Real Time Warning System in the IAF
Authority and Responsibility

Maj. Oded Ovadia (Msc)
Birdstrike Prevention Section
IAF
Background

- Small air-space
- Heavy aerial traffic
- Massive soaring bird migration

Significant conflict
The Israeli Air Force lost 3 pilots and 11 fighters as a result of bird-strikes in 5 decades.
Soaring bird migration research

Routes

Timing

Speed

Altitude

Effect of weather
BPZ regulations

Bird Plagued Zone (1984)

Regulations for jet engine AC’s flying below 3000’ AGL:

• In migration routes
• During migration season
Bird strikes in the IAF (1977-2011)

Number of accidents


BPZ implementation

Total lost
Different scenarios

- Birds migrate out of the restricted areas
- Birds migrate before/after regulations are valid
- Regulations are not valid for all AC’s
- Main AB’s are located “within” migration routes
Real Time Warning System

Locate and follow the flocks on route

and warn a specific aircraft

of a specific flock of birds

in a specific location
Bird Migration Warning Center

- Operational cell
- 24 hours a day
- **Responsibility** –
  - Locate and follow
  - Define migration level
  - Update Air Situation Picture system
  - Send real time warnings Via ATC & GCU
  - Update operational units.
Bird Migration Warning Center

Bird watchers

GCU (Pilots)

Air bases (ATC, Pilots, BCR)

Bird radars

BMWC

ASP system

Intra-Net
Long Range Bird Radars

- EEC ASR weather radars
- Located in the north and south
- With bird detection algorithm
- Detection range – 60 nm
Honey Buzzards (9/10)
White Storks
White Pelicans
Gray Cranes
Honey Buzzards
Bird detection in the CTR

- GCA radars
- Old X-band radars developed for different purpose but...
- Detection range - 15 -20 nm
- High resolution
- Manual operation
Authority and responsibility
Authority and responsibility

It is easier to form clear definitions when the boss of the PIC, the boss of the ATC, and the boss of the GC is the same boss.
Authority and responsibility

- **BMWC** –
  - See the “big picture”
  - **Authority** - to restrict flight altitude or speed
  - **Responsibility** – locate, follow, update, warn…

- **Ground Controller** –
  - Also familiar with the mission
  - **Authority** - restrict low level flights on route
  - **Responsibility** - warn PIC using data from the ASP
Authority and responsibility

- **Air Traffic Controller** –
  - **Authority** – Change circle, delay takeoffs/landings…
  - **Responsibility** - “Everything happens in the base & CTR”
  - **BCU** – Advise how to carry out the responsibility

- **Pilots** –
  - Do not have the necessary information to decide
  - **Authority** – To override all other decisions
Future plans

- A third radar in the center of Israel
- Automatic interface between bird radars and ASP system
- Improve bird detection algorithm
- Automatic detection system for the CTR
Fall migration 2011 - http://www.youtube.com/watch?v=fvdXjZgLtFY

Thanks!