

26 NOV 2016

BSDHQ

1. **SUBJECT: Brigade Radio Communications Standard Operating Procedures (SOP)**
2. **PURPOSE:**  
Establish methods of ensuring that all units may freely communicate and share vital information, while maintaining minimum congestion of communication channels.
3. **APPLICABILITY:**  
All personnel conducting flight operations at Black Shark Den (BSD) hosted events.
4. **References:**
  - a. Kamov KA-50 Flight Manual
  - b. Mil Mi-8 Flight Manual
  - c. Aerospatiale SA-342 Flight Manual
  - d. Bell UH-1 Flight Manual

#### **Radio Frequency Separation by Flight Group**

1. All flight groups conducting a mission shall be assigned an internal (Private) VHF or UHF AM frequency
2. All communication traffic directly between members of the same flight shall be transmitted over the Private channel
3. Default VHF private channel shall be 124 MHz AM, unless mission requirements dictate otherwise
4. Default UHF private channel shall be 225 MHz AM, unless mission requirements dictate otherwise
5. Each flight shall increment their Private channel by 1 MHz from the previous flight (EX, Ch1 124 MHz, Ch2 125 MHz, Ch3 126 MHz)

#### **Radio Communications between flights**

1. Flight leaders shall communicate on a shared (Public) VHF FM channel between 30 and 60 MHz
2. Default Public channel shall be 30 MHz FM, unless mission requirements dictate otherwise
3. All pilots shall listen on Public channel
4. In order to minimize cross-flight comms congestion, transmission on the Public channel is restricted to Flight Leaders
5. In cases of emergency, any flight member may transmit on the Public channel.
6. Emergency situations include, but are not limited to, spotting of ground fire, observance of external malfunction on allied aircraft, spotting of hostile aircraft, etc.
7. In the event that flight leaders are out of communications range, any pilot who receives a public channel communication may acknowledge and respond on behalf of their flight leader

#### **Long-Range Communication**

1. Both the Mi-8 and the KA-50 are equipped with Shortwave HF-Band radio sets.

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2. HF band transmissions may take advantage of atmospheric conditions to propagate over very large ranges
3. Therefore, the MI-8 and KA-50 may be used to communicate at extreme distances with like units when mission requirements dictate such is necessary.

### ***Responsibilities***

#### **Commander**

1. Establish SOP for flight communications
2. Ensure all BSD leaders understand SOP
3. Ensure all BSD pilots receive training on radio comms procedure

#### **Mission Planner**

1. Establish for all flights in mission are assigned Private, non-conflicting VHF or UHF AM channels
2. Establish a Public Low-Band VHF (30-60 MHz) FM channel
3. Ensure that all aircraft are programmed with both Public and Private radio channels
4. Ensure all pilots are briefed as to the comms plan for the mission

#### **Flight Leaders**

1. Ensure all flight members are familiar with SOP
2. Share necessary information with allied flights on Public channel
3. Communicate within own flight on Private channel

#### **Flight Members**

1. Monitor both Public and Private channels
2. Communicate with Flight Leader and other Flight Members via Private Channel

**THE POINT OF CONTACT FOR THIS SOP IS THE UNDERSIGNED AT  
[WWW.BLACKSHARKDEN.COM](http://WWW.BLACKSHARKDEN.COM)**

BaDCRC  
Black Shark Den  
Commanding

***APPENDIX A: Overview of Radio Equipment on aircraft assigned to Black Shark Den***

**Kamov KA-50 Black Shark**

- **R-800 VHF/UHF AM Radio**
  - VHF Range: 100-149 MHz
  - UHF Range: 220-400 MHz
  - Pilot Tuneable
  - Used for Voice and Datalink
  - Must be used as Private radio to ensure that separate KA-50 flights retain Datalink capability
- **R-828 VHF FM Radio**
  - Low-Band VHF
  - Range: 20-60 MHz
  - 10 preset channels
  - Voice only
  - Ideal for Public radio, lower frequency VHF propagates better than higher frequency, radio does not transmit data
- **Shortwave/HF**
  - Shortwave HF Band radio
  - Frequency not adjustable
  - Suitable for long-range communications

**Mil Mi-8 MTV2**

- **R-863 VHF/UHF AM/FM Radio**
  - VHF Range: 100-149 MHz
  - UHF Range: 220-400 MHz
  - Pilot Tuneable
  - Voice Only
- **R-828 VHF FM Radio**
  - Low-Band VHF
  - Range: 20-60 MHz
  - 10 preset channels
  - Voice only
  - Ideal for Public radio, lower frequency VHF propagates better than higher frequency, radio does not transmit data
- **YaDRO Shortwave/HF Radio**
  - HF Range 2-18 MHz
  - Pilot Tunable
  - Suitable for long-range communications

**Bell UH-1 Iriquois**

- **ARC-51BX UHF AM**
  - Range: 225-400 MHz
  - Pilot Tunable

- Voice Only
- **ARC-134 VHF AM radio**
  - Range: 116-150 MHz
  - Pilot Tunable
  - Voice Only
- **ARC-131 VHF FM**
  - Range: 30-76 MHz
  - Pilot Tunable
  - Voice Only

**Aerospatiale SA-342 Gazelle <INCOMPLETE>**

- **<model?> VHF AM**
  - Range: 118-144 MHz
- **PR4G VHF FM**
  - Range: 30-88 MHz.
- **<model?> UHF <modulation?>**
  - Range: 225-400 MHz