AEROPORTI,
LA GESTIONE
IMPATTO VOLATILI

by com.te G.MANSUTTI

21 gennaio 2006

WARNING - DANGER

COSTI NEGLI USA

- WILDLIFE STRIKES COST AVIATION IN AMERICA $ 380 MILLION A YEAR - Jane Garvey, FAA
- “BIRD STRIKE ARE ONE OF OUR TOP THREE ISSUES - James Hall, Chairman, NTSB
- THERE HAS NEVER BEEN A GREATER POTENTIAL FOR CATASTHROFE THAN IN THE CURRENT CONFLICT BETWEEN WILDLIFE & AVIAYION- Mike Dunn, Ass’t Secretary of Agriculture

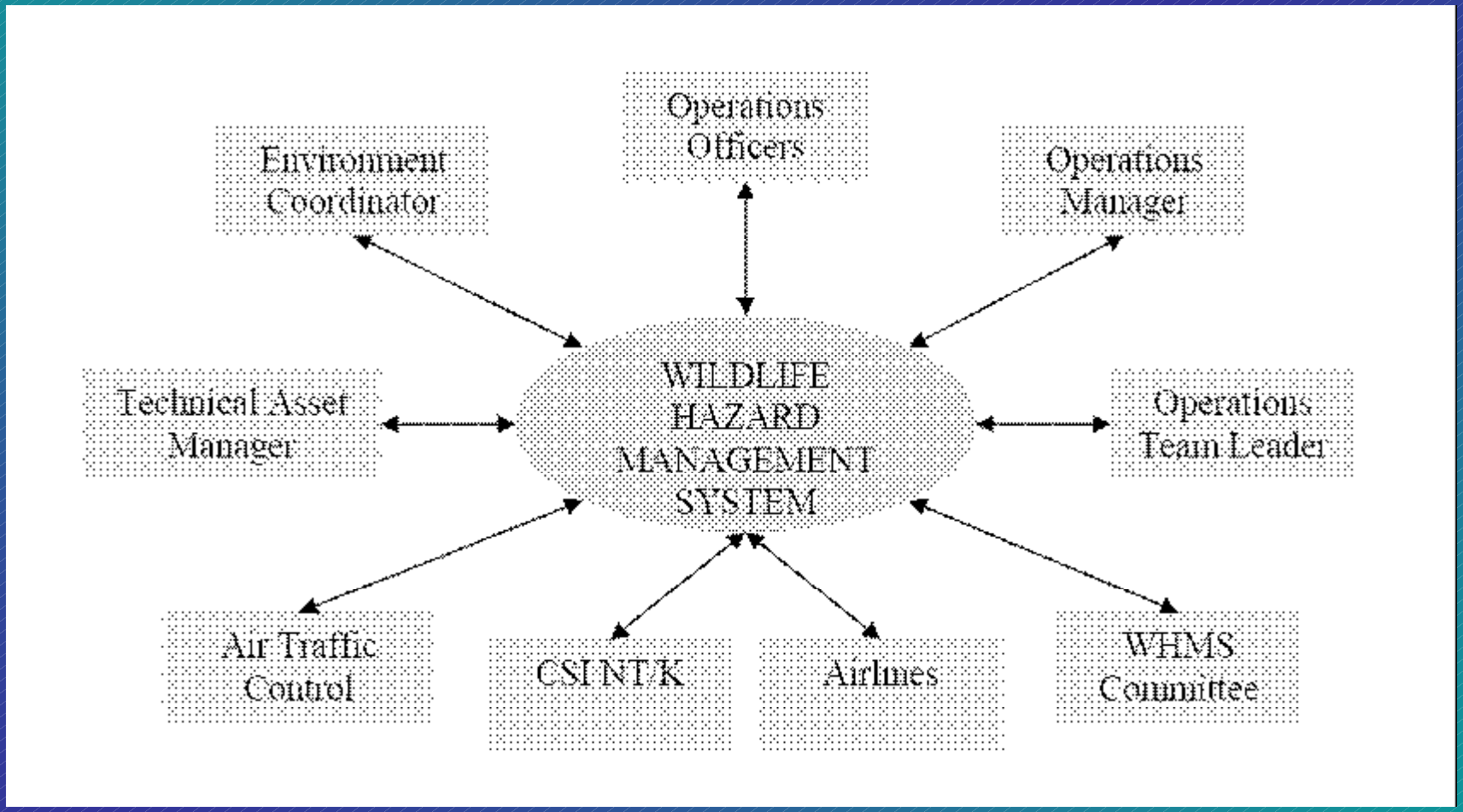
RISCHI - PERICOLI

- DIRETTAMENTE PER GLI AEROMOBILI
- DIRETTAMENTE SULLE STRUMENTAZIONI
- DIRETTAMENTE SULLE STRUTTURE
- INDIRETTAMENTE INCREMENTA IL CONTESTO DEL RISCHIO DIRETTO

TRE FATTORI NELLA GESTIONE IMPATTO VOLATILI

- ANALISI DEI “WILDLIFE HAZARDS”
- RIMEDI E SOLUZIONE IMMEDIATA DEGLI “HAZARDS”
- PIANIFICAZIONE E PREVENZIONE DEGLI EVENTI WILDLIFE HAZARDS

PIANIFICAZIONE MANAGERIALE



PIANIFICAZIONE MANAGERIALE

1 Wildlife Hazard Management System Induction Procedure

2 Wildlife Count Procedure

3 Database Entry Procedure

4 Risk Assessment Procedure

5 Issuing a NOTAM Procedure

6 Wildlife Strike Procedure

7 Handling of Wildlife Carcasses Procedure

8 Harassment & Dispersal Procedure

PIANIFICAZIONE MANAGERIALE

1: Qualitative Risk Matrix

2: Risk Action Plan

3: Ground Vertebrate Count Form

4: Weekly Bird Count Form

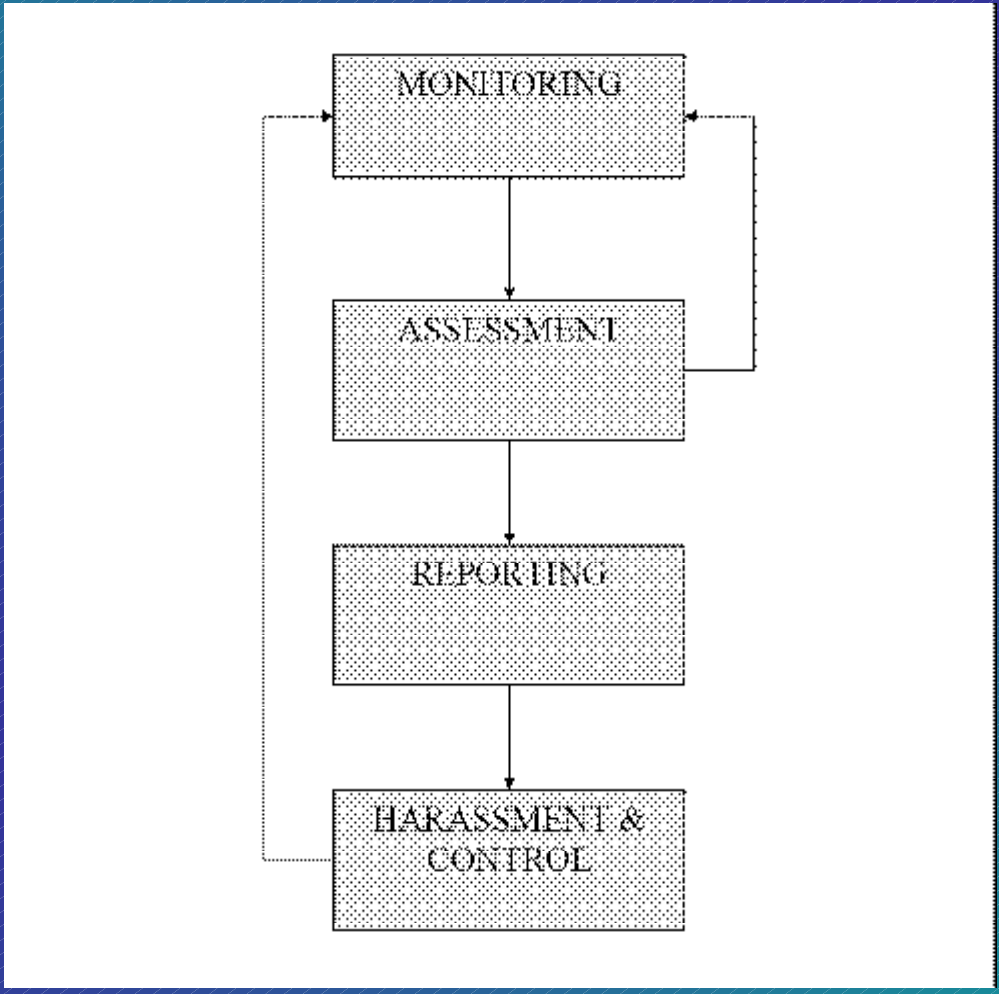
5: Daily Bird Count Form

6: Wildlife Harassment Form

7: NTAPL Wildlife Strike Form

8: ATSB Form

WILDLIFE HAZARD MANAGEMENT SYSTEM



RIMEDI E SOLUZIONI CONTINGENTI

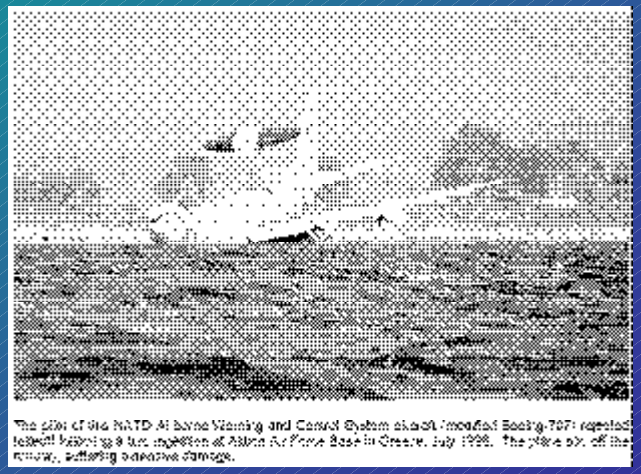
L’IMPATTO VOLATILI
POTREBBE CAUSARE EFFETTI DISASTROSI

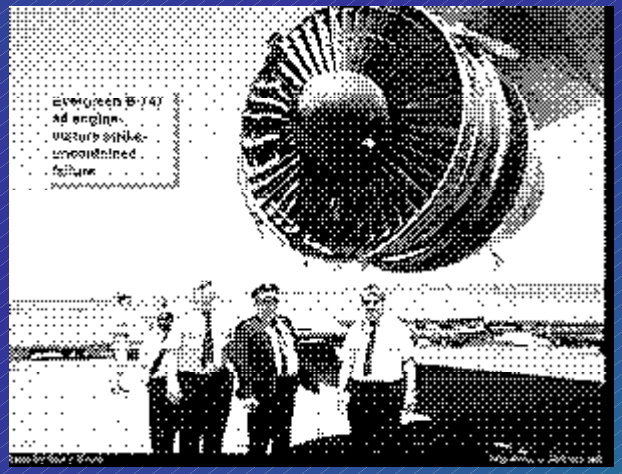

L’IMPATTO VOLATILI HA
CAUSATO GRAVI
INCIDENTI AEREI

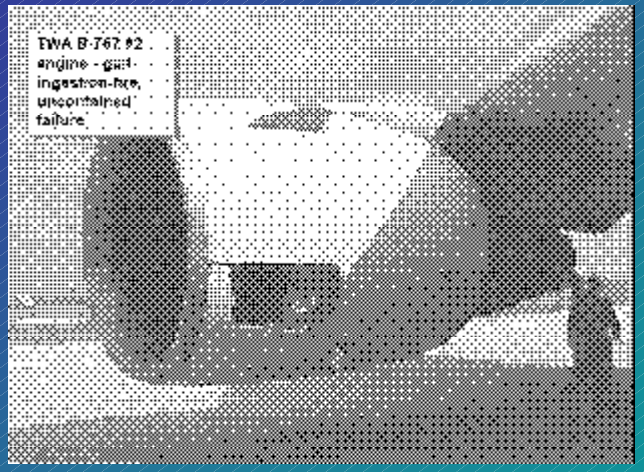

LA VICINANZA DELLE DISCARICHE,
MARINE, LAGHETTI E AREE NATURALISTICHE
SONO UN PERICOLO POTENZIALE


L’INGESTIONE DI VOLATILI
NEI PROPULSORI
RAPPRESENTA IL RISCHIO
PIU FREQUENTE

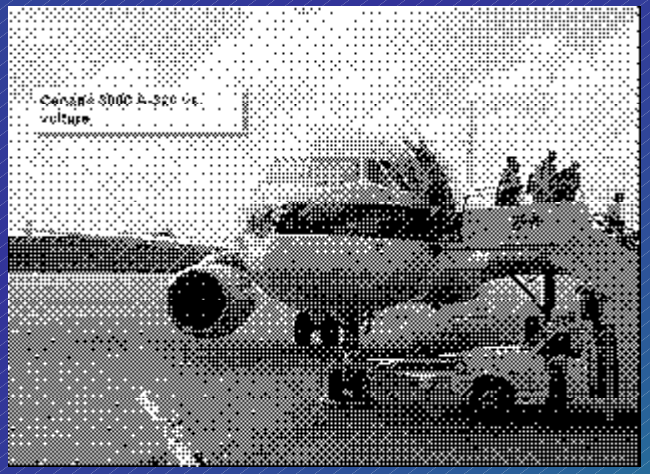
INCIDENTI



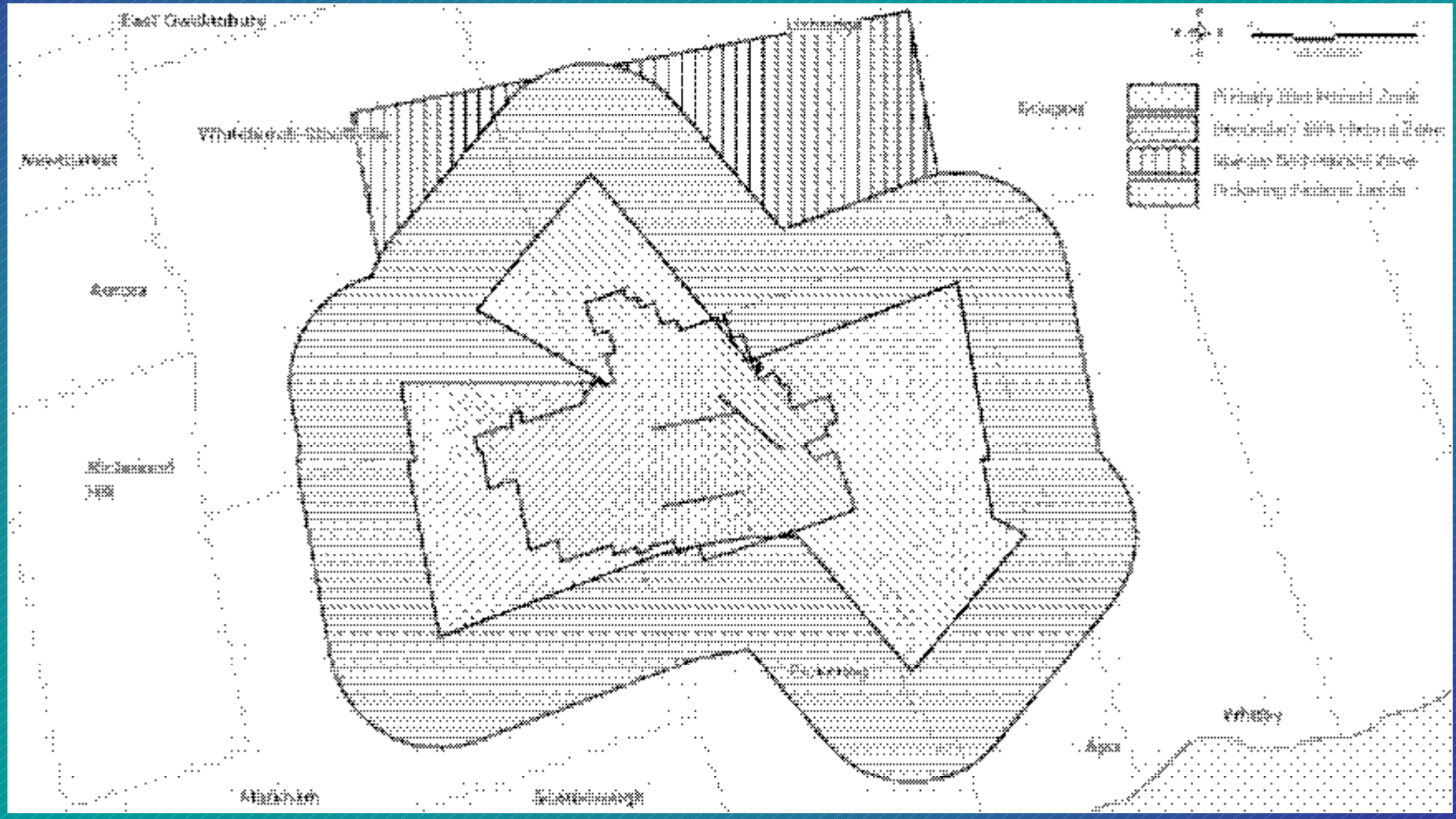

Evergreen B-747
All engine
vulture strike
uncontained
failure


TWA B-767-92
engine - gull
ingestion-fire,
uncontained
failure

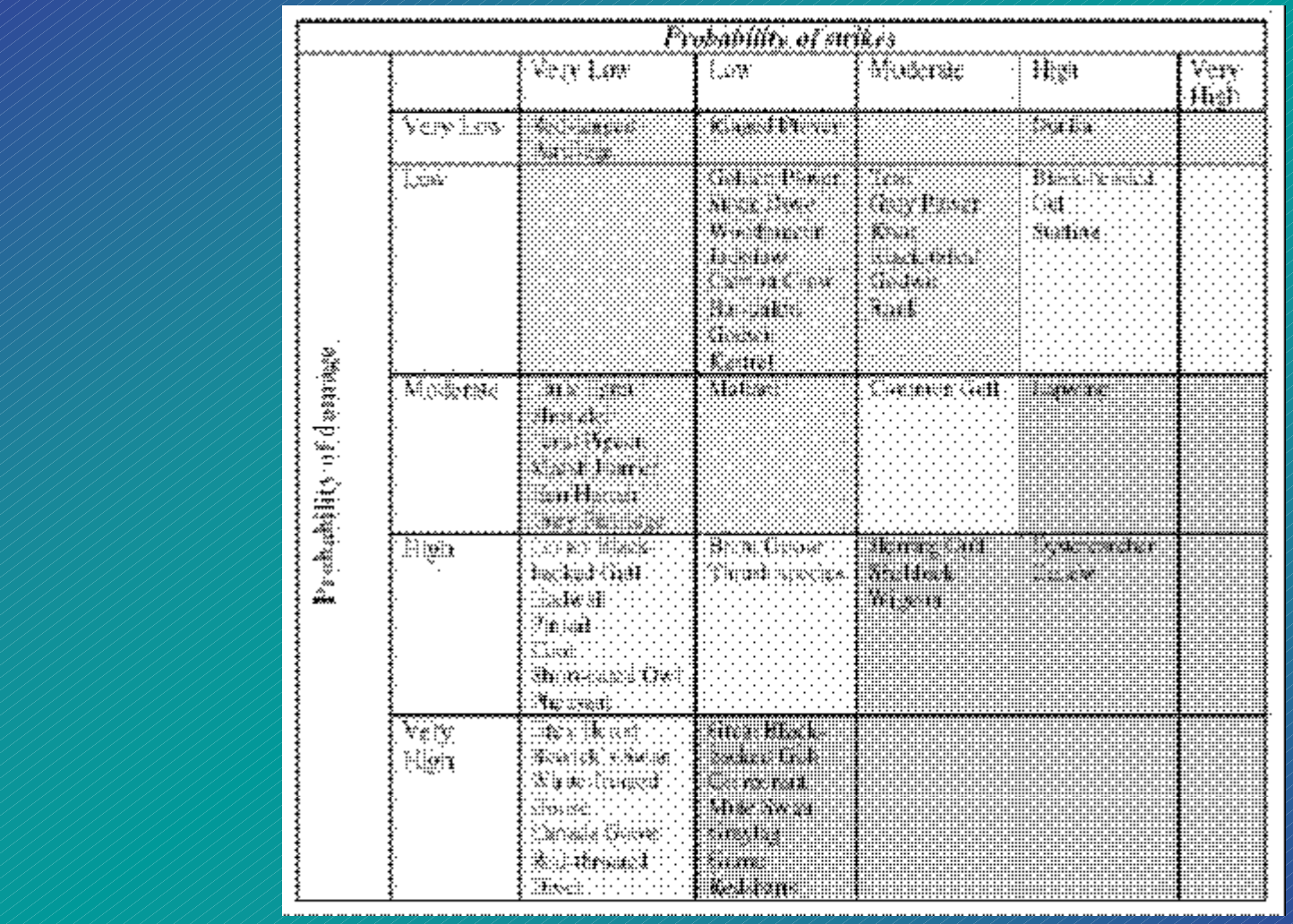
INCIDENTI E BONIFICA



UBICAZIONE PISTE E ZONE DEL RISCHIO IMPATTO



LIVELLI DEL RISCHIO IMPATTO VOLATILI



CASISTICA

Height Above GroundLevel (AGL) (ft)	*# of Strikes*
0 – 100	7801
101– 200	984
201 – 500	1348
501 – 1000	922
1001 – 2500	1194
Over 2501	1195
Unknown	124

Indicated Air Speed Knots (IAS - KT)	*# of Strikes*
0 – 80	719
81 – 100	813
101 – 150	7319
151 – 200	2900
201 – 250	588
Over 250	430
Unknown	120

Light Condition	*# of Strikes*
Dawn	451
Day	10 682
Dusk	786
Night	3167

Effect On Flight	*# of Strikes*
None	12 078
Aborted take-off	255
Precautionary landing	442
Engine(s) shutdown	73
Forced landing	22
Fire	3
Penetration of windshield	7
Penetration of airframe	1
Vision obscured	24

RISK ASSESSMENT LEVELS

Risk Assessment Levels		
30-40	Severe	Generate NOTAM and close runway until such a time as the risk level decreases
20-29	Moderate	Generate NOTAM (ATC and OM notified) and manage by Routine procedures – initiate harassment/control methods
8-19	Low	Continue monitoring (record bird counts)
N/A	Alert	Continue monitoring as an influx of wildlife onto the airfield is likely

DEFINIZIONE SEVERITA’

% of strikes causing damage	0 - 1.9%	2 - 5.9 %	6 - 9.9 %	10 - 19.9 %	> 20 %
Severity category	Very Low	Low	Moderate	High	Very High

RISK ASSESSMENT CHART

Risk Assessment Chart						
Variables	2	4	6	8	10	Score
How big is the animal (s)	Eg. Pipit	Eg. Pratincole	Eg. Masked Lapwing	Eg. Whistling Kite, Goanna	Eg. Wedge - tailed eagle, Feral dog	
How many animals	0-5	6-10	10-50	50-100	100+	
Where are the animals situated	Zones 3 & 4	Zones 1 & 13	Zone 2	Zone 11	Zones 5, 6, 7, 8, 9, 10 & 12	
Runway Visibility	2000	1500	1200	800	<800	
					Total Score	

LIVELLO DEL RISCHIO DELLE ZONE

Land-Use	Permitted in Primary Zone	Permitted in Secondary Zone	Permitted in Special Zone
High Risk			
- Putrescible waste landfill	No	No	No
- Food waste hog farm	No	No	No
- Wildlife refuge	No	No	No
- Waterfowl feeding station	No	No	No
- Racetrack	No	No	No
Moderate Risk			
- Open or partially enclosed waste transfer station	No	No	Yes
- Cattle paddock	No	No	Yes
- Sewage lagoon	No	No	Yes
- Municipal park, recreational	No	No	Yes
- Golf course	No	No	Yes
Low Risk			
- Dry Waste Landfill	No	Yes	Yes
- Marsh, swamp, mudflat	No	Yes	Yes
- Shopping mall, plaza	No	Yes	Yes
- Fast food restaurant	No	Yes	Yes
- Out door restaurant	No	Yes	Yes
- School yard	No	Yes	Yes
- Community/Rec. Centre	No	Yes	Yes
Potentially Risky			
- Poultry factory farm	Various	Various	Various
- Enclosed transfer station	Various	Various	Various
- Wet/dry recycling facility	Various	Various	Various
- Storm water mgmt pond	Various	Various	Various
- Plowing/cultivating	Various	Various	Various

LIVELLO DEL RISCHIO

Level of Risk	Characteristics	Illustrative Species
Level One	Very large (>1.8 kg), flocking	Geese, cranes, cormorants
Level Two	Very large (>1.8 kg), solitary or large (1-1.8kg), flocking	Vultures, Mallards, Great Black-backed Gulls
Level Three	Large (1-1.8 kg), solitary or Medium (300-1000 g), flocking	Red-tailed Hawk, American Crow
Level Four	Medium (300-1000g), solitary or small (50 – 300 g), flocking	European Starling
Level Five	Small (50-300 g), solitary or Very small (<50 g), flocking	Eastern Meadowlark, swallows
Level Six	Very small (<50 g), solitary	Warblers, vireos, sparrows

I VOLATILI SONO ATTRATTI DALLA PRESENZA DI

- garbage (edible waste),
- fruit-producing trees and bushes,
- seed-producing vegetation,
- green weeds,
- grass,
- aquatic vegetation,
- agricultural grains,
- large numbers of rodents or small birds, and
- large numbers of insects and earthworms.

I VOLATILI SONO ATTRATTI DALLA PRESENZA DI

- garbage dumps,
- food-waste landfill sites,
- sewage outlets,

- fish plants,
- fish piers,
- abattoirs,
- pig farms, and
- bird-attractant agriculture

SINTESI
"MANAGING WILDLIFE DAMAGE"

- La presenza di volatili e altri animali selvatici costituisce un potenziale pericolo per la sicurezza della navigazione aerea.
- Per ridurre la possibilità di impatto con volatili e animali selvatici è necessario installare lateralmente alla pista di volo principale un apparato fisso di dissuasione che emette ultrasuoni (space master).
- Tale strumento, programmato per funzionare in un arco temporale delle ore di luce della giornata, talvolta anche nel periodo notturno.
- Il funzionamento dello space master è monitorato da una Unità Operativa e deve essere sottoposto a manutenzione programmata.
- Vanno eseguite ispezioni routinarie nell'arco giornaliero, distribuiti e variabili per evitare assuefazioni. Vanno eseguite anche ispezioni/investigazione on demand sulla presenza di volatili o animali.
- Ogni identificazione wildlife come le verifiche negative vanno segnalate su apposita scheda.
- l'attività di allontanamento wildlife viene espletata dallo staff della Security Servizi

UTILIZZO DEI FALCONI

- **Alcuni aeroporti accoppiano anche l'impiego della falconeria**

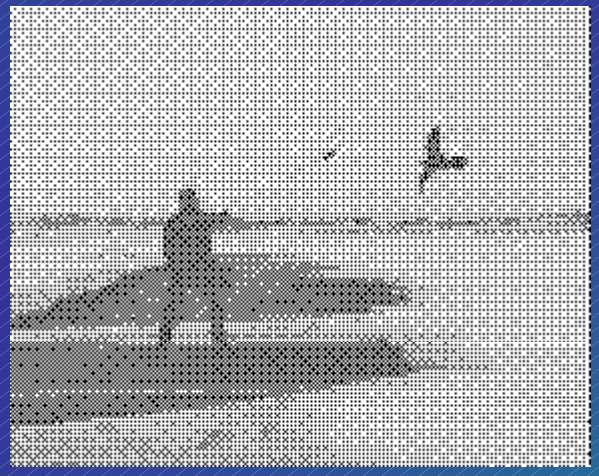
ESPERTI PROFESSIONISTI POSSONO IDENTIFICARE IL RISCHIO

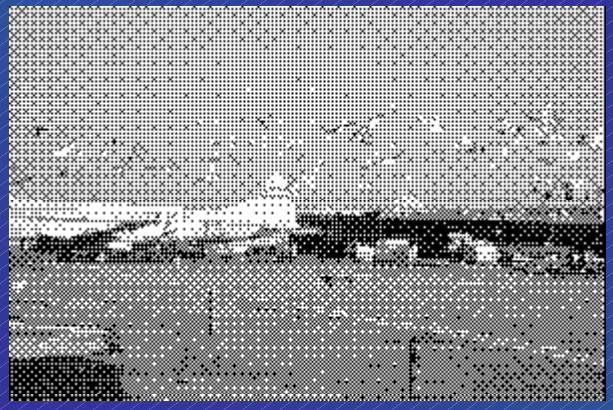

ESPERTI PROFESSIONISTI
POSSONO IDENTIFICARE IL
RISCHIO

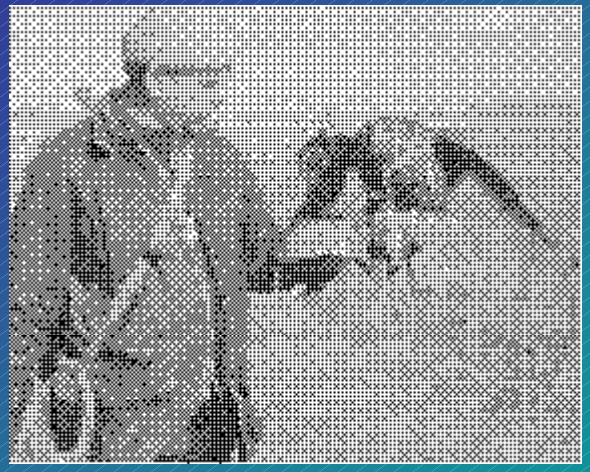

INTERVENTI DI DISINFESTAZIONE
ALLONTANAMENTO
RAPIDO E PERIODICO

IDENTIFICAZIONE DELLE SPECIE

CATALOGAZIONE DEL RISCHIO







IFALPA SOSTIENE

- EVERY COUNTRY – REGION NEEDS A BIRDSTRIKE COMMITTEE-GATHER DATA, RECOMMEND MITIGATION

- CHANGE ICAO ANNEX 14 TO MAKE WILDLIFE MITIGATION A STANDARD NOT A "RACCOMENDED PRATICE"

AEROPORTI ITALIANI A MAGGIOR RISCHIO VOLATILI

- ROMA FIUMICINO
- MILANO MALPENSA
- MILANO LINATE
- GENOVA SESTRI
- VENEZIA TESSERA
- RONCHI DEI LEGIONARI
- NAPOLI CAPODICHINO

AEROPORTI ITALIANI A MAGGIOR RISCHIO VOLATILI

- PALERMO PUNTA RAISI
- CATANIA FONTANAROSSA
- CAGLIARI HELMAS
- OLBIA
- ALGHERO FERTILIA
- BARI PALESE
- ANCONA FALCONARA

FINE