF IAW HIS EMERGENCY BRIEF AND HIS DECISION TO ABORT IS ASSESSED AS BEST PRACTICE FOR COMPLETE THRUST LOSS FROM AN ENGINE IN THE TAKE-OFF HIGH SPEED PHASE IN THE PREVAILING CIRCUMSTANCES. LIFT OFF SPEED AND CALCULATED REFUSAL SPEED FOR DRY NO CABLE CONDITIONS WAS 160KIAS. REFUSAL SPEED FOR DRY WITH CABLE CONDITIONS WAS GREATER THAN LIFT-OFF.
008: IT IS POSSIBLE THAT FATIGUE AND PRESS-ON-ITS CONTRIBUTED TO THIS OCCURRENCE.
C. CONTRIBUTING FACTORS:
UNSAFE ACTS OR CONDITIONS/ERRORS/PERCEPTUAL ERRORS (DUE TO)/ILLUSION/2
UNSAFE ACTS OR CONDITIONS/ERRORS/SKILL-BASED ERRORS/INADVERTENT USE OF CONTROLS/1
UNSAFE ACTS OR CONDITIONS/ERRORS/DECISION ERRORS/WRONG RESPONSE TO EMERGENCY/3
PRECONDITIONS FOR UNSAFE ACTS/SUBSTANDARD CONDITIONS/WORKSPACE/ERGONOMICS/2
PRECONDITIONS FOR UNSAFE ACTS/SUBSTANDARD PRACTICES/TRAINING/NOT TRAINED FOR TASK/1

PRECONDITIONS FOR UNSAFE ACTS/SUBSTANDARD PRACTICES/CREW RESOURCE MANAGEMENT/SITUATIONAL AWARENESS/3
PRECONDITIONS FOR UNSAFE ACTS/SUBSTANDARD CONDITIONS/EQUIPMENT/UNRELIABLE/FAULTY/2
ORGANISATIONAL INFLUENCES/ORGANISATIONAL PROCESSES/PROCEDURES/DOCUMENTATION/2
ORGANISATIONAL INFLUENCES/ORGANISATIONAL PROCESSES/OVERSIGHT/RISK MANAGEMENT/3
D. DEFENCES:
DETECTION - HOW WAS THE PROBLEM REVEALED?/AIRCREW
WHAT, IF ANYTHING, LIMITED THE CONSEQUENCES OF THE OCCURRENCE?/EQUIPMENT/EMERGENCY SERVICES

10. AVIATION RISK MANAGEMENT:
RM STRATEGIES: AMBERLEY BASO COULD NOT IDENTIFY AN AVIATION RISK MANAGEMENT PLAN SPECIFICALLY TAILORED FOR THE ONGOING RUNWAY WORKS. THERE WAS NO SPECIFIC 6SQN AVIATION RISK MANAGEMENT PLAN FOR THE ONGOING RUNWAY WORKS.
RISK MANAGEMENT EFFECTIVE: N/A
RM NARRATIVE: DELIBERATE AVRM, RESULTING IN A DISCRETE RMP AS DEFINED BY 82WG SI(OPS) 6-4 PARAGRAPH 14 MAY HAVE IDENTIFIED THE HAZARDS RELATING TO A HIGH SPEED ABORT AT NIGHT ON A RELATIVELY SHORT RUNWAY WITH MODIFIED AIRFIELD LIGHTING. SUITABLE CONTROLS SUCH AS AIRCREW SIMULATOR TRAINING AND AIRFIELD LIGHTING MODIFICATIONS MAY HAVE BEEN CONSIDERED.

11. ACTIONS AND RECOMMENDATIONS:
A. ACTIONS:
002: THE DAY FORMATION MASS BRIEF IS TO BE EXPANDED TO INCLUDE EMERGENCY PROCEDURES SPECIFIC TO STREAM DEPARTURES IN FORMATION. THE IMPORTANCE OF MAINTAINING SITUATIONAL AWARENESS OF FORMATION AIRCRAFT AHEAD IN THE DEPARTURE PHASE AND APPROPRIATE DECISION POINTS FOR ABORT SHOULD ALSO BE INCLUDED.
003: THE STUDENT AIR TRAINING GUIDE (SATG), CHAPTER 6, ANNEX A GUIDANCE ON CRM ISSUES IS TO BE AMENDED TO READ; 'GOOD CRM PRACTICE REQUIRES THE PILOT TO RECEIVE CONFIRMATION OF THE CORRECT CONTROL/SWITCH/PUSHBUTTON BY THE NAVIGATOR PRIOR TO ACTIONING CHECKLIST ITEMS. THE NAVIGATOR MUST BE INCLUDED IN ALL CRITICAL DECISIONS AND MUST SPEAK UP LOUDLY AND CLEARLY IF HE/SHE FEELS THE PILOT HAS MISTAKENLY GONE FOR THE INCORRECT CONTROL. IN THE CASE OF ENGINE SHUTDOWN THE NAVIGATOR MUST GUARD THE THROTTLE OF THE GOOD ENGINE.'
FURTHER, ANNEX A SHOULD BE EXPANDED TO GIVE GUIDANCE ON SOUND CRM PRINCIPLES FOR ALL F-111 BOLDFACE EVENTS.
005: THE FLYING INSTRUCTORS' MANUAL F-111, SECTION 2, CHAPTER 9 PARAGRAPH 14, RADAR TRAIL DEPARTURE IS TO BE AMENDED TO INCLUDE GUIDANCE AS TO THE CORRECT CREW TASK PRIORITISATION, TECHNIQUE, FORMATION DISPOSITION AWARENESS AND EMERGENCY HANDLING TECHNIQUES DURING THE TAKE-OFF AND DEPARTURE.
ADDITIONALLY, THE MANUAL IS TO BE AMENDED TO INCLUDE REFERENCE TO THE IMPORTANCE OF CORRECT COCKPIT LIGHTING LEVELS AND THE IMPACT OF BRIGHT WANDER LIGHTS ON SWITCH/HANDLE IDENTIFICATION.
006: THE SATG SECTION PERTAINING TO EMERGENCY BRIEFS SHOULD BE EXPANDED TO DISCUSS FORMATION CONSIDERATIONS, INCLUDING AN EXAMPLE OF AN EMERGENCY BRIEF SUITABLE FOR A WINGMAN FLYING A STREAM DEPARTURE.
007: THE SATG IS TO BE AMENDED TO INCLUDE THE ESSENCE OF THE FOLLOWING GUIDANCE FOR R/T DURING AN ABORTED TAKE-OFF; 'ONCE THE AIRCRAFT IS UNDER CONTROL DURING THE ABORT AND A DECISION HAS BEEN MADE REGARDING THE DEPLOYMENT OF THE HOOK THE PILOT SHOULD ADVISE ATC OF THE ABORT. IF IN FORMATION THE NAVIGATOR SHOULD REPEAT THE ABORT CALL ON THE FORMATION COMMON FREQUENCY IN USE.'
008: EXECUTIVE OFFICER 6 SQUADRON IS TO RECOMMEND A CHANGE TO 82WG SI (OPS) TO ENSURE THAT AN ABORTED TAKE-OFF IS COMPLETED BY EACH

ACTION PRECEDENCE: ROUTINE
INFO PRECEDENCE: ROUTINE
ORIGINATORS DTG: 030349Z MAY 06
SICs: KQL -ACCIDENTS/INCIDENTS/VIOLATIONS/OVERFLIGHTS

FROM: DFS-ADF-DAHRTS
ACTION: 82WG
DEFAIR DFS
HQACG
INFO: 1SQN
44WG DET AMB*
6SQN
78WG
81WG
ACAUST
ACPA-ADF
ARDU
AVMED
CSUAMB
DGTA DAIRMAINT
HQ44WG
HQACAUST
SRSPO*

SECTION 5 OF 6
SUBJ:
45 DAY SIMULATOR TRAINING CYCLE. THE TRAINING IS TO BE PROVIDED SO THAT THE CREW ARE NOT AWARE OF WHEN THE ABORT WILL BE CONDUCTED SO THEY MAY NOT BE PRIMED FOR THE EMERGENCY AND THEREBY REDUCE THE POTENTIAL TRAINING VALUE.
009: THE SATG IS TO BE AMENDED TO INCLUDE GUIDANCE FOR THE PILOT TO VISUALLY IDENTIFY THE HOOK HANDLE WHEN THE ABORT PROCEDURES ARE OUTLINED DURING THE TAKE-OFF/EMERGENCY BRIEF PORTION OF THE BEFORE TAKE-OFF VAS.
010: EXECUTIVE OFFICER 6 SQUADRON IS TO RECOMMEND A CHANGE TO THE SECOND STEP OF THE BOLDFACE FOR THE ABORT CHECKLIST INCLUDED IN AAP 7214.003-1 AND AAP 7214.014-1 AND ASSOCIATED CHECKLISTS TO READ: '2. HOOK HANDLE- IDENTIFY AND PULL (IF REQUIRED).'
011: EXECUTIVE OFFICER 6 SQUADRON IS TO RECOMMEND AN AMENDMENT TO EXPAND THE CAUTION ON PAGE 4-9 OF AAP7214.003-1 AND PAGE 4-8 OF AAP 7214.014-1 TO CAUTION AIRCREW OF THE CLOSE PROXIMITY AND SIMILAR OPERATIONAL FUNCTION OF THE AUXILIARY BRAKE HANDLE AND THE HOOK HANDLE.
012: THE SATG, FLYING INSTRUCTOR'S MANUAL AND TAKE-OFF PROCEDURES AND EMERGENCIES MASS BRIEF IS TO BE AMENDED TO INCLUDE GUIDANCE ON THE MOVEMENT OF THE PILOT'S LEFT HAND WHEN REACHING FOR THE HOOK HANDLE OR THE AUXILIARY BRAKE HANDLE. WHEN REACHING FOR THE HOOK HANDLE THE PILOTS LEFT HAND IS TO FIRST LOCATE THE CANOPY SILL THEN MOVE FORWARD IN AN OVERHAND GRIP TO IDENTIFY THE HOOK HANDLE PRIOR TO PULLING IT. IN CONTRAST THE PILOT'S LEFT HAND IS TO GO DIRECTLY FORWARD IN AN UNDERHAND GRIP PRIOR TO PULLING THE AUXILIARY BRAKE HANDLE.
013: EXECUTIVE OFFICER 6 SQUADRON IS TO BRIEF ALL UNIT AIRCREW ON THE HAZARDS OF STATING 'SOP' IN FORMATION BRIEFS AS 'SOP' WILL MEAN DIFFERENT THINGS TO DIFFERENT PEOPLE DEPENDING ON A WIDE VARIETY OF CIRCUMSTANCE. EXPECTATION IS FOR CREWS TO THOROUGHLY BRIEF ALL FACETS OF THE MISSION SO THERE IS NO MISUNDERSTANDING.
B. RECOMMENDATIONS:
001: RECOMMEND 82WG INVESTIGATE THE ENGINEERING SOLUTION TO ENHANCE THE F-111 SIMULATOR PERFORMANCE MODELING TO PROVIDE THE CAPABILITY TO SIMULATE STREAM FORMATION PROCEDURES (INCLUDING ABORTS) AND VISUALS FROM BRAKES RELEASE.
002: RECOMMEND 82WG CONDUCT A DETAILED RISK ASSESSMENT ON THE SAFETY IMPACT OF THE POOR PERFORMANCE OF THE F-111 RADIO SUITE WHILST IN TRAIL FORMATION DISPOSITION WITH A VIEW TO FORMALLY IDENTIFYING AND CONTROLLING THE RISKS ASSOCIATED WITH OPERATING IN FORMATION WITH KNOWN RADIO PERFORMANCE PROBLEMS.
003: RECOMMEND SATCO BRIEF ALL AMBERLEY ATC ON THE IMPORTANCE OF

CORRECT READ BACK REQUIREMENTS FOR DECLARED AIRCRAFT EMERGENCIES.
004: RECOMMEND 44WG RAISE A NOTAM HIGHLIGHTING THE INCONSISTENT RUNWAY END LIGHTING INTENSITY AND LIGHTING SPACING BETWEEN THE EXISTING AND DISPLACED THRESHOLD.
005: RECOMMEND SATCO AMBERLEY PLACE A WORKS REQUEST TO INSTALL TEMPORARY LIGHTING ON THE TEMPORARY ARRESTOR CADLE INSTALLED ON THE DEPARTURE END OF RUNWAY 15.
006: RECOMMEND SATCO AMBERLEY PLACE A WORKS REQUEST TO HAVE THE EXISTING DISTANCE TO RUN MARKER BOARDS REPAINTED TO ACCURATELY REFLECT THE RUNWAY REMAINING TO THE DISPLACED THRESHOLD.
007: THE AUXILIARY BRAKE HANDLE COMPRISES A THREADED SHAFT WITH A FEMALE TYPE HANDLE WHICH THREADS ONTO THE SHAFT. RECOMMEND 82WG INVESTIGATE THE ENGINEERING SOLUTION TO REPLACE THE EXISTING HANDLE WITH A DIFFERENT SHAPE HANDLE. RECOMMEND A CHANGE TO A SPHERICAL TYPE FEMALE HANDLE BE INVESTIGATED. CONSIDERATION COULD ALSO BE GIVEN TO ORIENTATING THE EXISTING HANDLE TO A NON ADJUSTABLE POSITION DIFFERENT TO THE ORIENTATION OF THE HOOK HANDLE, THEREBY REQUIRING A DIFFERENT HAND GRIP TO PULL.
008: AS FATIGUE COMMENCES TO BUILD FROM THE MOMENT A PERSON FIRST AWAKES AND NOT FROM THE START OF DUTY RECOMMEND 82WG EXPAND THE CURRENT INSTRUCTION FOUND AT 82WG SI (OPS) 6-10 F-111 AIRCREW DUTY LIMITS, TO INCLUDE GUIDANCE ON THE EFFECTS OF FATIGUE AFTER BEING AWAKE FOR SIGNIFICANT PERIODS BEFORE COMMENCING DUTY.
009: THAT 82 WG DISCUSS AT THE NEXT WASCM THE FEASIBILITY OF ESTABLISHING A PRACTICE WHEREBY AIRCREW WILL RAISE ASORS FOR F-111 SIMULATOR SORTIES WHERE THERE WAS A SIGNIFICANT HUMAN FACTOR INCIDENT. IN THIS WAY WE CAN LEARN FREE LESSONS IN THE SIMULATOR AND AVOID RE-LEARNING THEM IN THE AIRCRAFT.
010: THAT 82 WG DRAFT A DISCRETE RMP TO DEAL WITH THE ONGOING RUNWAY WORKS AT AMBERLEY. THIS RMP SHOULD DEAL WITH OPERATING FROM THE SHORTENED RUNWAY ON RUNWAY 15/33 AS WELL AS OPERATIONS FROM RUNWAY 04/22.

12. AIRCRAFT DAMAGE OR COMPONENT CHANGES:

13. RELATED CORRESPONDENCE:

14. SUPERVISOR REVIEW:
A HIGH SPEED ADORT AT NIGHT IN ANY AIRCRAFT TYPE IS A SERIOUS OCCURRENCE. IN THIS CASE THE RIGHT ENGINE SURGE OCCURRING AT ROTATE SPEED MADE THE SUBSEQUENT EVENTS MORE TIME CRITICAL AS A RESULT OF HIGHER AIRCRAFT GROUND SPEED AS WELL AS THE REDUCED AVAILABLE STOPPING DISTANCE. IN ANY HIGH SPEED ABORT THE CRITICAL ACTIONS INCLUDED AS PART OF THE ABORT CHECKLIST NEED TO BE CONDUCTED DELIBERATELY BY THE CREW TO REDUCE THE RISK OF RUNWAY DEPARTURE, OVERRUN OR INCORRECT SERVICE SELECTION.

OPERATIONAL CONVERSION PROVIDES TRAINING AND EXPOSURE TO THE BROADEST RANGE OF OPERATIONS AND EMERGENCIES WITHIN THE TIME AND RESOURCE CONSTRAINTS OF THE COURSE. AS A DIRECT RESULT OF THIS, PROFICIENCY AT A SINGLE EVENT TAKES TIME AND EXPERIENCE TO ACHIEVE. INSTRUCTIONAL STAFF ARE USED TO SUPERVISE AND MITIGATE THE RISKS ASSOCIATED WITH UNDERTAKING EVENTS FOR THE FIRST TIME, AND IN THIS INSTANCE THERE ARE SOME VALUABLE LESSONS TO BE LEARNED.

THE IMPORTANCE OF CORRECT AND TIMELY COMMUNICATION AND THE IMPORTANCE OF BEING ASSERTIVE WHEN AN ABNORMAL SITUATION IS RECOGNISED ARE TWO CLEAR CRM LEARNING OUTCOMES FROM THIS INCIDENT. ALL CREWS ARE ENCOURAGED TO BE MORE ASSERTIVE ABOUT ABNORMALITIES OR DEVIATIONS FROM THE PLAN DURING TIME CRITICAL SITUATIONS: BY SHARING INFORMATION THERE IS A GREATER CHANCE OF RECOGNISING AND PREVENTING A DEVELOPING SITUATION FROM HAVING AN ADVERSE OUTCOME.

15. CO/OC REVIEW:

ACTION PRECEDENCE: ROUTINE
INFO PRECEDENCE: ROUTINE
ORIGINATORS DTG: 030349Z MAY 06
SICs: KQL -ACCIDENTS/INCIDENTS/VIOLATIONS/OVERFLIGHTS

FROM: DFS-ADF-DAHRTS
ACTION: 82WG
DEFAIR DFS
HQACG
INFO: 1SQN
44WG DET AMB*
6SQN
78WG
81WG
ACAUST
ACPA-ADF
ARDU
AVMED
CSUAMB
DGTA DAIRMAINT
HQ44WG
HQACAUST
SRSPO*

FINAL SECTION OF 6
SUBJ:
'AIRCRAFT ACCIDENT' BUT FOR THE CLEAR DECISION MAKING AND ACTIONS OF ALL INVOLVED AS THE SITUATION DEVELOPED ON THE INCIDENT EVENING. THIS INCIDENT OCCURED AT THE END OF A DUTY DAY FOR MANY INVOLVED AND THE RESPONSE WAS BOTH TIMELY AND WELL RECEIVED. IN PARTICULAR, THE DILIGENCE OF THE 382ECSS FIRE SECTION PERSONNEL WAS OUTSTANDING. A REVIEW OF THE BASE RESPONSE AND ATC ISSUES WAS OUTSIDE THE SCOPE OF THIS REPORT AND HAS BEEN CONDUCTED SEPERATELY.

THE INVESTIGATION TEAM, EXTERNAL TO 6SQN AND INVOLVING DDAAFS STAFF, HAS THOROUGHLY EXAMINED THE SEQUENCE OF EVENTS AND CIRCUMSTANCES SURROUNDING THE INCIDENT, IDENTIFIED THE ERRORS MADE WITH A FOCUS ON HUMAN FACTORS. THE SUBSEQUENT ACTIONS AND RECOMMENDATIONS WILL NOW BE ADDRESSED TO MITIGATE IDENTIFIED HAZARDS AND MINIMISE THE PROBABILITY OF THIS TYPE OF INCIDENT OCCURING AGAIN.

16. SASOR TO FOLLOW

DISTRIBUTION
DIST: [SRSPO] REGISTRY, REGISTRY SUPERVISOR
[382ECSS] NCO RMS
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030547Z MAY 06
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Received Copy	UNCLASSIFIED

PRECEDENCE ACTION	PRECEDENCE INFO	DATE TIME GROUP	ORIG NO
ROUTINE	ROUTINE	060416Z FEB 08	
SICS			
KQL			

FROM: ☑ DFS-ADF-DAHRTS
TO: ☑ 82WG
☑ DEFAIR DDAAFS
☑ HQACG
INFO: ☑ 1SQN
☑ 44WG DET AMB
☑ 78WG
☑ 81WG
☑ ACAUST
☑ ACPA-ADF
☑ ARDU
☑ AVMED
? CSUAMB
☑ DGTA DAIRMAINT
☑ HQ44WG
☑ HQACAUST
☑ SRSPO

FOLIO
Lifeline 00541/
SRSPO/ 2008
Entered By: JA

SRSPO FOR CENGR
44WG FOR CO
CSUAMB FOR BFSO/BOPSO

SUBJ:AVIATION SAFETY OCCURRENCE REPORT: 6SQN-021-2006/SASOR 2

1. SERIOUS INCIDENT

2. HUMAN/REJECTED TAKE-OFF/HIGH SPEED ABORT AND WHEEL FIRE

3. 18 2315 LOCAL APR 06

4. LOCATION: AMBERLEY/RUNWAY 15//

5. ENVIRONMENTAL CONDITIONS: NIGHT/VMC/N/A
WEATHER: LIGHT WINDS. MOON ILLUMINATION 78%.

6. AIRCRAFT DETAILS:
AIRCRAFT 1: F-111/A08G/A8-512/SONIC 1
SPEED: 100 TO 200 KIAS
ALTITUDE: 0 TO 500 FEET AMSL
FLT PATH: N/A
FLT PHASE: TAKE-OFF
LAST DEPARTURE POINT: YAMB

RECEIVED
7 FEB 2008
SRSPO

DRAFTER'S NAME AND TITLE	OPERATOR	PHONE No		REF FILE No
RELEASER'S NAME AND TITLE	BRANCH/UNIT	SIGNATURE		
DATE		No OF PAGES	PAGE No	OVERPAGE
7/2/2008		15	1	Yes

Received Copy	UNCLASSIFIED

PRECEDENCE ACTION	PRECEDENCE INFO	DATE TIME GROUP	ORIG NO
ROUTINE	ROUTINE	060416Z FEB 08	
SICS			
KQL			

INTENDED LANDING POINT: YAMB
MISSION: TRAINING/OPCONV AP15N
NVD AIDED: NO
EXTERNAL NVG LIGHTING: OFF
NVG SEARCH LIGHTS: OFF
STROBE/ANTI COLL LIGHTS: ON
LNDG LIGHTS: ON
NAV LIGHTS: ON
HELMET MOUNTED DEVICE: NO
AIRCRAFT 2: F-111/A08G/A8-271/SONIC 2
SPEED: 100 TO 200 KIAS
ALTITUDE: 0 TO 500 FEET AMSL
FLT PATH: CLEAR
FLT PHASE: TAKE-OFF
LAST DEPARTURE POINT: YAMB
INTENDED LANDING POINT: YAMB
MISSION: TRAINING/OPCONV AP16PI
NVD AIDED: NO
EXTERNAL NVG LIGHTING: OFF
NVG SEARCH LIGHTS: OFF
STROBE/ANTI COLL LIGHTS: ON
LNDG LIGHTS: ON
NAV LIGHTS: ON
HELMET MOUNTED DEVICE: NO

7. PERSONNEL DETAILS:
NAV/####/U/AUTHOFF:NO/AC563 REPORT:NO/
AC/####/QFI-D/AUTHOFF:NO/AC563 REPORT:NO/

8. HAZARD NARRATIVE:
SONIC WAS A 2 SHIP FORMATION FOR A NIGHT TFR CONVERSION COURSE SORTIE. THE DEPARTURE FROM AMBERLEY WAS PLANNED AS A 60 SECOND STREAM TAKE-OFF. SONIC 1 COMMENCED A ROLLING TAKEOFF ON RUNWAY 15 THAT PROCEEDED NORMALLY UNTIL ROTATE SPEED, AT WHICH POINT THE RIGHT ENGINE FAILED DUE TO A BIRDSTRIKE. THE TAKEOFF WAS ABORTED. DURING THE ABORT THE PILOT MIS-IDENTIFIED THE HOOK HANDLE AND MOMENTARILY APPLIED THE PARK BRAKE, RESULTING IN BLOWING BOTH MAIN GEAR TYRES. THE AIRCRAFT SKIDDED TO A STOP AND THE MAIN WHEELS WERE GROUND DOWN RESULTING IN TWO WHEEL FIRES. A MAYDAY WAS DECLARED WITH AMBERLEY TOWER AND THE AIRCRAFT SHUTDOWN. AT THIS TIME SONIC 2 TOOK OFF OVER THE TOP OF SONIC 1. THE CREW OF SONIC 1 INSERTED THE EJECTION PINS THEN PERFORMED AN EMERGENCY EGRESS. THE CREW RAN FORWARD OF THE AIRCRAFT UNTIL FIRE SERVICES HAD EXTINGUISHED THE FIRES, THEN RETURNED TO THE FIRE TENDER TO ADVISE THE FIRE CONTROLLER OF THE

DRAFTER'S NAME AND TITLE	OPERATOR	PHONE No		REF FILE No
RELEASER'S NAME AND TITLE	BRANCH/UNIT	SIGNATURE		
DATE		No OF PAGES	PAGE No	OVERPAGE
7/2/2008		15	2	Yes

Received Copy	UNCLASSIFIED

PRECEDENCE ACTION	PRECEDENCE INFO	DATE TIME GROUP	ORIG NO
ROUTINE	ROUTINE	060416Z FEB 08	
SICS			
KQL			

FUEL AND MUNITIONS STATE OF THE AIRCRAFT. THE CREW OF SONIC 1 WERE TAKEN TO 1ATHS FOR MEDICAL ASSESSMENT. SONIC 2 RETURNED TO AMBERLEY AFTER THEIR SORTIE AND HELD OVERHEAD WHILE THE RUNWAY WAS SWEPT CLEAR OF FOD. SONIC 2 LANDED ON RUNWAY 33 APPROACHING OVER SONIC 1 WHICH WAS STILL ON THE RUNWAY. ATC LAID LIGHTS FOR A DISPLACED THRESHOLD WHICH LEFT 6000 FEET REMAINING FOR SONIC 2 TO LAND.

9. INVESTIGATION:
A. ANALYSIS:
6SQN
01: PROGRAMMING AND PRE-FLIGHT BRIEFING
PROGRAMMING: THE MISSION WAS PROGRAMMED FOR THE SECOND NIGHT WAVE AS AP15N FOR SONIC 1 AND AP16PI FOR SONIC 2. SONIC 1 WAS CREWED BY A STUDENT NAVIGATOR AND A QFI WHILST SONIC 2 WAS CREWED BY A STUDENT PILOT AND AN INSTRUCTOR NAVIGATOR. THE 6 SQUADRON DAILY FLYING PROGRAMME SCHEDULED TWO NIGHT WAVES IN LIEU OF THE USUAL SINGLE WAVE TO OPTIMISE F-111G AIRCRAFT AVAILABILITY WITHIN THE PERIOD OF PLANNED NIGHT FLYING OPERATIONS. THE INCIDENT MISSION WAS SCHEDULED TO TAKE-OFF AT 2200K.
PRE-FLIGHT BRIEFING: SONIC 1 INTENDED THE FORMATION TO DEPART IN 60 SECONDS STREAM AND HAD ANNOTATED THE DOMESTICS CARD WITH 'SOP 60" STREAM'. SONIC 2 UNDERSTOOD THE SOP NIGHT/IMC STREAM DEPARTURE INTERVAL TO BE 30 SECONDS AND THAT THE '60" STREAM' ANNOTATION ON THE DOMESTICS CARD REFERRED ONLY TO THE FORMATION TRAIL INTERVAL TO ACHIEVE ENROUTE.
6SQN
02: GROUND OPERATIONS, ABORT AND EMERGENCY EGRESS
SONIC 1 EXPERIENCED A NUMBER OF DELAYS DURING THE AIRCRAFT LAUNCH PHASE, INCLUDING; GROUNDCREW FINISHING MAINTENANCE AND PAPERWORK ON THE TAIL HOOK AREA, UTILITY HYDRAULIC PRESSURE GAUGE MALFUNCTION DURING RIGHT ENGINE START, DASH 60 POWER CART DROPPING EXTERNAL POWER DURING THE ENGINE START SEQUENCE AND A FAILED FLIGHT CONTROL BIT. THESE DELAYS PLACE SONIC 1 WELL BEHIND IN THE LAUNCH SEQUENCE COMPARED TO SONIC 2 WHO WAS NOW WAITING IN THE RUNWAY 15 ORP. SONIC 1 CONDUCTED TFR GROUND CHECKS AND BEFORE TAKE-OFF VAS ON THE TAXI PRIOR TO CALLING READY AND GAINING A ATC DEPARTURE AND TAKE-OFF CLEARANCE FROM RUNWAY 15. THE EMERGENCY BRIEF GIVEN AS PART OF THE PRE-TAKEOFF VA'S COMPLIED TO THE FORMAT GIVEN IN THE SATG BUT DID NOT INCLUDE ANY FORMATION CONSIDERATIONS. SONIC 1 ELECTED TO CONDUCT A ROLLING TAKE-OFF TO EXPEDITE DEPARTURE AND ROLLED DOWN THE RUNWAY 26 SECONDS PRIOR TO THE PLANNED NO LATER THAN TIME OF 2315K.
THE TAKE-OFF WAS NORMAL UNTIL 146 KNOTS GROUNDSPEED WHEN THE RIGHT ENGINE INGESTED A BIRD, SUFFERING A COMPRESSOR STALL AND ENGINE SURGE. THE PILOT FELT THE THRUST LOSS, OBSERVED SPARKS AND ORANGE

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FLAME ABEAM THE COCKPIT ON THE NAVIGATOR'S SIDE AND COMMENCED THE ABORT. CONCURRENTLY, THE NAVIGATOR OBSERVED THE RIGHT ENGINE EPR REDUCE TO 1.0, SAW THE FLAME AND SPARKS AND CALLED 'ABORT ABORT ABORT RIGHT ENGINE FLAMEOUT OF SOME SORT'. THE AIRCRAFT ACHIEVED A MAXIMUM SPEED OF 154 KNOTS GROUNDSPEED DURING THE ABORT. ROTATE SPEED WAS CALCULATED TO BE 145 KIAS AND LIFT-OFF 160 KIAS. SHORTLY AFTER THE ABORT WAS INITIATED THE PILOT LOOKED AHEAD TO ASSESS THE RUNWAY DISTANCE REMAINING AND PERCEIVED THAT THE DISPLACED RUNWAY THRESHOLD RED LIGHTS WERE EXTREMELY CLOSE. THE PILOT REACHED FOR THE HOOK HANDLE INSTINCTIVELY AND PULLED IT TO FULL EXTENSION. THE RIGHT TYRE BLEW IMMEDIATELY AND THE PILOT REALISED HE HAD PULLED THE AUXILIARY BRAKE HANDLE AND PUSHED IT ALL THE WAY IN. AS THE AUXILIARY BRAKE HANDLE WAS BEING RESET THE LEFT TYRE BLEW. THE PILOT THEN PULLED THE HOOK HANDLE TO FULL EXTENSION. THE AIRCRAFT CONTINUED TO SLIDE ON ITS BLOWN TYRES AND AFTER CUTTING THROUGH THE ARRESTOR CABLE CAME TO REST NEAR THE RUNWAY CENTRELINE 500 FEET BEYOND THE DISPLACED THRESHOLD. THE PILOT SHUT DOWN BOTH ENGINES AND INSTRUCTED THE NAVIGATOR TO INSERT THE EJECTION PINS. THE CREW THEN HEARD SONIC 2 PASS DIRECTLY OVERHEAD ON DEPARTURE. THE PILOT ATTEMPTED TO PUSH BOTH ENGINE FIRE PUSH BUTTONS IAW THE ABANDONING THE AIRCRAFT ON THE GROUND CHECKLIST BUT HAD DIFFICULTY IN THE NOW DARK COCKPIT. INVESTIGATION REVEALED THAT NEITHER ENGINE FIRE PUSH BUTTON WAS DEPRESSED AND IT IS ASSESSED THAT THIS HAD NO EFFECT ON THE EVENTUAL OUTCOME. THE CREW, AWARE OF WHEEL FIRES, CONDUCTED A RAPID GROUND EGRESS. EMERGENCY SERVICES ARRIVED IN ATTENDANCE AND THE WHEEL FIRES WERE EXTINGUISHED AND THE CREW TAKEN TO MEDICAL FOR EVALUATION AND LATER RELEASED BACK TO THE UNIT.

6SQN

03: SONIC 2 TAKE-OFF PHASE

PRIOR TO TAKE-OFF THE CREW OF SONIC 2 COMPLETED THE PRE-TAKEOFF VA'S AND TFR CHECKS IN THE ORP FOR RUNWAY 15. THE EMERGENCY BRIEF GIVEN AS PART OF THE PRE-TAKEOFF VA'S COMPLIED TO THE FORMAT GIVEN IN THE SATG BUT DID NOT INCLUDE ANY FORMATION CONSIDERATIONS. SONIC 2 ACHIEVED A 33-SECOND STREAM ROLLING DEPARTURE BEHIND SONIC 1. SONIC 2 CAVR ANALYSIS REVEALED THAT AT 2315:12K SONIC 2 RECEIVED THE ATC TRANSMISSION 'COPIED'. THE RECEPTION WAS STRENGTH THREE. AT THIS POINT SONIC 2 WAS ACCELERATING THROUGH 40 KNOTS GROUNDSPEED IN FULL AFTERBURNER AND SONIC 1 WAS 65 KNOTS GROUNDSPEED WITH THROTTLES IN IDLE AND RAPIDLY DECELERATING DURING THE ABORT. SONIC 2 AIRCREW DID NOT RECALL RECEIVING THE 'COPIED' TRANSMISSION AND WERE NOT AWARE AT ANY STAGE DURING THEIR TAKE-OFF THAT SONIC 1 HAD ABORTED. DURING THE TAKE-OFF AT APPROXIMATELY 60 KNOTS GROUNDSPEED SONIC 2 PILOT SCANNED THE RUNWAY AHEAD TO LOOK FOR SONIC 1. SONIC 2 PILOT DID NOT SEE SONIC 1 AT THIS POINT AND RETURNED TO SCANNING THE

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ENGINE INSTRUMENTS FOR CORRECT INDICATIONS. SONIC 1 PILOT CONTINUED TO ALTERNATE SCAN BETWEEN THE RUNWAY AHEAD AND ENGINE INSTRUMENTS BUT DOES NOT AGAIN CONSCIOUSLY SCAN FOR SONIC 1 NOR INFORM THE INSTRUCTOR THAT HE CANNOT IDENTIFY THE AFTERBURNER OF SONIC 1 AHEAD. SONIC 2 NAVIGATOR DID SEE THE ORANGE FLAME FROM SONIC 1 THAT THE RIGHT ENGINE EMITTED ON STALL AND SURGE DUE TO BIRDSTRIKE BUT DISCOUNTED THE FLAME AS A MOMENTARY ENGINE 'HICCUP' AND RETURNED TO SCAN THE ENGINE INSTRUMENTS FOR CORRECT INDICATIONS. AT APPROXIMATELY 100 KNOTS GROUNDSPEED SONIC 2 NAVIGATOR AGAIN LOOKED AHEAD TO IDENTIFY SONIC 1 BUT DID NOT SEE THE TELL TALE AFTERBURNER AND ASSUMED THAT WAS DUE TO THE CHANGE IN FLAME SHAPE AS SONIC 1 ROTATED PRIOR TO LIFT OFF. SONIC 2 NAVIGATOR THEN REMAINED FOCUSSED ON THE ENGINE INSTRUMENTS FOR THE REMAINDER OF THE TAKE-OFF.
SONIC 2 BECAME AWARE THAT SONIC 1 HAD ABORTED ON RECEIPT OF SONIC 1 TRANSMISSION 'SONIC 1 SHUTTING DOWN' AT 2315:50. AT THIS POINT SONIC 2 HAD OVER FLOWN SONIC 1 AND WERE ON DEPARTURE UPWIND AT APPROX. 500 FEET AGL. SONIC 2 FLIGHT PATH WAS RE-FLOWN IN THE SIMULATOR AND IT WAS ASSESSED THAT SONIC 2 PASSED OVER SONIC 1 BETWEEN 50 AND 70 FEET ABOVE THE RUNWAY SURFACE.
6SQN
05: OPCON CURRICULUM AND STUDENT PILOT HISTORY SONIC 2
THE F-111 OPCON CURRICULUM INTRODUCES STUDENT PILOTS TO A 'SIMULATED NIGHT/IMC STREAM DEPARTURE' BY DAY ON AP11. DUE TO AIRCRAFT UNAVAILABILITY THE STUDENT PILOT OF SONIC 2 HAD FLOWN AP11 AS A SINGLETON AND THEREFORE HAD NOT ACHIEVED THIS TRAINING OBJECTIVE ON THAT SORTIE. THE STUDENT HAD BEEN EXPOSED TO A 30" DAY STREAM DEPARTURE ON ANOTHER SORTIE WHERE WEATHER HAD REQUIRED THE DEPARTURE TO BE MODIFIED.
THE STUDENT PILOT OF SONIC 2 HAD PREVIOUSLY FLOWN A ROLLING TAKE-OFF DURING THE DAY.
THE STUDENT PILOT OF SONIC 2 HAD NOT PREVIOUSLY SEEN A NIGHT TAKE-OFF IN STREAM AS A WINGMAN.
THE STUDENT PILOT OF SONIC 2 HAD RECEIVED THE DAY FORMATION MASS BRIEF THAT INCLUDES PROCEDURES FOR RADAR TRAIL DEPARTURE.
THE DAY FORMATION MASS BRIEF DOES NOT INCLUDE FORMATION ABORT CONSIDERATIONS SPECIFIC TO TRAIL OR STREAM DEPARTURES.
THERE IS NO SPECIFIC F-111 SIMULATOR TRAINING FOR NIGHT/IMC STREAM DEPARTURES AS THE F-111 SIMULATOR MODELS THE PERFORMANCE OF THE LEAD AIRCRAFT POORLY.
CRM ASPECTS OF BOLDFACE MANAGEMENT ARE BROADLY COVERED IN THE STUDENT AIR TRAINING GUIDE. SPECIFICALLY, THE FOLLOWING GUIDANCE IS GIVEN; 'THE PILOT DOES NOT REQUIRE CONFIRMATION OF THE CORRECT CONTROL/SWITCH/PUSHBUTTON BY THE NAVIGATOR PRIOR TO ACTIONING CHECKLIST ITEMS, BUT GOOD CRM PRACTICE WOULD MAKE A PAUSE TO ALLOW

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THE NAVIGATOR TO VERIFY THE CORRECT USE OF CRITICAL CONTROL BEFORE ACTIONING, AS APPROPRIATE. THE NAVIGATOR SHOULD ONLY TALK BY EXCEPTION I.E. SPEAK UP LOUDLY AND CLEARLY IF HE/SHE FEELS THE PILOT HAS MISTAKENLY GONE FOR THE INCORRECT CONTROL AND IN THE CASE OF ENGINE SHUTDOWN GUARD THE THROTTLE OF THE GOOD ENGINE.' NO FURTHER SPECIFIC CRM ADVICE IS GIVEN WRT ABORT PROCEDURES HOWEVER FURTHER EXAMPLES OUTLINING CRM ASPECTS ARE PROVIDED FOR ENGINE FIRE, BLEED DUCT, ENGINE OIL HOT, WHEEL WELL HOT AND FUSELAGE FIRE.

6SQN

06: F-111 SIMULATOR TRAINING

THERE IS NO FORMAL REQUIREMENT FOR OPERATIONAL AIRCREW TO COMPLETE AN ABORTED TAKE-OFF IN THE F-111 SIMULATOR AS PART OF THE NORMAL TRAINING CYCLE. IAW 82WG SI (OPS) AIRCREW MUST COMPLETE AN EMERGENCY SIMULATOR SESSION EACH 45 DAYS BUT THE MAKE UP OF THE SIMULATOR SESSION IS AT THE DISCRETION OF THE SIMULATOR INSTRUCTORS. THUS A CREW MAY GO FOR SIGNIFICANT PERIODS WITHOUT HAVING COMPLETED AN ABORT. IT HAS ALSO BEEN NOTED THAT A SIMILAR OCCURRENCE; THE AUXILIARY BRAKE HANDLE BEING PULLED BY MISTAKE INSTEAD OF THE HOOK HANDLE DURING AN ABORT, OCCURS IN THE F-111 SIMULATOR ON AVERAGE TWO TIMES EACH YEAR. A SIMILAR INCIDENT HAD OCCURRED IN THE F-111 SIMULATOR IN THE WEEK PRIOR TO THIS OCCURRENCE.

6SQN

07: HUMAN FACTORS

FATIGUE AND PRESS-ON-ITIS PROBABLY CONTRIBUTED TO THIS OCCURRENCE. THE AIRCREW FROM BOTH AIRCRAFT HAD BEEN AWAKE FOR APPROXIMATELY 16 HOURS AND HAD BEEN AT WORK FOR APPROXIMATELY 8 HOURS BEFORE THE ABORTED TAKE-OFF. THE AUTHORISED CREW DUTY DAY FOR F-111 OPERATIONS IS 12 HOURS. THE FORMATION DEPARTED IMMEDIATELY PRIOR TO THE PLANNED NO LATER THAN TIME OF 2315K DUE TO A NUMBER OF DELAYS DURING SONIC 1 LAUNCH SEQUENCE. THE ACTUAL DEPARTURE TIME IS VERY CLOSE TO THE NATURAL CIRCADIAN LOW, PARTICULARLY AS THE CREWS WERE COMING OFF A DAY FLYING PERIOD. THERE IS HOWEVER NOTHING ABNORMAL IN THE 72 HOUR HISTORIES OF THE CREW WHO HAD JUST ENJOYED FOUR DAYS OFF AS PART OF THE EASTER HOLIDAY.

THE F-111 OPCON WAS RUNNING BEHIND SCHEDULE AND THE STUDENTS HAD ALREADY PLANNED FORMATION SORTIES REDUCED TO SINGLETONS DUE TO AIRCRAFT AVAILABILITY. THE INSTRUCTIONAL STAFF THEREFORE ATTEMPTED TO MAXIMISE THE FORMATION TRAINING OPPORTUNITIES FOR THE STUDENTS. THE PILOT OF SONIC 1 WAS ATTEMPTING TO ACHIEVE THE FORMATION TRAINING BUT FOUND HIMSELF AGAINST A HARD TIME OF 2315K DURING A DIFFICULT AND FRUSTRATING LAUNCH. INDICATIONS OF THIS PRESS-ON OR CAN-DO ATTITUDE ARE EVIDENT IN THE NON-BRIEFED ROLLING TAKE-OFF (SONIC 1 ATTEMPTING TO EXPEDITE THE DEPARTURE) AND SONIC 1 PILOT CHANGE OF HABIT PATTERNS WRT NOT TAKING THE TIME TO RESET THE

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COCKPIT AND WANDER LIGHTS BEFORE TAKE-OFF.
IT IS POSSIBLE THAT THE PILOT OF SONIC 1, FATIGUED AND RUSHING NORMAL HABIT PATTERNS WOULD NOT HAVE BEEN MENTALLY PREPARED FOR THE SUBSEQUENT EMERGENCY ON TAKE-OFF.
B. FINDINGS:
01: SONIC 2 TAKE-OFF PHASE
AT NO TIME DURING THE TAKE-OFF WERE SONIC 2 AWARE THAT SONIC 1 HAD ABORTED. HOWEVER, A NUMBER OF CUES WERE AVAILABLE TO SONIC 2 THAT SONIC 1 HAD ABORTED. VISUALLY, THE INSTRUCTOR NAVIGATOR HAD SEEN WHAT WAS AN AN ABNORMAL ORANGE FLAME EMANATE FROM SONIC 1 AND BOTH THE STUDENT PILOT AND INSTRUCTOR NAVIGATOR HAD AT DIFFERENT TIMES DURING THE TAKE-OFF ROLL FAILED TO IDENTIFY THE TELL TALE AND SIGNIFICANT AFTERBURNER FLAME OF SONIC 1. SONIC 2 STUDENT PILOT HAD NOT PREVIOUSLY SEEN THE AFTERBURNER AT NIGHT AS WINGMAN AND HE DID NOT HAVE A PICTURE OF WHAT THEY SHOULD LOOK LIKE FROM A 30 SECOND STREAM DEPARTURE. AURALLY, THERE WAS LITTLE TO CUE THE CREW OF SONIC 2 TO THE ABORT EVEN THOUGH SONIC 1 TRANSMITTED ABORTING AND DECLARED AN ABBREVIATED MAYDAY. THE ONLY RECEPTION BY SONIC 2 WAS THE ACKNOWLEDGEMENT FROM ATC OF THE SONIC 1 MAYDAY OF 'COPIED'. HOWEVER, DUE TO RECEIVED STRENGTH, RELEVANCE AND COCKPIT WORKLOAD IN SONIC 2 AT THIS TIME THIS TRANSMISSION BY ATC WAS OF LITTLE RELEVANCE. THE KNOWN AND DOCUMENTED POOR PERFORMANCE OF THE F-111 RADIO SUITE, IN PARTICULAR THE VHF RADIO IN USE AT THE TIME EXPLAINS THE LACK OF RECEPTION BY SONIC 2 OF SONIC 1 TRANSMISSIONS. IT IS DIFFICULT TO ASSESS BUT IT IS POSSIBLE THAT HAD ATC TRANSMITTED THE CORRECT READBACK 'SONIC 1 AMBERLEY TOWER ROGER MAYDAY' IN RESPONSE TO SONIC 1'S MAYDAY, SONIC 2 SITUATIONAL AWARENESS MAY HAVE BEEN RE-FOCUSSED ON THE DEVELOPING SITUATION AHEAD.
ON THE NIGHT THE COMBINED AVAILABLE CUES, BOTH VISUAL AND AURAL DID NOT ALTER SONIC 2 PERCEPTION AND EXPECTATION THAT SONIC 1 WAS OPERATIONS NORMAL. CONTRIBUTING TO THIS ERROR OF EXPECTATION WAS THE CREW'S MISDIRECTED TASK FOCUS ON CHECKING THE ENGINE INSTRUMENTS IN LIEU OF CLEARING THE RUNWAY DURING THE STUDENT PILOT'S FIRST NIGHT ROLLING TAKE-OFF. ADDITIONALLY, THE LACK OF A SPECIFIC CIRRICULUM EVENT FOR NIGHT STREAM EMERGENCIES TOGETHER WITH THE LACK OF SUITABLE SIMULATION AND THE MISSED FORMATION TRAINING EVENTS ON PREVIOUS SORTIES DUE TO AIRCRAFT AVAILABILITY MAY HAVE NOT ADEQUATELY PREPARED THE STUDENT PILOT FOR THE CURRICULUM EVENT. FURTHER, BOTH THE STUDENT PILOT AND INSTRUCTOR NAVIGATOR, ALTHOUGH BOTH AWARE THAT THEY COULD NOT SEE SONIC 1 AFTERBURNER, DID NOT COMMUNICATE THIS ESSENTIAL FACT WITH EACH OTHER.
02: PRE-FLIGHT BRIEFING
TAKE-OFF STREAM INTERVAL WAS NOT FULLY UNDERSTOOD BY ALL AIRCREW IN THE FORMATION. NEITHER 82WG SI(OPS) OR F-111 TACPROCS PROVIDE AN

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SOP INTERVAL; RATHER A MINIMUM INTERVAL OF 25 SECONDS IS SPECIFIED.
03: F111 OPCON CURRICULUM AND STUDENT PILOT HISTORY SONIC 2
THE F-111G OPCON CURRICULUM DESIGN WRT GROUNDSCHOOL, SIMULATOR AND AIRBORNE DESIGN AND INSTRUCTIONAL FLOW IS SOUND. HOWEVER, THE CONTENT OF THE DAY FORMATION MASS BRIEF DOES NOT INCLUDE EMERGENCY CONSIDERATIONS FOR STREAM DEPARTURES, SUCH AS ABORT.
ADDITIONALLY, THE CRM ASPECTS OF ABORT SUCH AS CORRECT HANDLE CONFIRMATION AND R/T CONSIDERATIONS ARE NOT SPECIFIED IN THE STUDENT AIR TRAINING GUIDE. CONSEQUENTLY, THESE CRM ASPECTS ARE NOT STANDARDISED ACROSS THE WING.
04: RWY LIGHTING - VISUAL ILLUSION
THE NEW DISPLACED THRESHOLD LIGHTING ON THE DEPARTURE END OF RUNWAY 15 IS BRIGHTER THAN THE SURROUNDING RUNWAY EDGE LIGHTING AND SIGNIFICANTLY BRIGHTER THAN THE EXISTING RUNWAY END LIGHTS THEY REPLACE WHICH THE CREW HAD BECOME ACCUSTOMED TO USING. THE LIGHTS ARE ALSO SPACED FURTHER APART THAN THE ORIGINAL THRESHOLD LIGHTING. WHEN VIEWED FROM A POINT EQUIDISTANT FROM BOTH THRESHOLDS THE GREATER INTENSITY AND SPACING OF THE DEPARTURE END RUNWAY 15 THRESHOLD LIGHTING CREATES A VISUAL ILLUSION THAT THE DISPLACED THRESHOLD IS ABOUT 1,500 FEET AWAY WHERE THE THRESHOLD OF RUNWAY 15 IS 3,500 FEET AWAY. THIS VISUAL ILLUSION LEAD THE PILOT OF SONIC 1 TO BELIEVE THAT HE WAS MUCH CLOSER TO THE END OF RUNWAY 15 DURING THE ABORT THAN HE ACTUALLY WAS. ALSO, THE TEMPORARY ARRESTOR GEAR AT THE DEPARTURE END OF RUNWAY 15 HAD NO LIGHTING, SO THE PILOT LACKED THIS ADDITIONAL AND USEFUL CUE USED TO ASSESS DISTANCE TO THE CABLE AND DISTANCE TO THE END OF THE RUNWAY. ALSO, THE DISTANCE TO RUN MARKER BOARDS HAD NOT BEEN MODIFIED TO REFLECT THE DISTANCE TO THE DISPLACED THRESHOLD AND THEY WERE THEREFORE OF LITTLE USE ON THIS OCCASION. IN THE TIME COMPRESSION OF THE ABORT SEQUENCE, THE STUDENT NAVIGATOR OF SONIC 1 DID NOT CALL OUT ANY DISTANCE TO GO INFORMATION THAT MAY HAVE INCREASED THE PILOT'S AWARENESS REGARDING HOW MUCH RUNWAY DISTANCE REMAINED TO STOP THE AIRCRAFT. IF THE MARKER BOARDS WERE CORRECT AND NO MENTAL CALCULATION WAS REQUIRED TO WORK OUT THE CORRECT DISTANCE TO THE TEMPORARY THRESHOLD, THE NAVIGATOR MAY HAVE MADE A DISTANCE TO GO CALL TO THE PILOT. CONSEQUENTLY, THE PILOT PERCEIVED HE WAS ABOUT TO OVERRUN THE RUNWAY AND INSTINCTIVELY REACHED FOR THE HOOK HANDLE. HAVING NOT IDENTIFIED THE HOOK HANDLE THE PILOT INADVERTENTLY PULLED THE AUXILIARY BRAKE HANDLE.
05: SONIC 1 MIS-IDENTIFICATION OF HOOK HANDLE
THE PILOT OF SONIC 1 DID NOT POSITIVELY IDENTIFY THE HOOK HANDLE AND PULLED THE AUXILIARY BRAKE HANDLE BY MISTAKE. THE PLANNED ACTION TO PULL THE HOOK HANDLE IN THIS INSTANCE WAS AN INSTINCTIVE REFLEX ACTION. THIS WAS A RESULT OF THE PILOT OF SONIC 1 BELIEVING HE WAS

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ABOUT TO OVER RUN THE DEPARTURE END OF THE RUNWAY DUE TO THE RUNWAY 15 DEPARTURE END LIGHTING APPEARING TO BE MUCH CLOSER THAN IT ACTUALLY WAS. IT IS PROBABLE THAT THE PILOT, FACED WITH A PERCEIVED TIME CRITICAL SITUATION IN A HIGH STRESS ENVIRONMENT REVERTED TO THE WELL PRACTICED HABIT OF REACHING FOR THE AUXILIARY BRAKE HANDLE RATHER THAN THE HOOK HANDLE WHICH HE HAD ONLY USED SEVERAL TIMES IN HIS CAREER.
COCKPIT LIGHTING SET-UP MAY HAVE CONTRIBUTED TO THE PILOT MISIDENTIFYING THE HOOK HANDLE. VISUAL IDENTIFICATION OF THE HANDLE WOULD HAVE BEEN MORE DIFFICULT THAN USUAL AS THE PILOT HAD NOT REDUCED THE BRIGHTNESS OF HIS WANDER LIGHT WHICH IS LOCATED IN FRONT OF THE HOOK HANDLE AND THE AUXILIARY BRAKE HANDLE AND SHINES DOWN ONTO THE PILOT'S LEFT KNEEBOARD. THIS WANDER LIGHT, IF LEFT ON BRIGHT FOR TAKE-OFF CREATES A DARK HOLE BEHIND IT AND MAKES SWITCH/HANDLE IDENTIFICATION MORE DIFFICULT. FOR THIS REASON SOME F-111 CREWS TURN THIS LIGHT OFF FOR DEPARTURE. THE PILOT DID NOT DO SO IN THIS CASE DUE TO PERCEIVED TIME PRESSURE TO DEPART BEFORE THE BRIEFED NO LATER THAN TIME.
06: APPLICABLE AIRFIELD NOTAMS
ON THE NIGHT OF THE INCIDENT THE DISTANCE TO RUN MARKER BOARDS WERE NOTAMED AS INCORRECT FOR RWY 15. THE TEMPORARY RWY 15 DEPARTURE END ARRESTOR CABLE WAS NOTAMED FOR HAVING NO LIGHTING. RUNWAY 15/33 WAS NOTAMED FOR REDUCED OPERATING LENGTH OF 7000 FEET.
07: SONIC 1 ABORT DECISION
THE CAPTAIN OF SONIC 1 ABORTED THE TAKE-OFF IAW HIS EMERGENCY BRIEF AND HIS DECISION TO ABORT IS ASSESSED AS BEST PRACTICE FOR COMPLETE THRUST LOSS FROM AN ENGINE IN THE TAKE-OFF HIGH SPEED PHASE IN THE PREVAILING CIRCUMSTANCES. LIFT OFF SPEED AND CALCULATED REFUSAL SPEED FOR DRY NO CABLE CONDITIONS WAS 160KIAS. REFUSAL SPEED FOR DRY WITH CABLE CONDITIONS WAS GREATER THAN LIFT-OFF.
08: HUMAN FACTORS
IT IS POSSIBLE THAT FATIGUE AND PRESS-ON-ITS CONTRIBUTED TO THIS OCCURRENCE.
C. CONTRIBUTING FACTORS:
UNSAFE ACTS OR CONDITIONS/ERRORS/PERCEPTUAL ERRORS (DUE TO)/ILLUSION/2
UNSAFE ACTS OR CONDITIONS/ERRORS/SKILL-BASED ERRORS/INADVERTENT USE OF CONTROLS/1
UNSAFE ACTS OR CONDITIONS/ERRORS/DECISION ERRORS/WRONG RESPONSE TO EMERGENCY/3
PRECONDITIONS FOR UNSAFE ACTS/SUBSTANDARD CONDITIONS/WORKSPACE/ ERGONOMICS/2
PRECONDITIONS FOR UNSAFE ACTS/SUBSTANDARD PRACTICES/TRAINING/NOT TRAINED FOR TASK/1

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PRECONDITIONS FOR UNSAFE ACTS/SUBSTANDARD PRACTICES/CREW RESOURCE MANAGEMENT/SITUATIONAL AWARENESS/3
PRECONDITIONS FOR UNSAFE ACTS/SUBSTANDARD CONDITIONS/EQUIPMENT/ UNRELIABLE/FAULTY/2
ORGANISATIONAL INFLUENCES/ORGANISATIONAL PROCESSES/PROCEDURES/ DOCUMENTATION/2
ORGANISATIONAL INFLUENCES/ORGANISATIONAL PROCESSES/OVERSIGHT/RISK MANAGEMENT/3
D. DEFENCES:
DETECTION - HOW WAS THE PROBLEM REVEALED?/AIRCREW
WHAT, IF ANYTHING, LIMITED THE CONSEQUENCES OF THE OCCURRENCE?/EQUIPMENT/EMERGENCY SERVICES

10. AVIATION RISK MANAGEMENT:
RM STRATEGIES: AMBERLEY BASO COULD NOT IDENTIFY AN AVIATION RISK MANAGEMENT PLAN SPECIFICALLY TAILORED FOR THE ONGOING RUNWAY WORKS. THERE WAS NO SPECIFIC 6SQN AVIATION RISK MANAGEMENT PLAN FOR THE ONGOING RUNWAY WORKS.
RISK MANAGEMENT EFFECTIVE: N/A
RM NARRATIVE: DELIBERATE AVRM, RESULTING IN A DISCRETE RMP AS DEFINED BY 82WG SI(OPS) 6-4 PARAGRAPH 14 MAY HAVE IDENTIFIED THE HAZARDS RELATING TO A HIGH SPEED ABORT AT NIGHT ON A RELATIVELY SHORT RUNWAY WITH MODIFIED AIRFIELD LIGHTING. SUITABLE CONTROLS SUCH AS AIRCREW SIMULATOR TRAINING AND AIRFIELD LIGHTING MODIFICATIONS MAY HAVE BEEN CONSIDERED.

11. ACTIONS AND RECOMMENDATIONS:
A. ACTIONS:
02: F-111 OPCON CURRICULUM DAY FORMATION MASS BRIEF
UNIT ACTION: THE DAY FORMATION MASS BRIEF IS TO BE EXPANDED TO INCLUDE EMERGENCY PROCEDURES SPECIFIC TO STREAM DEPARTURES IN FORMATION. THE IMPORTANCE OF MAINTAINING SITUATIONAL AWARENESS OF FORMATION AIRCRAFT AHEAD IN THE DEPARTURE PHASE AND APPROPRIATE DECISION POINTS FOR ABORT SHOULD ALSO BE INCLUDED.
RESPONSE:
03: STUDENT AIR TRAINING GUIDE - CRM ASPECTS
UNIT ACTION: THE STUDENT AIR TRAINING GUIDE (SATG), CHAPTER 6, ANNEX A GUIDANCE ON CRM ISSUES IS TO BE AMENDED TO READ; 'GOOD CRM PRACTICE REQUIRES THE PILOT TO RECEIVE CONFIRMATION OF THE CORRECT CONTROL/SWITCH/PUSHBUTTON BY THE NAVIGATOR PRIOR TO ACTIONING CHECKLIST ITEMS. THE NAVIGATOR MUST BE INCLUDED IN ALL CRITICAL DECISIONS AND MUST SPEAK UP LOUDLY AND CLEARLY IF HE/SHE FEELS THE PILOT HAS MISTAKENLY GONE FOR THE INCORRECT CONTROL. IN THE CASE OF ENGINE SHUTDOWN THE NAVIGATOR MUST GUARD THE THROTTLE OF THE GOOD

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ENGINE.'
FURTHER, ANNEX A SHOULD BE EXPANDED TO GIVE GUIDANCE ON SOUND CRM PRINCIPLES FOR ALL F-111 BOLDFACE EVENTS.
RESPONSE:
05: AAP 7214.003-14 FLYING INSTRUCTORS' MANUAL F-111
UNIT ACTION: THE FLYING INSTRUCTORS' MANUAL F-111, SECTION 2, CHAPTER 9 PARAGRAPH 14, RADAR TRAIL DEPARTURE IS TO BE AMENDED TO INCLUDE GUIDANCE AS TO THE CORRECT CREW TASK PRIORITISATION, TECHNIQUE, FORMATION DISPOSITION AWARENESS AND EMERGENCY HANDLING TECHNIQUES DURING THE TAKE-OFF AND DEPARTURE.
ADDITIONALLY, THE MANUAL IS TO BE AMENDED TO INCLUDE REFERENCE TO THE IMPORTANCE OF CORRECT COCKPIT LIGHTING LEVELS AND THE IMPACT OF BRIGHT WANDER LIGHTS ON SWITCH/HANDLE IDENTIFICATION.
RESPONSE: THERE IS ENOUGHT INFORMATION WITHIN THE SATG AND OPS BRIEF TO COVER THIS. NFA
06: SATG GUIDANCE FOR EMERGENCY BRIEFS
UNIT ACTION: THE SATG SECTION PERTAINING TO EMERGENCY BRIEFS SHOULD BE EXPANDED TO DISCUSS FORMATION CONSIDERATIONS, INCLUDING AN EXAMPLE OF AN EMERGENCY BRIEF SUITABLE FOR A WINGMAN FLYING A STREAM DEPARTURE.
RESPONSE:
07: R/T PROCEDURES FOR ABORT
UNIT ACTION: THE SATG IS TO BE AMENDED TO INCLUDE THE ESSENCE OF THE FOLLOWING GUIDANCE FOR R/T DURING AN ABORTED TAKE-OFF; 'ONCE THE AIRCRAFT IS UNDER CONTROL DURING THE ABORT AND A DECISION HAS BEEN MADE REGARDING THE DEPLOYMENT OF THE HOOK THE PILOT SHOULD ADVISE ATC OF THE ABORT. IF IN FORMATION THE NAVIGATOR SHOULD REPEAT THE ABORT CALL ON THE FORMATION COMMON FREQUENCY IN USE.'
RESPONSE:
08: F-111 SIMULATOR TRAINING
UNIT ACTION: EXECUTIVE OFFICER 6 SQUADRON IS TO RECOMMEND A CHANGE TO 82WG SI (OPS) TO ENSURE THAT AN ABORTED TAKE-OFF IS COMPLETED BY EACH CREW AND DEBRIEFED BY THE F111 SIMULATOR INSTRUCTOR AS PART OF THE 45 DAY SIMULATOR TRAINING CYCLE. THE TRAINING IS TO BE PROVIDED SO THAT THE CREW ARE NOT AWARE OF WHEN THE ABORT WILL BE CONDUCTED SO THEY MAY NOT BE PRIMED FOR THE EMERGENCY AND THEREBY REDUCE THE POTENTIAL TRAINING VALUE.
RESPONSE:
09: EMERGENCY BRIEF CONSIDERATIONS
UNIT ACTION: THE SATG IS TO BE AMENDED TO INCLUDE GUIDANCE FOR THE PILOT TO VISUALLY IDENTIFY THE HOOK HANDLE WHEN THE ABORT PROCEDURES ARE OUTLINED DURING THE TAKE-OFF/EMERGENCY BRIEF PORTION OF THE BEFORE TAKE-OFF VAS.
RESPONSE:

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10: ABORT BOLD FACE
UNIT ACTION: EXECUTIVE OFFICER 6 SQUADRON IS TO RECOMMEND A CHANGE TO THE SECOND STEP OF THE BOLDFACE FOR THE ABORT CHECKLIST INCLUDED IN AAP 7214.003-1 AND AAP 7214.014-1 AND ASSOCIATED CHECKLISTS TO READ: '2. HOOK HANDLE- IDENTIFY AND PULL (IF REQUIRED).'
RESPONSE: RECOMMEND THAT THIS WAS NOT REQUIRED OTHERWISE ALL BOLDFACE SHOULD REFLECT THE SAME. BASIC AVIATION PRINCIPLES APPLY IDENTIFY CONFIRM SELECT.
11: FLIGHT MANUAL CHANGES
UNIT ACTION: EXECUTIVE OFFICER 6 SQUADRON IS TO RECOMMEND AN AMENDMENT TO EXPAND THE CAUTION ON PAGE 4-9 OF AAP7214.003-1 AND PAGE 4-8 OF AAP 7214.014-1 TO CAUTION AIRCREW OF THE CLOSE PROXIMITY AND SIMILAR OPERATIONAL FUNCTION OF THE AUXILIARY BRAKE HANDLE AND THE HOOK HANDLE.
RESPONSE: PIRR PRESENTED TO WASO AT AHARB
12: HUMAN FACTORS
UNIT ACTION: THE SATG, FLYING INSTRUCTOR'S MANUAL AND TAKE-OFF PROCEDURES AND EMERGENCIES MASS BRIEF IS TO BE AMENDED TO INCLUDE GUIDANCE ON THE MOVEMENT OF THE PILOT'S LEFT HAND WHEN REACHING FOR THE HOOK HANDLE OR THE AUXILIARY BRAKE HANDLE. WHEN REACHING FOR THE HOOK HANDLE THE PILOTS LEFT HAND IS TO FIRST LOCATE THE CANOPY SILL THEN MOVE FORWARD IN AN OVERHAND GRIP TO IDENTIFY THE HOOK HANDLE PRIOR TO PULLING IT. IN CONTRAST THE PILOT'S LEFT HAND IS TO GO DIRECTLY FORWARD IN AN UNDERHAND GRIP PRIOR TO PULLING THE AUXILIARY BRAKE HANDLE.
RESPONSE:
13: MISSION BRIEFING
UNIT ACTION: EXECUTIVE OFFICER 6 SQUADRON IS TO BRIEF ALL UNIT AIRCREW ON THE HAZARDS OF STATING 'SOP' IN FORMATION BRIEFS AS 'SOP' WILL MEAN DIFFERENT THINGS TO DIFFERENT PEOPLE DEPENDING ON A WIDE VARIETY OF CIRCUMSTANCE. EXPECTATION IS FOR CREWS TO THOROUGHLY BRIEF ALL FACETS OF THE MISSION SO THERE IS NO MISUNDERSTANDING.
RESPONSE:
B. RECOMMENDATIONS:
01: F-111 SIMULATOR
RECOMMENDATION: RECOMMEND 82WG INVESTIGATE THE ENGINEERING SOLUTION TO ENHANCE THE F-111 SIMULATOR PERFORMANCE MODELING TO PROVIDE THE CAPABILITY TO SIMULATE STREAM FORMATION PROCEDURES (INCLUDING ABORTS) AND VISUALS FROM BRAKES RELEASE.
RESPONSE:
REASON FOR REJECTION: STREAM DEPARTURES CAN BE SIMULATED.
02: RADIO LIMITATIONS SPECIFIC TO FORMATION DISPOSITION
RECOMMENDATION: RECOMMEND 82WG CONDUCT A DETAILED RISK ASSESSMENT ON THE SAFETY IMPACT OF THE POOR PERFORMANCE OF THE F-111 RADIO SUITE

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WHILST IN TRAIL FORMATION DISPOSITION WITH A VIEW TO FORMALLY IDENTIFYING AND CONTROLLING THE RISKS ASSOCIATED WITH OPERATING IN FORMATION WITH KNOWN RADIO PERFORMANCE PROBLEMS.
RESPONSE: THIS RECOMMENDATION WAS MADE PRIOR TO RESOLUTION OF THE F-111 RADIO ISSUES. BOEING AUSTRALIA HAVE COMPLETED EXTENSIVE REMEDIAL ACTION ON THE F-111 RADIOS WITH SUCCESSFUL OPERATIONAL TESTING COMPLETED IN JUN 07. THE IMPROVEMENTS TO RADIO PERFORMANCE NEGATE THE REQUIREMENT TO CONDUCT THE RECOMMENDED RISK ASSESSMENT.
03: ATC PROCEDURES
RECOMMENDATION: RECOMMEND SATCO BRIEF ALL AMBERLEY ATC ON THE IMPORTANCE OF CORRECT READ BACK REQUIREMENTS FOR DECLARED AIRCRAFT EMERGENCIES.
RESPONSE: ATC PROCEDURES; ALL ATCOS BRIEFED ON CORRECT READBACK REQUIREMENTS FOR DECLARED AIRCRAFT EMERGENCIES.
04: AIRFIELD LIGHTING
RECOMMENDATION: RECOMMEND 44WG RAISE A NOTAM HIGHLIGHTING THE INCONSISTENT RUNWAY END LIGHTING INTENSITY AND LIGHTING SPACING BETWEEN THE EXISTING AND DISPLACED THRESHOLD.
RESPONSE: AIRFIELD LIGHTING; NOTAM RAISED.
05: AIRFIELD LIGHTING
RECOMMENDATION: RECOMMEND SATCO AMBERLEY PLACE A WORKS REQUEST TO INSTALL TEMPORARY LIGHTING ON THE TEMPORARY ARRESTOR CABLE INSTALLED ON THE DEPARTURE END OF RUNWAY 15.
RESPONSE: AIRFIELD LIGHTING; TEMPORARY CABLE SITE LIT BY PORTABLE LIGHTS PLACED ON THE CABLE MOTORS.
06: RUNWAY FACILITIES
RECOMMENDATION: RECOMMEND SATCO AMBERLEY PLACE A WORKS REQUEST TO HAVE THE EXISTING DISTANCE TO RUN MARKER BOARDS REPAINTED TO ACCURATELY REFLECT THE RUNWAY REMAINING TO THE DISPLACED THRESHOLD.
RESPONSE: RUNWAY FACILITIES; DTRMS WERE RENUMBERED FOR REMAINDER OF THE REDEVELOPMENT WORKS.
07: ERGONOMICS - AUXILARY BRAKE HANDLE
RECOMMENDATION: THE AUXILIARY BRAKE HANDLE COMPRISES A THREADED SHAFT WITH A FEMALE TYPE HANDLE WHICH THREADS ONTO THE SHAFT. RECOMMEND 82WG INVESTIGATE THE ENGINEERING SOLUTION TO REPLACE THE EXISTING HANDLE WITH A DIFFERENT SHAPE HANDLE. RECOMMEND A CHANGE TO A SPHERICAL TYPE FEMALE HANDLE BE INVESTIGATED. CONSIDERATION COULD ALSO BE GIVEN TO ORIENTATING THE EXISTING HANDLE TO A NON ADJUSTABLE POSITION DIFFERENT TO THE ORIENTATION OF THE HOOK HANDLE, THEREBY REQUIRING A DIFFERENT HAND GRIP TO PULL.
RESPONSE:
08: CREW DUTY LIMITS
RECOMMENDATION: AS FATIGUE COMMENCES TO BUILD FROM THE MOMENT A PERSON FIRST AWAKES AND NOT FROM THE START OF DUTY RECOMMEND 82WG

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EXPAND THE CURRENT INSTRUCTION FOUND AT 82WG SI (OPS) 6-10 F-111 AIRCREW DUTY LIMITS, TO INCLUDE GUIDANCE ON THE EFFECTS OF FATIGUE AFTER BEING AWAKE FOR SIGNIFICANT PERIODS BEFORE COMMENCING DUTY.
RESPONSE:
REASON FOR REJECTION: CONCLUSION FROM OC : CURRENT SI'S ON CREW FATIGUE ARE SUFFICIENT.
09: RAISING ASORS FOR F-111 SIMULATOR SIGNIFICANT HUMAN FACTOR INCIDENTS
RECOMMENDATION: THAT 82 WG DISCUSS AT THE NEXT WASCM THE FEASIBILITY OF ESTABLISHING A PRACTICE WHEREBY AIRCREW WILL RAISE ASORS FOR F-111 SIMULATOR SORTIES WHERE THERE WAS A SIGNIFICANT HUMAN FACTOR INCIDENT. IN THIS WAY WE CAN LEARN FREE LESSONS IN THE SIMULATOR AND AVOID RE-LEARNING THEM IN THE AIRCRAFT.
RESPONSE: RECOMMENDATION ADDED AS AGENDA ITEM FOR SEP 07 WASCM.
10: RMP FOR RUNWAY WORKS AT AMBERLEY
RECOMMENDATION: THAT 82 WG DRAFT A DISCRETE RMP TO DEAL WITH THE ONGOING RUNWAY WORKS AT AMBERLEY. THIS RMP SHOULD DEAL WITH OPERATING FROM THE SHORTENED RUNWAY ON RUNWAY 15/33 AS WELL AS OPERATIONS FROM RUNWAY 04/22.
RESPONSE: RMP ON SHORT RWY OPS IS COMPLETED.

12. AIRCRAFT DAMAGE OR COMPONENT CHANGES:

13. RELATED CORRESPONDENCE:

14. SUPERVISOR REVIEW:
A HIGH SPEED ABORT AT NIGHT IN ANY AIRCRAFT TYPE IS A SERIOUS OCCURRENCE. IN THIS CASE THE RIGHT ENGINE SURGE OCCURRING AT ROTATE SPEED MADE THE SUBSEQUENT EVENTS MORE TIME CRITICAL AS A RESULT OF HIGHER AIRCRAFT GROUND SPEED AS WELL AS THE REDUCED AVAILABLE STOPPING DISTANCE. IN ANY HIGH SPEED ABORT THE CRITICAL ACTIONS INCLUDED AS PART OF THE ABORT CHECKLIST NEED TO BE CONDUCTED DELIBERATELY BY THE CREW TO REDUCE THE RISK OF RUNWAY DEPARTURE, OVERRUN OR INCORRECT SERVICE SELECTION.

OPERATIONAL CONVERSION PROVIDES TRAINING AND EXPOSURE TO THE BROADEST RANGE OF OPERATIONS AND EMERGENCIES WITHIN THE TIME AND RESOURCE CONSTRAINTS OF THE COURSE. AS A DIRECT RESULT OF THIS, PROFICIENCY AT A SINGLE EVENT TAKES TIME AND EXPERIENCE TO ACHIEVE. INSTRUCTIONAL STAFF ARE USED TO SUPERVISE AND MITIGATE THE RISKS ASSOCIATED WITH UNDERTAKING EVENTS FOR THE FIRST TIME, AND IN THIS INSTANCE THERE ARE SOME VALUABLE LESSONS TO BE LEARNED.

THE IMPORTANCE OF CORRECT AND TIMELY COMMUNICATION AND THE

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IMPORTANCE OF BEING ASSERTIVE WHEN AN ABNORMAL SITUATION IS RECOGNISED ARE TWO CLEAR CRM LEARNING OUTCOMES FROM THIS INCIDENT. ALL CREWS ARE ENCOURAGED TO BE MORE ASSERTIVE ABOUT ABNORMALITIES OR DEVIATIONS FROM THE PLAN DURING TIME CRITICAL SITUATIONS: BY SHARING INFORMATION THERE IS A GREATER CHANCE OF RECOGNISING AND PREVENTING A DEVELOPING SITUATION FROM HAVING AN ADVERSE OUTCOME.

15. CO/OC REVIEW:
THIS 'SERIOUS INCIDENT' HAD THE POTENTIAL TO DEVELOP INTO AN 'AIRCRAFT ACCIDENT' BUT FOR THE CLEAR DECISION MAKING AND ACTIONS OF ALL INVOLVED AS THE SITUATION DEVELOPED ON THE INCIDENT EVENING. THIS INCIDENT OCCURED AT THE END OF A DUTY DAY FOR MANY INVOLVED AND THE RESPONSE WAS BOTH TIMELY AND WELL RECEIVED. IN PARTICULAR, THE DILIGENCE OF THE 382ECSS FIRE SECTION PERSONNEL WAS OUTSTANDING. A REVIEW OF THE BASE RESPONSE AND ATC ISSUES WAS OUTSIDE THE SCOPE OF THIS REPORT AND HAS BEEN CONDUCTED SEPERATELY.

THE INVESTIGATION TEAM, EXTERNAL TO 6SQN AND INVOLVING DDAAFS STAFF, HAS THOROUGHLY EXAMINED THE SEQUENCE OF EVENTS AND CIRCUMSTANCES SURROUNDING THE INCIDENT, IDENTIFIED THE ERRORS MADE WITH A FOCUS ON HUMAN FACTORS. THE SUBSEQUENT ACTIONS AND RECOMMENDATIONS WILL NOW BE ADDRESSED TO MITIGATE IDENTIFIED HAZARDS AND MINIMISE THE PROBABILITY OF THIS TYPE OF INCIDENT OCCURING AGAIN.

16. NO SASOR

DISTRIBUTION
ACTION: [82WG] REGISTRY
DIST: [82WG] REGISTRY
[1SQN] REGISTRY
[DS-AMB] REGISTRY
[SRSPO] REGISTRY (4)

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