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EVALUATION OF NIGHT VISION GOGGLES (NVG) FOR MARITIME SEARCH AND RESCUE: HH-65A SWEEP WIDTH VERIFICATION AND LASER ILLUMINATOR EVALUATION

FINAL FIELD TEST RESULTS

FINAL REPORT
OCTOBER 1999

Prepared for:

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Washington, DC 20593-0001

N O T I C E

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16. Abstract (MAXIMUM 200 WORDS)
The U.S. Coast Guard R&D Center conducted field tests to evaluate the search effectiveness of Coast Guard HH-65A helicopters equipped with night vision goggles (NVG). The purpose of the tests was to determine if the HH-65A's NVG search performance differed significantly from that of the Coast Guard HH-60J, and to assist the Coast Guard in deciding whether to continue to experiment with a near-infrared (IR), wide-area illuminator as an alternative to the aircraft's landing/hover lights.

Helicopters searched test ranges for small boats, life rafts, and mannequins. Analysts collected aircraft and target positions, target detection logs, and environmental and human factors data. Following reconstruction and analysis, sweep width data from the two aircraft were compared. No statistically significant differences in NVG search performance were found between the two aircraft. HH-65A data were combined with existing HH-60J data to produce updated sweep width tables incorporating additional illumination, environmental, and human factors conditions. Active illumination improved sweep width under all conditions tested. Low-intensity, near-IR illumination provided a small sweep width improvement over landing lights when whitecaps were present.

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EXECUTIVE SUMMARY

1. Background

The U.S. Coast Guard R&D Center, Groton, CT, conducted three field experiments to evaluate the search performance of the Coast Guard's HH-65A helicopters equipped with Night Vision Goggles (NVG). The primary purpose of the experiments was to determine if the Coast Guard should develop unique NVG sweep width tables for the HH-65A, or use the tables developed for the Coast Guard HH-60J. Additionally, the R&D Center sought to determine whether to continue to experiment with a prototype near-infrared NVG illuminator developed under an earlier initiative, or to recommend that helicopter crews use the aircraft landing lights during NVG searches. The prototype illuminator generated energy using two 15-watt (9-watt output) near-IR (808-nanometer wavelength) lasers. The lasers were coupled to lenses mounted on a platform protruding from the left rear aircraft door. The lenses projected a large elliptical area on each side of the aircraft. Finally, the R&D Center used the additional data from the HH-65A tests, along with improved statistical techniques, to update the existing helicopter NVG sweep width tables.

2. Experimental Approach

To simulate real-world maritime search conditions, the R&D Center set up target ranges containing pre-positioned small boats, life rafts, and mannequins, whose locations were known only by the test team. NVG-equipped helicopter crews performed parallel-track and creeping-line searches, while an onboard data collector time-tagged and recorded the crews' target detections, along with various environmental and human factors parameters. Following each field test, analysts used target position logs, aircraft position logs, and environmental records to reconstruct each search. From that reconstruction, analysts determined, for a range of search conditions, the probability that a crew member would see each target type as the helicopter flew by at any given range. Analysts then constructed a series of Probability of Detection (POD) graphs, which plotted the aircraft's closest point of approach while passing each target versus the probability of the target being detected at that range. After mathematically smoothing the curves, they computed the integral of POD as a function of lateral range over all possible lateral range values. The result was sweep width, *W*, a measure of search effectiveness, for that particular target under the search conditions. *W* is used herein to compare the search performance of the HH-65A with that of the HH-60J, and the performance achieved with the experimental illuminator with that achieved using aircraft landing lights. Because no data exist for the HH-60J that would allow the two aircraft to be compared under illuminated conditions, only non-illuminated data were used for this comparison.

3. Observations

The following observations were made during the field tests. While they are not based on scientific analysis of the data, they may have implications for training, doctrine, or aircraft modifications.

- "Credit card"[1] windows in pilots' doors interfere with NVG search effectiveness.
- The HH-65A's Traffic Collision Avoidance System (TCAS) display causes glare and reflections within the cockpit.
- Reflective tape is highly visible when illuminated by landing lights or the illuminator.
- Whitecaps are distracting and annoying.
- Fatigue seems to play a major factor in crew's alertness after about 4 hours on task.
- Crews initially said that backscatter from the illuminator beam was distracting, but became less critical when they witnessed how effective it was against retro-reflective targets.
- Moderate rain is very distracting when illumination is used.
- Inexperienced crews have trouble distinguishing targets from whitecaps, debris, etc.
- Backscatter from the landing/hover lights is not highly visible to the naked eye when aimed straight down. Backscatter becomes more prevalent as the lights are aimed farther out.
- Crews generally over-estimate target distances.

4. Conclusions

The following conclusions were drawn based on statistical analysis of the field test data.

- The sweep widths for the HH-65A and the HH-60J are not statistically different, but the HH-65A appears to have a slightly better sweep width as a result of a higher probability of detecting targets close to the aircraft's flight path.
- Active illumination improves sweep width for Person(s) in the Water (PIWs) under all conditions encountered during these tests. Under extremely bright moon conditions with excellent visibility, active illumination may not improve sweep width for life raft and skiff targets. Low-intensity, near-infrared illumination seems to provide a small improvement in sweep width over the aircraft landing lights when whitecaps are present.
- The use of three searchers (two pilots and one crewman), a common practice when the HH-65A first became NVG compatible, results in sweep widths that are roughly 80 percent of those achieved by a normal four-person crew.

5. Recommendations

- Though the HH-65A's sweep widths appear to be slightly better than those of the HH-60J, the difference is not statistically significant at high confidence levels. Therefore, the Coast Guard should use the same sweep width tables for both aircraft.

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[1] A small window that can be manually opened. The frame around the window interferes with pilots' vision.

- To maximize search performance, search and rescue unit (SRU) helicopters should employ four searchers whenever possible.

- The effectiveness of searching for PIWs, outfitted with retro-reflective material, is enhanced by the use of artificial illumination. Even under high humidity conditions with backscatter, field test data indicate that retro-reflective material is visible to a greater extent when illumination is used.

- Searches for small boats and rafts benefit from the use of artificial illumination when the moon has about 50-percent or less face showing. Artificial illumination does not appear to increase (and may decrease) sweep width during very bright natural lighting conditions (near full-moon conditions). When humidity is high and backscatter is an annoyance, use of artificial illumination will normally improve probability of detection at shorter lateral ranges and may slightly reduce probability of detection at longer lateral ranges. Experimental results tend to indicate improved sweep widths with artificial illumination even when backscatter is an annoyance.

- The prototype near-IR illuminator seems to improve sweep width slightly under whitecap conditions. The effect cannot be proven with the quantity of data taken to date and is not significant at a 68-percent confidence level. The effect is not strong enough to justify continued prototype development. The Coast Guard should continue to monitor technological improvements from the research conducted by other services and retest if significant technological advancements occur.

- Parachute flares provide additional illumination, but the Coast Guard would have to develop operational doctrine for deploying patterns of flares to provide sufficient light in the immediate search area to benefit NVG-equipped SRUs. Not enough data were available to justify any solid conclusions. Expended (hence invisible) flares drifting into the search area may create an unacceptable risk to airborne SRUs. If further research into flare drop tactics is desired, coordination with Canadian authorities is recommended.

- The appendix B procedure to calculate sweep width should be considered as the basis of new NVG sweep width tables to be placed either in the National Search and Rescue Manual or in the Coast Guard Addendum.

- The Coast Guard should consider an aggressive campaign to educate the maritime community on the benefits of using retro-reflective material to increase target visibility during night search and rescue operations.

- Due to the night visibility improvement of PIWs wearing PFDs with retro-reflective material, the Coast Guard should consider mandating the use of retro-reflective material on all PFDs.

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LIST OF ABBREVIATIONS AND ACRONYMS

A&T	Analysis & Technology, Inc.
ANVIS	Aviator's Night Vision Imaging System
CLDC	Cloud Cover
CPA	Closest Point of Approach
CS	Creeping Line Search
DGPS	Differential Global Positioning System
FM	Frequency Modulation
FOV	Field of View
GPS	Global Positioning System
Hs	Significant Waveheight
IR	Infrared
ISARC	Improvement of Search and Rescue Capabilities
LOGIT	A module in the SYSTAT commercial software package used for statistical regression analysis
MOONVIS	Moon Visible
nmi	Nautical Mile
NVG	Night Vision Goggles
P_D	Probability of Detection, for a single searcher pass at a particular CPA range to a given target
PFD	Personal Flotation Device
PHS	Moon Phase
PIW	Person(s) in the Water
POD	Probability of Detection, overall, for an entire search
PS	Parallel Search
R&D	Research and Development
SAR	Search and Rescue
SOLAS	Safety of Life at Sea
SRU	Search and Rescue Unit
TCAS	Traffic Collision Avoidance System
TOT	Time on Task
UHF	Ultra High Frequency
VHF	Very High Frequency
VIS	Visibility
W	Sweep Width
WCAPS	Whitecaps

SECTION 1

INTRODUCTION

1.1 BACKGROUND

This report documents the latest effort in the U.S. Coast Guard Research and Development (R&D) Center's evaluation of night vision goggles (NVGs) for airborne search and rescue (SAR) missions. This evaluation is part of the R&D Center's Improvement of Search and Rescue Capabilities (ISARC) Project. The R&D Center has conducted eleven experiments to evaluate NVGs: five off Fort Pierce, FL; four in Block Island Sound off the Connecticut/Rhode Island/New York coasts; one off Port Huron, MI, and one on Canso Bank, Nova Scotia, Canada. Data were collected for the search objects typical of actual SAR missions using operational Coast Guard search and rescue units (SRU). These included HH-3, HH-60J, and HH-65A helicopters, HU-25C and RG-8A fixed-wing aircraft, 41-ft utility boats, and U.S. and Canadian medium endurance cutters. Surface vessels searched with AN/AVS-5 and AN/AVS-7 (Generation II) NVGs, while aircrews used Generation III AN/AVS-6 ANVIS. The search targets were 18- and 21-ft small boats, 4-, 6-, and 10-person life rafts, and simulated person(s) in the water (PIWs). Environmental data were collected and examined to determine the effect of various factors on NVG detection performance. This report documents the most recent series of three field tests dedicated to measuring the NVG search performance of the HH-65 helicopter. The results of prior experiments are documented in references 1 through 3.

During the spring 1992 NVG experiment in Fort Pierce, the searchlight on the SRU, an HH-60J helicopter, was mistakenly left on for a brief period. Results from this period indicated that the searchlight significantly improved the ability of the SRU to detect targets. At the same time, the laser division of the U.S. Air Force Phillips Laboratories, at Sandia National Laboratories, Albuquerque, NM, was investigating the ability of the NVGs to detect ground targets using a near-infrared (IR) laser illuminator. Cooperation between the R&D Center and the U.S. Air Force resulted in the development of a prototype laser-driven illuminator to be tested on board a U.S. Coast Guard helicopter for SAR missions. The R&D Center field-tested the prototype in the fall of 1994 with encouraging results, which were documented in reference 3. Based on that experience, the R&D Center developed an improved prototype, known as the wide-area illuminator, which they tested on the HH-65A during this test series. Because the use of white aircraft landing lights as downward-pointing "hover" lights has become prevalent during fleet NVG operations, these tests were also designed to compare the hover lights' effectiveness to the laser illuminator.

Because the HH-65A has only recently been modified for NVG compatibility, tactics and doctrine are still evolving. During the first test in 1997, and a portion of the second test in 1998, participating air stations supplied three-person crews. The aircrewman could search from either side of the aircraft, but was generally assigned to concentrate on whichever side the aircraft was being flown from to compensate for pilot workload.

During the second test, crews included a fourth person. Thereafter, each crew position was assigned to search their respective sector of the aircraft's field of view (FOV).

1.2 PURPOSE

The ISARC Project seeks to improve the detection of SAR-related objects through improved techniques for search planning, drift prediction, and visual and electronic search. This report summarizes the results of three NVG field tests conducted by the R&D Center during the following dates: 15 September through 3 October 1997, 26 April through 15 May 1998, and 21 September through 10 October 1998. The test series evaluated the newly converted, NVG-compatible HH-65A helicopter, and experimented with an improved version of the near-IR illuminator. The field tests were conducted in waters near Fort Pierce, FL, Port Huron, MI, and in Block Island Sound, CT, in cooperation with the Coast Guard Air Stations Cape May and Atlantic City, NJ, Miami, FL, and Detroit, MI. HH-65A helicopters conducted searches using various aircraft lighting configurations, which included both normal operational NVG configurations and the improved near-IR illuminator.

1.3 OBJECTIVES

The objectives of this field test series were as follows:

1. Establish the capabilities of Aviator's Night Vision Imaging System (ANVIS)-equipped HH-65A helicopter crews to detect 6-person life rafts, skiffs, and simulated PIWs.
2. Compare the search target detection performance (sweep width) data from the HH-65A helicopter to the large data set already collected for Coast Guard HH-60J and HH-3 helicopters (Robe and Plourde, 1993).
3. If Objective 2 indicates that HH-65A data are statistically different from the HH-60J/HH-3 data, begin the process of developing NVG search target detection performance (sweep width) tables specifically for the HH-65A, to be included in (National Search and Rescue Manual, 1986).
4. Gather data on the effectiveness of active onboard illumination in aiding NVG searches.
5. Determine if work should continue on the experimental wide-area illuminator.

This report describes the equipment and the experiment, and summarizes target combinations evaluated, environmental conditions encountered, data quantities obtained, and crew and observer comments. Sweep width calculations for these targets are presented. Finally, recommendations were made for disposition of current sweep width tables, implementation of the updated tables, use of four searchers versus three, use of landing lights, and further development of a specialized NVG illuminator.

1.4 AN/AVS-6 NIGHT VISION GOGGLE DESCRIPTION

The helmet-mounted AN/AVS-6 ANVIS NVGs shown in figure 1-1 are designed for use by helicopter crews. These NVGs can be modified with a headstrap for use on board the fixed-wing aircraft.

The ANVIS NVGs operate in a broad range of night illumination conditions including starlight and overcast. Two Generation III image intensifier tubes are incorporated into a hinged binocular assembly that can be flipped up or down by the aviator. The ANVIS incorporates adjustments for diopter correction, range focus, inter-pupillary separation, vertical positioning, fore-aft positioning (eye relief), and tilt positioning. The binocular assembly is set off from the eyes so that limited non-NVG peripheral vision is available, allowing the eyes to be focused beneath the goggles to view instruments and controls. The ANVIS NVGs are limited to a 40-degree FOV. Peak spectral response occurs between wavelengths of 0.65 and 0.90 microns, which includes visible light from green through red and a portion of the near-IR spectrum. A "minus blue" instrument light filter eliminates wavelengths shorter than 0.625 microns (yellow). An automatic brightness control adjusts rapidly to changing illumination conditions.

Figure 1-1. AN/AVS-6 (ANVIS) night vision goggles.

The ANVIS NVGs tested during the R&D Center experiments were manufactured by ITT Electro-Optics Division, Litton Electron Devices, and Varian Corporation. ITT documents referencing detailed ANVIS specifications and the principles of operation are available (ITT Electro-Optical Products Division, 1986 and 1988).

1.5 NEAR-INFRARED WIDE-AREA ILLUMINATOR DESCRIPTION

The illuminator system contained two 15-watt (9-watt output) near-IR (808-nanometer wavelength) lasers, and two video lens enclosures. The lasers were contained in a protective enclosure secured to the aircraft floor behind the crewman's seat. The lens enclosures were mounted on a platform that protruded from the left rear aircraft door. Armored fiber-optic cables coupled the energy from the lasers to the output lenses. The platform allowed the lasers to be tilted toward the water so that the beam illuminated a large elliptical area on either side of the aircraft. Figure 1-2 illustrates the wide-area illuminator mounted on an HH-65A.

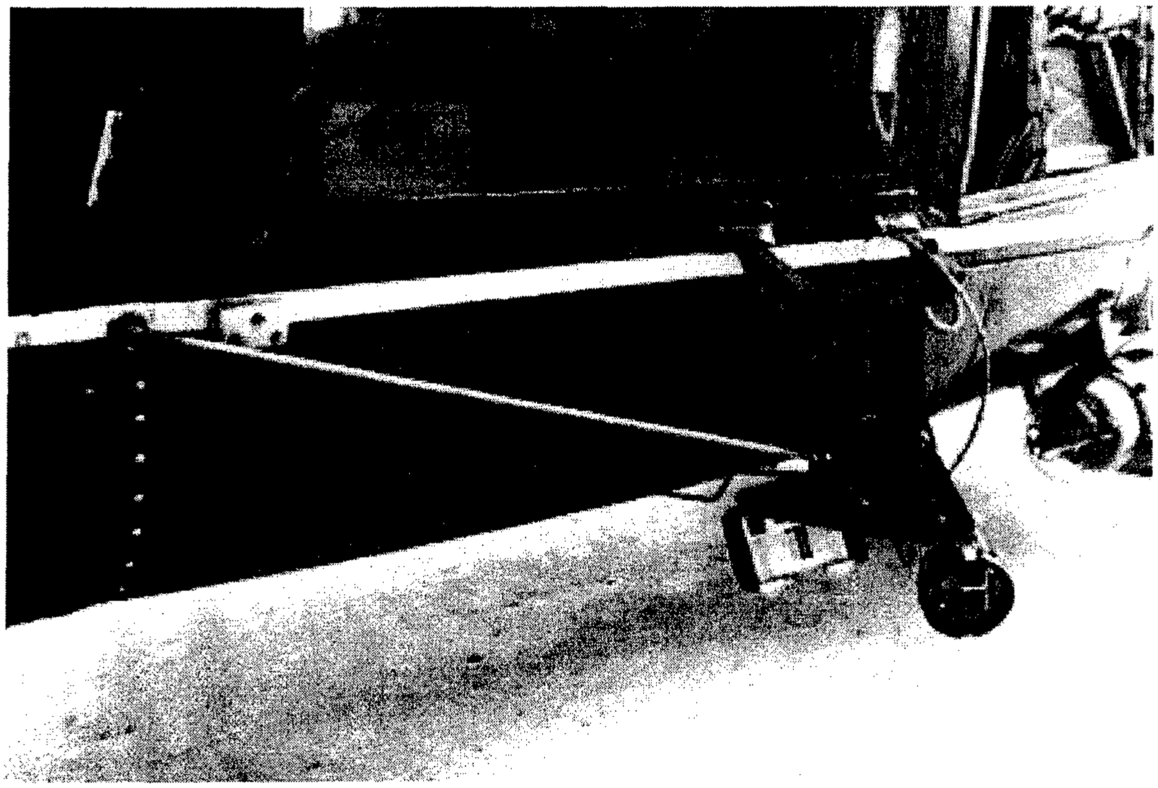

Figure 1-2. Prototype wide-area illuminator mounted on a CG HH-65A.

Figure 1-3 shows the pattern of the energy beams directed toward the water's surface. The patterns are not drawn to scale.

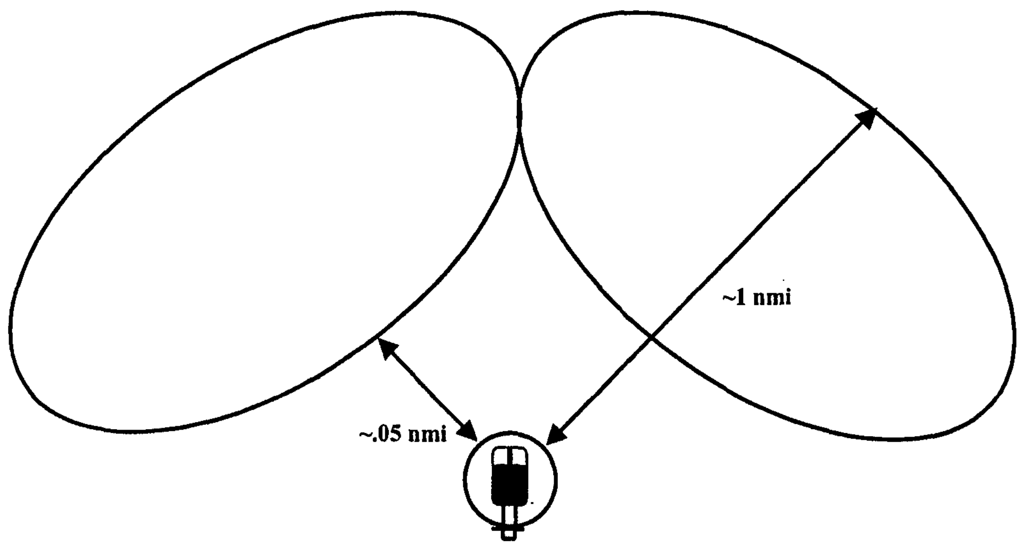

Figure 1-3. Surface illumination pattern for the wide-area illuminator.

1.6 EXPERIMENT DESCRIPTION

This experiment was conducted to simultaneously collect detection data from two HH-65A helicopters, one outfitted with an experimental illumination system. The use of two SRUs provided data collection opportunities where essentially the same environmental conditions existed for both illuminated and non-illuminated searches, thus forming a basis for comparison between the two modes, and between the illuminator and the aircraft landing lights. Sections 1.6.1 through 1.6.7 provide the details of this experiment.

1.6.1 Participants

The R&D Center Project Managers arranged primary logistics support, maintained liaison between all Coast Guard and contractor participants, and exercised top-level control of the field test.

Analysis & Technology, Inc. (A&T) was the prime contractor for the Coast Guard. A&T developed test plans, provided logistics support, developed and installed the DGPS tracking system and experimental illuminator, coordinated data collection priorities, provided data recorders on board SRUs, and reduced, analyzed, and presented the data.

U.S. Air Force Phillips Laboratories developed the laser system and assisted with aircraft installation. Phillips Labs participants consisted of civilian and U.S. Air Force personnel who provided on-call support for the laser throughout the test period.

CG Air Stations Cape May, Miami, Detroit, and Atlantic City provided HH-65A helicopters, maintenance support, and aircrews.

CG Stations Fort Pierce and Port Huron, and Coast Guard Auxiliary Flotilla 1403 provided logistic support and workspace.

CG Aids to Navigation Team Detroit deployed and recovered the MiniMet™ environmental buoy for the Lake Huron test. Contract marine operators deployed and recovered the MiniMet™ environmental buoy for the Fort Pierce and Block Island tests.

1.6.2 Exercise Areas

The exercise areas for this experiment measured approximately 10- by 20-nmi. The Fort Pierce, FL, exercise area was centered at 27° 32.6′N, 80° 09.0′W, along a major axis of 160/340 degrees magnetic. The Lake Huron area, located north of Port Huron, MI, was centered at 43° 17N, 082° 24.5W, along a major axis of 180/360 degrees true. The Block Island Sound exercise area was centered at 41° 12′N, 71° 52′W. Individual Block Island Sound search areas were selected with major axes oriented 270/090 degrees true. Figure 1-1 through figure 1-6 depict the three exercise areas. Actual search areas varied in size from a 10- by 12-nmi area for life raft targets to a 4- by 8-nmi area for PIWs. Track spacing was 1.0-nmi for skiffs and rafts, and 0.5-nmi for PIWs.

An onshore operations center was equipped with the computer and communications equipment required to direct data collection activities, and record target and SRU positions. This facility, known as R&D Control, was located convenient to, and within, very high frequency (VHF) radio range of the test areas.

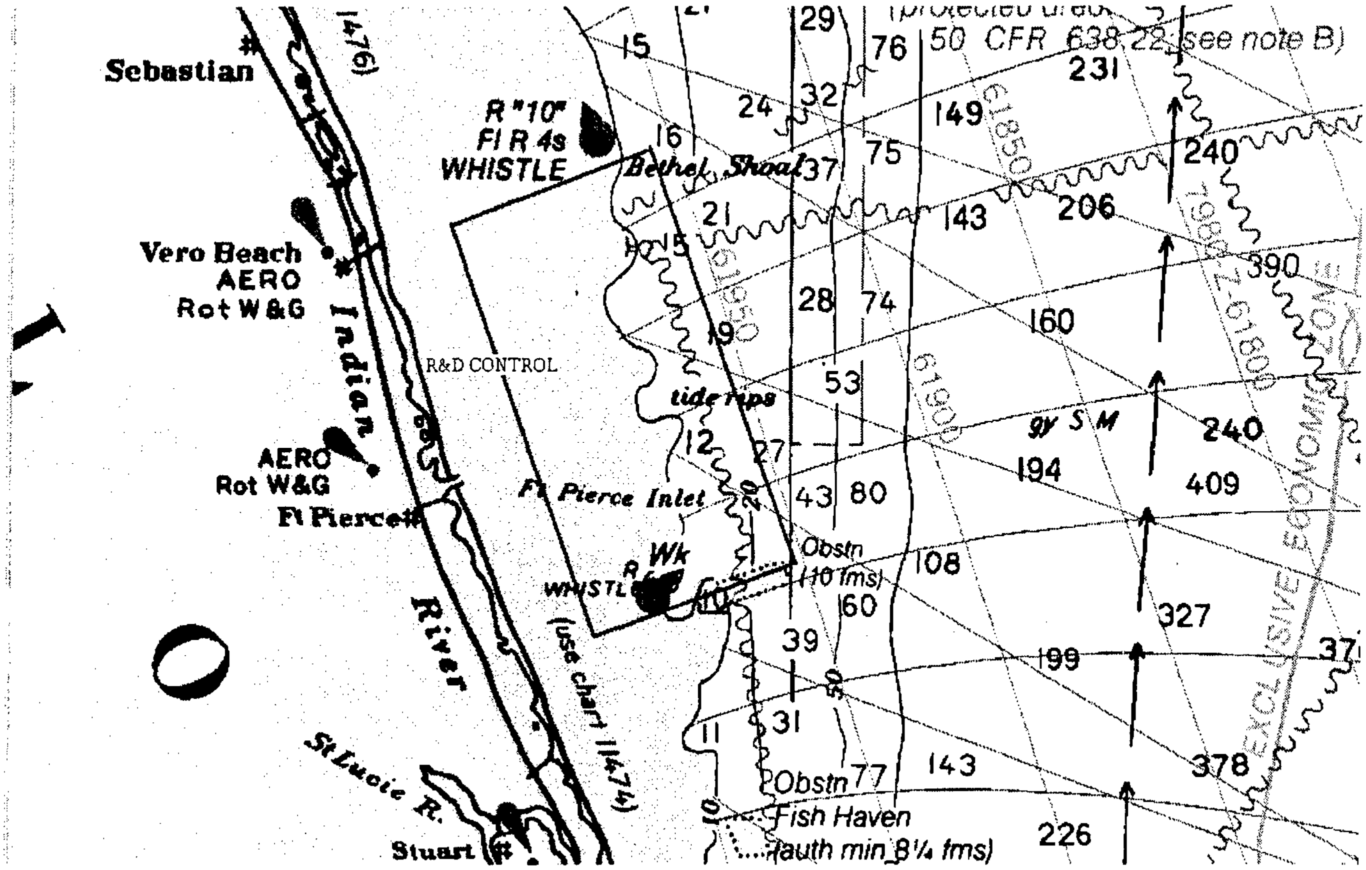

Figure 1-4. Fort Pierce exercise area.

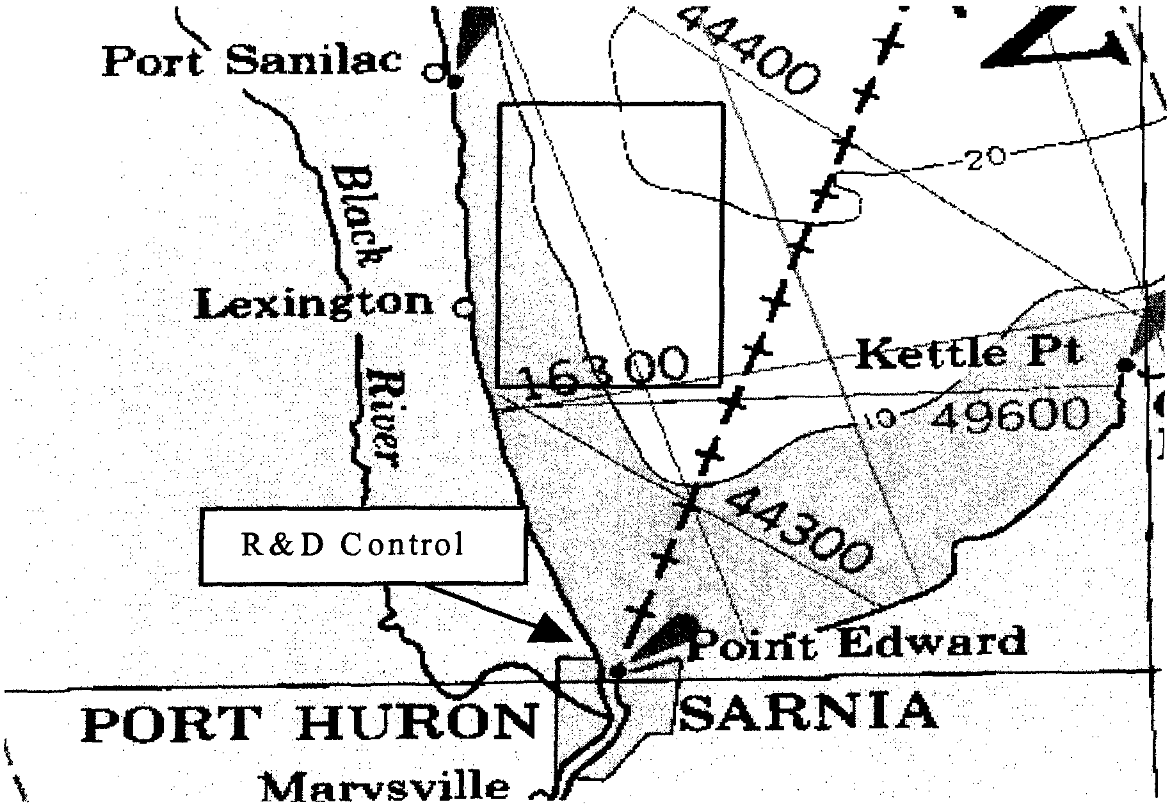

Figure 1-5. Port Huron exercise area.

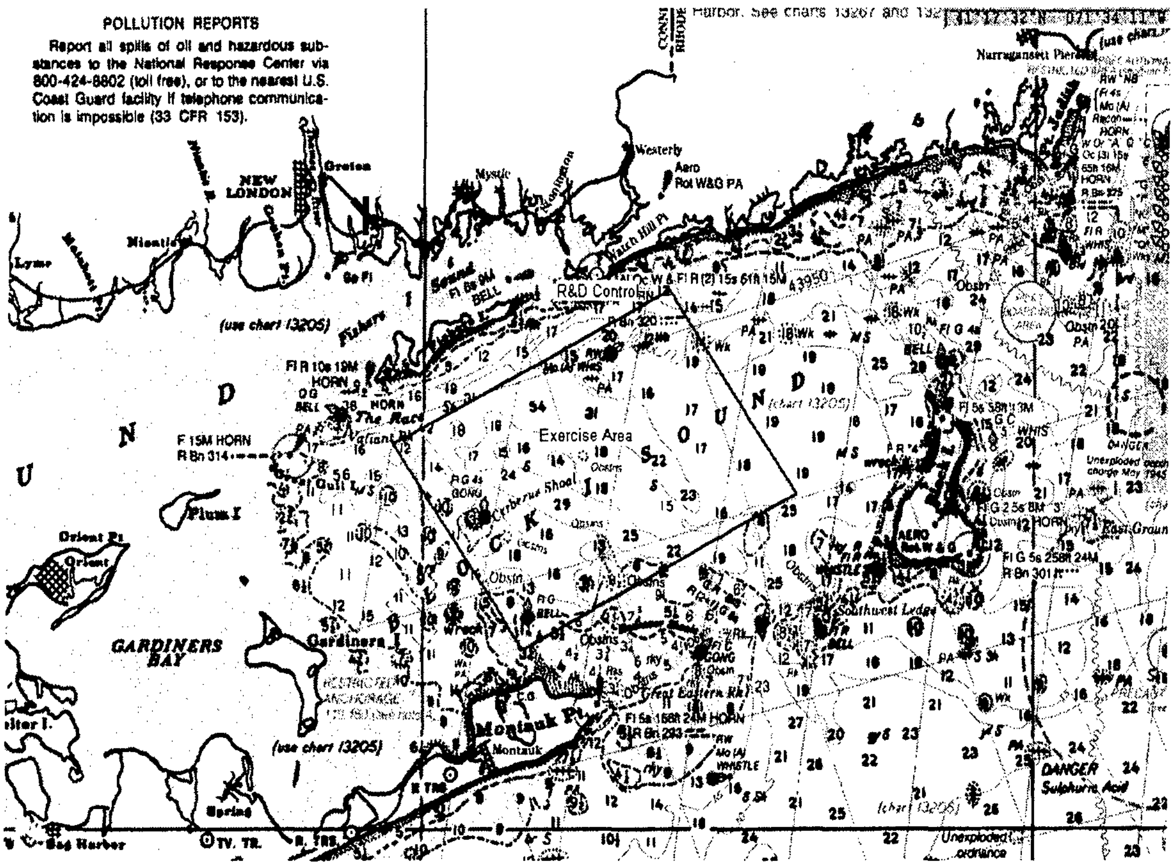

Figure 1-6. Block Island Sound exercise area.

1.6.3 Targets

This experiment incorporated 6-person life rafts, 18- and 21-ft skiffs, and simulated PIWs as search objects. No lights of any type were attached to the targets.

Department store-style mannequins served as PIW targets. Each was outfitted with a type I personal flotation device (PFD) with retro-reflective tape, and ballasted to maintain a realistic attitude in the water. Figure 1-7 depicts a typical PIW target.

Figure 1-8 shows an example of a life raft target. Rafts were deployed with no ballast and were anchored to float in an upright position. All rafts had retro-reflective tape applied in accordance with Safety of Life at Sea (SOLAS) specifications.

Table 1-1 summarizes target characteristics.

Figure 1-9 and figure 1-10 illustrate skiff targets.

Table 1-1. NVG test target descriptions.

TARGET (quantity)	TARGET DESCRIPTION	DIMENSIONS length x beam x freeboard (feet)	PRINCIPAL MATERIAL
PIW (10)	Department store-style mannequin wearing orange PFD with retro-reflective tape	1.5 x 1.0 x 1.0	Plastic
6-person raft (6)	Orange, with canopy and retro-reflective tape	8.6 x 5.8 x 3.8	Rubber/Fabric
18-ft skiff (3)	White, open skiff, with center console	18 x 7.5 x 1.6	Fiberglass
21-ft skiff (2)	White, open skiff, center console and blue bimini top	21 x 7.7 x 1.6	Fiberglass

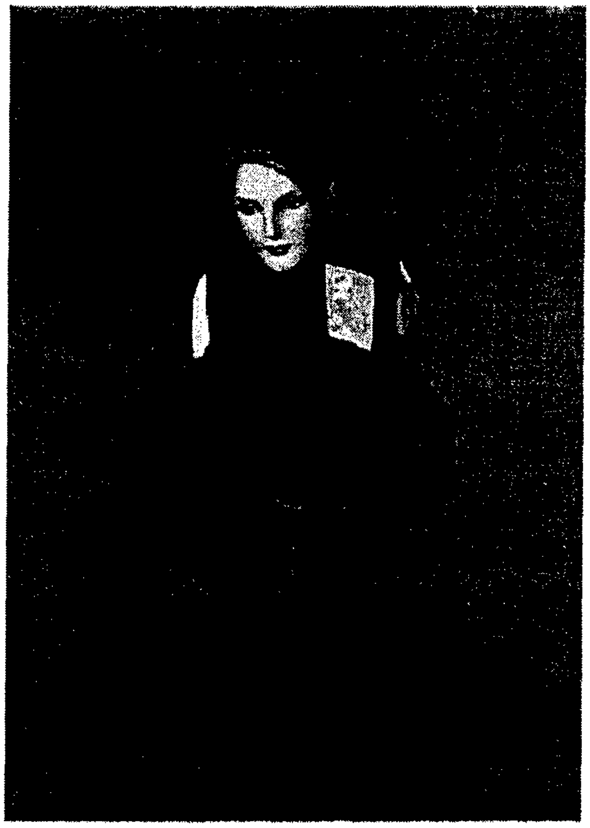

Figure 1-7. PIW target.

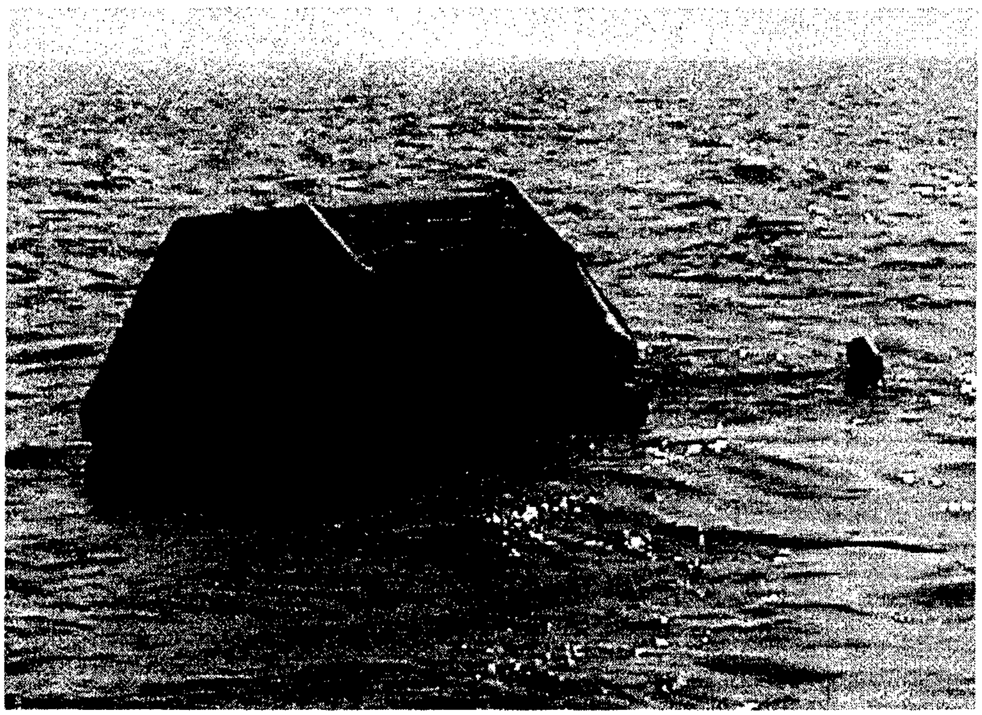

Figure 1-8. Life raft target.

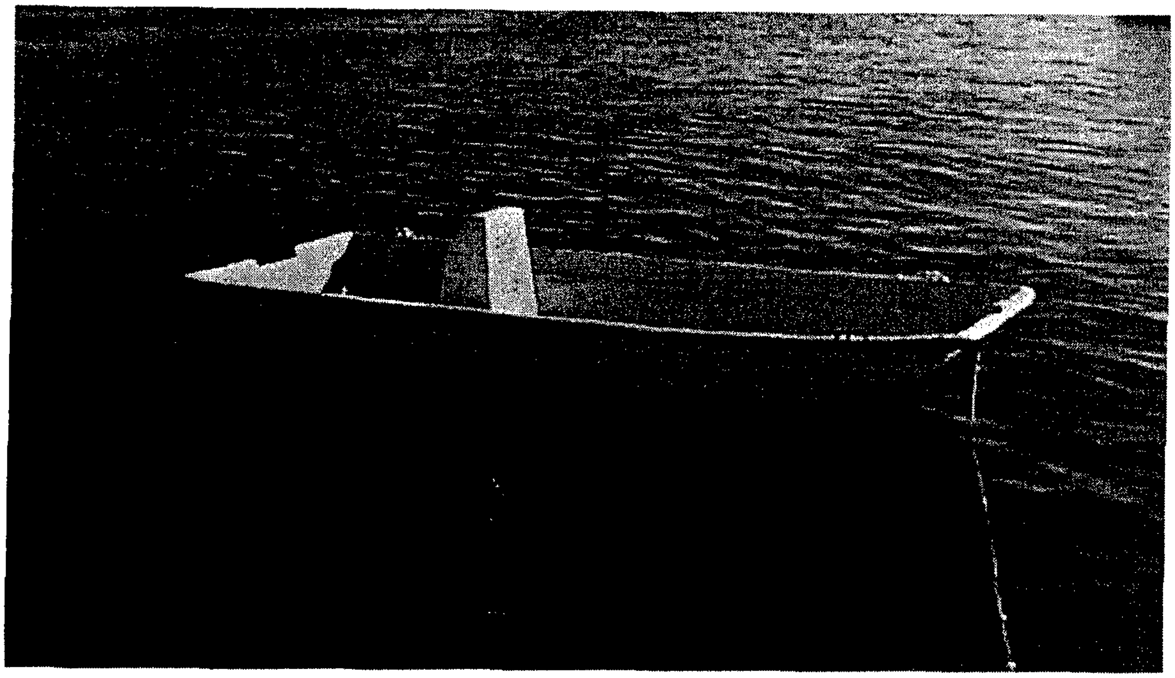

Figure 1-9. 18-ft skiff.

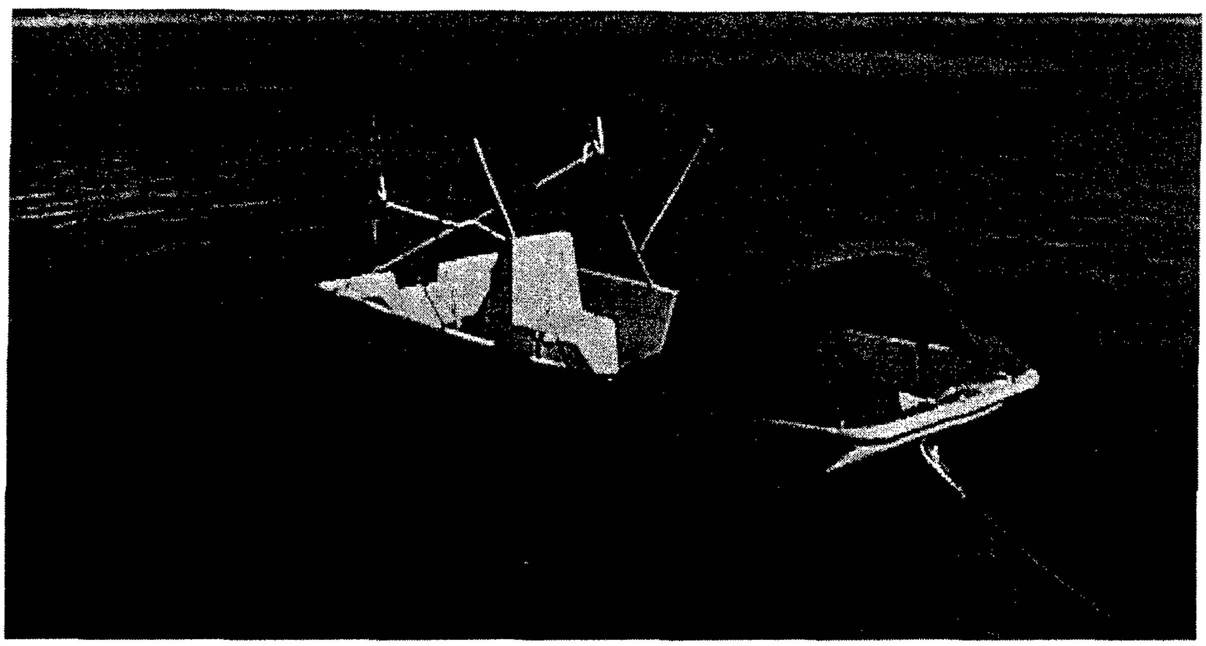

Figure 1-10. 21-ft skiff.

1.6.4 Lookout Positions

During the first test and a portion of the second test, each helicopter carried three NVG-equipped lookouts: the pilot, co-pilot, and flight mechanic. During the remaining test periods, the crew also included a rescue swimmer. All crewmen searched through closed Plexiglas windows. During the experiment, the onboard observer recorded the lookout position of the crewman making each detection.

1.6.5 Experiment Design and Conduct

Helicopter crews conducted operationally realistic NVG searches using both parallel search (PS) and creeping line search (CS) patterns, as defined in reference 3. Track spacing and search area dimensions were chosen to provide the maximum number of target detection opportunities at different lateral ranges without producing multiple target distractions for the lookouts. The helicopters used a 1.0-nmi track spacing while searching for skiffs and life rafts, and a 0.5-nmi track spacing while searching for PIWs. Figure 1-11 illustrates the type of search instructions provided to SRUs. The helicopters searched at a 300-ft altitude and 90-knot ground speed.

```
Area Raft1
Parallel Search

Commence Search Point:   43°11.9' N - 082°19.5' W
Datum (Center):          43°17.0' N - 082°24.5' W
Length: 12.00nm  Width: 7.00nm  Orientation (Major Axis): 353°T 360°M
Magnetic Variation used: 07°W
Track Spacing: 1.0nm   Search Speed: 90 knots
Direction of Creep: 263°T  270°M
Corner Pt #1    43°22.5' N - 082°30.3' W  Corner Pt #2  43°23.4' N - 082°20.7' W
Corner Pt #3    43°10.6' N - 082°28.3' W  Corner Pt #4  43°11.5' N - 082°18.7' W
Total Track Length:  83.0 NM.
```

Leg #	Starting Position	Course D True	D Mag	Leg Dist	Tot Dist	Leg Time	Total Time
1	43°11.9' N 082°19.5' W	353°T	360°M	11.0	11.0	00:07:19	00:07:19
2	43°22.8' N 082°21.3' W	263°T	270°M	1.0	12.0	00:00:40	00:08:00
3	43°22.7' N 082°22.7' W	173°T	180°M	11.0	23.0	00:07:19	00:15:19
4	43°11.8' N 082°20.9' W	263°T	270°M	1.0	24.0	00:00:40	00:16:00
5	43°11.7' N 082°22.2' W	353°T	360°M	11.0	35.0	00:07:19	00:23:19
6	43°22.6' N 082°24.1' W	263°T	270°M	1.0	36.0	00:00:40	00:24:00
7	43°22.5' N 082°25.4' W	173°T	180°M	11.0	47.0	00:07:19	00:31:20
8	43°11.5' N 082°23.6' W	263°T	270°M	1.0	48.0	00:00:40	00:32:00
9	43°11.4' N 082°24.9' W	353°T	360°M	11.0	59.0	00:07:19	00:39:20
10	43°22.3' N 082°26.8' W	263°T	270°M	1.0	60.0	00:00:40	00:40:00
11	43°22.2' N 082°28.1' W	173°T	180°M	11.0	71.0	00:07:19	00:47:19
12	43°11.3' N 082°26.3' W	263°T	270°M	1.0	72.0	00:00:40	00:47:59
13	43°11.2' N 082°27.7' W	353°T	360°M	11.0	83.0	00:07:19	00:55:19

Figure 1-11. Sample search instructions.

Helicopter crews were composed primarily of personnel from the participating air stations' normal complement. During later tests, the R&DC provided a fourth searcher when air stations were shorthanded. Most pilots and crewmembers had minimal experience using NVGs when the experiment began. The crews were encouraged to maintain motivational levels that would prevail during an actual SAR mission and to conduct operations as they normally would, except that the SRU did not divert from the assigned search pattern to confirm target sightings. Target confirmation was made through post-experiment data analysis. Helicopter crewmembers wore the ANVIS NVGs while searching and used radar to avoid severe weather.

Targets were anchored within the search area each night and were not moved until recovered. SRU crews knew which target type was deployed each night but were never told the target locations or the exact number of targets in the search area. Crews were directed to report to an onboard data recorder any sighting of an object that could possibly be one of the search targets.

Each night, a data recorder from the field test team accompanied each SRU to record target detections, human factors data, and crew comments. Crew information was recorded on the SRU Information Form (figure 1-12). Target detections, crew comments, and general observations were recorded on the NVG Detection Log (figure 1-13).

When a target was sighted, lookouts immediately reported its relative bearing (as a "clock position"), its estimated range (in yards, nautical miles (nmi), or distance to the horizon), and a brief description to the data recorder. The recorder logged the detection time, relative bearing, range, moon visibility, lookout position, and crew remarks. The times were all synchronized to Global Positioning System (GPS) time. Data recorders did not assist in the search effort.

The aircraft and workboat data recorders both logged on-scene environmental conditions, including general weather descriptions such as rain, cloud cover, whitecaps, cloud ceiling, and visibility. Figure 1-14 is a sample Environmental Conditions Summary Form. A MiniMet™ environmental buoy moored in the search area provided additional environmental data. The buoy relayed information to the R&D Control facility over an UHF-FM data link at 20-minute intervals. This information was also stored as a backup in an internal memory on board the buoy. Figure 1-15 is an example of the data messages received from the MiniMet™ buoy. Two of every three messages relayed wind data, water temperature, and air temperature at 10 and 40 minutes past the hour. The third message contained wave spectrum data including significant waveheight (Hs). The buoy was the preferred environmental data source when multiple sets of information were available.

SRU INFORMATION FORM

DATE ________________ DGPS TRANSCEIVER CODE ________________

SRU TYPE _____________

COAST GUARD COMMAND ________________________

NAVIGATION INPUTS USED
(check all that apply)

TACAN ____ VOR/DME ____ INS ____ LORAN-C ____ RDF ____ RADAR ____ DEAD REC. ____ GPS____

CREW NAMES

POSITION	NAME	RANK	FUNCTION	EXPERIENCE W/NVG (hr)
A				
B				
C				
D				

SKETCH (show positions)

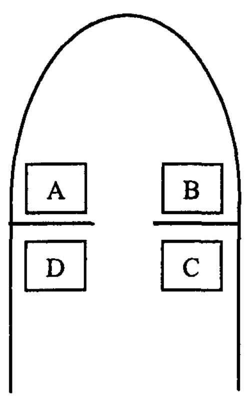

Figure 1-12. SRU information form.

NVG DETECTION LOG

AIRCRAFT #__________ DATE__________ DAY__________ SEARCH_____ of_____

TRANSCEIVER NO. ______ SEARCH START TIME ______ SPEED ______

AIRCRAFT EXT. LIGHTING ______ SEARCH END TIME ______

SEARCH DURATION ______ ALTITUDE ______

EVENT/ DETECTION NO.	TIME (HH:MM:SS)	SIGHTING RANGE (rel. to horiz.)	RELATIVE BEARING (clock)	MOON VISIBLE? (Y/N)	SRU HEADING (deg M)	LOOKOUT/ POSITION	REMARKS (visibility, precip., fog, target appearance, etc.)

RECORDER:__________

Figure 1-13. NVG target detection log.

ENVIRONMENTAL CONDITIONS SUMMARY

REPORTING UNIT: DATE:

TIME	SURFACE WIND		CLOUD COVER (tenths)	MOON VISIBLE (Y/N)	VISIBILITY (nmi)	WEATHER DESCRIPTION (clear, rain, fog, etc.)	SEA STATE			RELATIVE HUMIDITY (%)	AIR TEMP (°C)	WATER TEMP (°C)
	TRUE SPEED (knots)	TRUE DIRECTION (deg M)					HS* (ft)	WHITE CAPS (N/S/M)	SWELL DIR (deg M)			
**METHOD OF MEASUREMENT												

*Significant waveheight.

**NOTE: Method may be scientific (anemometer, radar, psychrometer, etc.) or an estimate. Indicate method used to measure each parameter.

OBSERVER: ____________

Figure 1-14. Sample environmental conditions summary form.

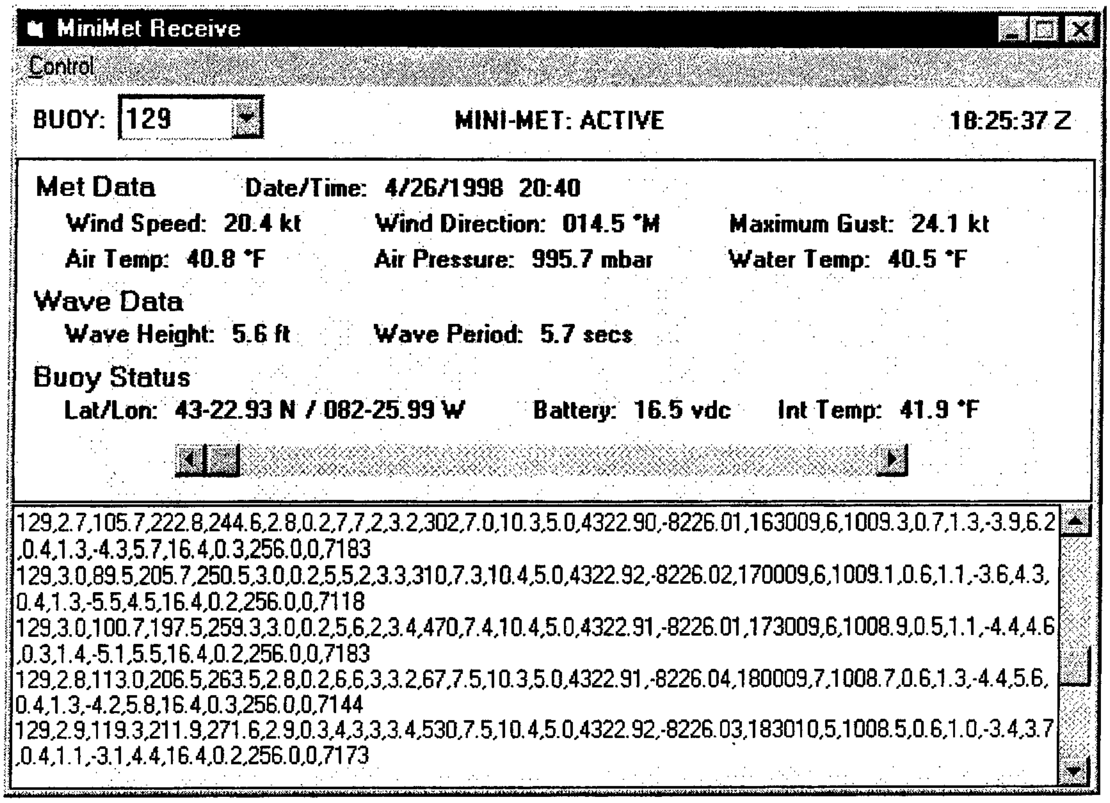

Figure 1-15. Sample MiniMet™ data message.

1.6.6 Tracking and Reconstruction

Target locations and SRU positions were monitored by a carry-on, self-contained Differential Global Positioning System (DGPS) tracking and position reporting system. The tracking system consisted of a GPS receiver, a differential signal receiver, and a VHF transceiver with an internal packet modem. The system computed aircraft position, logged it continuously, and transmitted it to a base system. Figure 1-16 diagrams the onboard DGPS tracking and reporting system.

The base station, located at R&D Control, consisted of a VHF receiver tied into a computer containing software to display and store the incoming data. The equipment automatically received and recorded positions every 10 seconds.

Search tracks and target locations were reconstructed using the recorded target and SRU position data to generate a hard-copy printout. Analysts used the SRU positions, each associated with a time mark, with the NVG Detection Logs, to determine which targets were detected and which were missed during the search. Figure 1-17 depicts a typical HH-65A executed search. A target was considered an opportunity for detection on any given search leg if the SRU passed it within a distance of 1.5 times the maximum lateral range of detection. This rule evolved during previous NVG experiments and produced sufficient data to identify an asymptotic limit to the NVG lateral range curve (discussed in section 2) without adding a large number of meaningless (i.e., very long-range) target misses to the data set.

When a target report correlated with the position of a known target, it was considered a detection. Analysts performed this correlation by using the time of a given detection in the NVG Detection Log to locate the SRU along its trackline. The range and bearing data for the reported detection were then compared to target positions on the tracking system plot, and a detection/non-detection determination was made. A miss was recorded for any target detection opportunity not correlated with a logged detection. An accurate lateral range measurement was then recorded for each detection or miss from the closest point of approach (CPA) for each target on each leg. These detections and misses, along with associated search parameters and environmental conditions, were compiled into computer data files for analysis. Data files from this experiment are listed in appendix A.

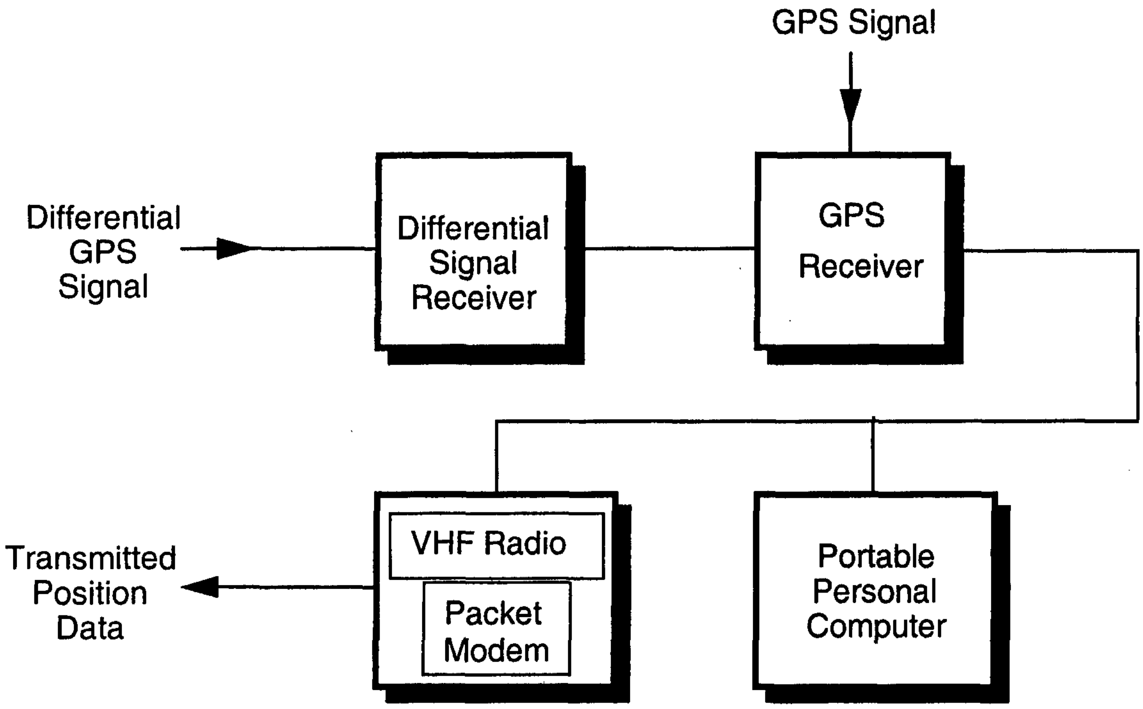

Figure 1-16. Onboard DGPS tracking/reporting system.

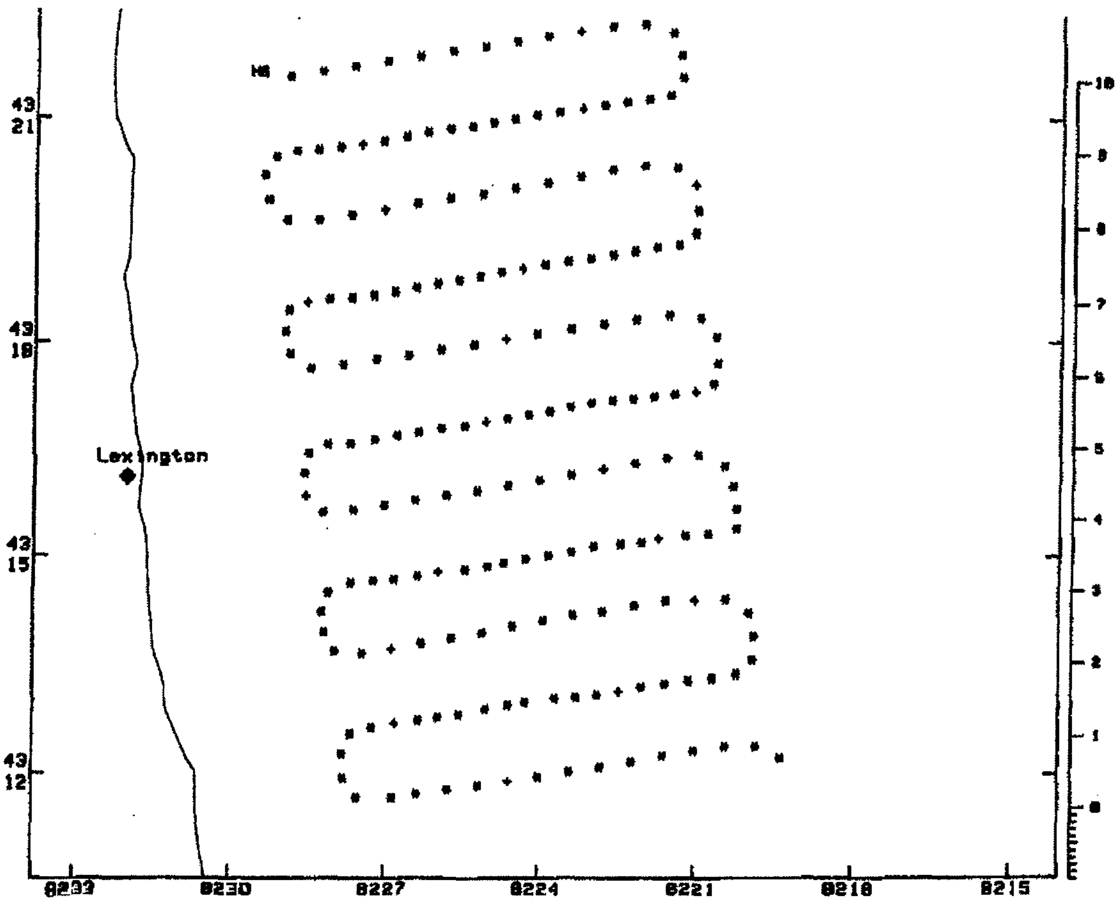

Figure 1-17. Example of HH-65A executed search pattern.

1.6.7 Test Parameters

Thirty potentially significant search parameters were recorded for each target detection opportunity. The parameters can be broadly classified as relating to the target, SRU, environment, ambient light, and human factors. The search parameters and their units of measure are as follows (actual logged values are shown in parentheses):

	PARAMETER	UNIT OF MEASURE
	TARGET	
1.	Target Type	(1) Skiff (2) Life Raft (3) PIW
2.	Target Subtype	Skiffs: (0) 18 ft (1) 21 ft with bimini top Rafts: (-1) with retro-reflective tape PIW: (3) unlighted
3.	Lateral Range[2]	Nautical Miles
4.	Target Relative Bearing	Clock Bearing from aircraft (1-12), when initially detected
	SRU	
5.	Illuminator Equipped	(0) Not equipped (1) Illuminator-equipped
6.	Artificial Illumination Source	(0) None (0.5) One hover light (1) Laser (IR) (1.5) Laser (IR) and (1) hover light (2) Both hover (landing) lights (3) Parachute flares (4) Laser (IR) and both hover (landing) lights
7.	Search Speed	Knots
8.	Search Altitude	Feet
	ENVIRONMENT	
9.	Precipitation Level[3]	(0) None (1) Light (2) Moderate (3) Heavy
10.	Visibility	Nautical Miles
11.	Windspeed	Knots

2 Defined in section 2.

3 Subjective definition where 0=none and 3=heavy rain.

	PARAMETER	UNIT OF MEASURE
12.	Cloud Cover	Tenths of sky obscured
13.	Significant Waveheight	Feet
14.	Whitecap Coverage[4]	(0) None (1) Few (2) Many
15.	Relative Wave Direction	At time of detection, or at CPA (for missed targets); Wave fronts travelling: (0) Across line-of-sight to target (1) Towards SRU (2) Away from SRU
16.	Relative Humidity	Percent
17.	Air Temperature	Degrees Celsius
18.	Water Temperature	Degrees Celsius
	AMBIENT LIGHT	
19.	Relative Azimuth of Shore Lights	At time of detection, or at CPA (for missed targets); Light source is located: (0) Across line-of-sight to target (1) Along line-of-sight to target (-1) Opposite line-of-sight to target
20.	Shore Light Level	Rural (0)/ suburban (1)/ urban (2)
21.	Moon Elevation	Degrees above or below the horizon
22.	Moon Visible (from SRU)	Yes (1)/No (0)
23.	Relative Azimuth of the Moon (Visible or Not Visible)	At time of detection, or at CPA (for missed targets); Moon is located: (0) Across line-of-sight to target (1) Along line-of-sight to target (-1) Opposite line-of-sight to target
24.	Relative Bearing of the Moon	Clock bearing of moon (visible or not) relative to aircraft heading
25.	Moon Phase[5]	0-1, in tenths

---

4 Subjective evaluation by pilots using NVGs concerning the quantity of whitecaps: 0=none; 1=light to moderate whitecaps that do not significantly interfere with the search; 2=heavy whitecaps that normally degrade search conditions.

5 Phase of moon based on nautical almanac – percentage of moon face showing rounded to the nearest tenth.

	PARAMETER	UNIT OF MEASURE
	HUMAN FACTORS	
26.	Lookout Position†	Seat location on board SRU (1) Co-pilot (2) Pilot (3) Rescue swimmer (4) Flight mechanic
27.	Lookout ID†	Individual identifier
28.	Lookout NVG Experience†	Hours
29.	Time on Task[6]	Hours (actually searching)
30.	Number of crewmen	Number of aircrewmen on NVGs

†Items 26 through 28 were recorded for detections only.

6 Number of hours involved in searching with NVGs.

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SECTION 2

ANALYSIS APPROACH

2.1 MEASURE OF SEARCH PERFORMANCE

Sweep width, *W*, a single-number summation of a more-complex range/detection probability relationship, is the primary performance measure used by SAR mission coordinators to plan searches. Because this NVG evaluation is intended to support improved Coast Guard SAR mission planning, sweep width was chosen as the measure of search performance to be analyzed.

Sweep width is computed from an experimentally determined lateral range curve, which plots probability of detection (P_D) versus lateral range. Since most search plans involve parallel track searches, the CPA is equivalent to lateral range. See figure 2-1.

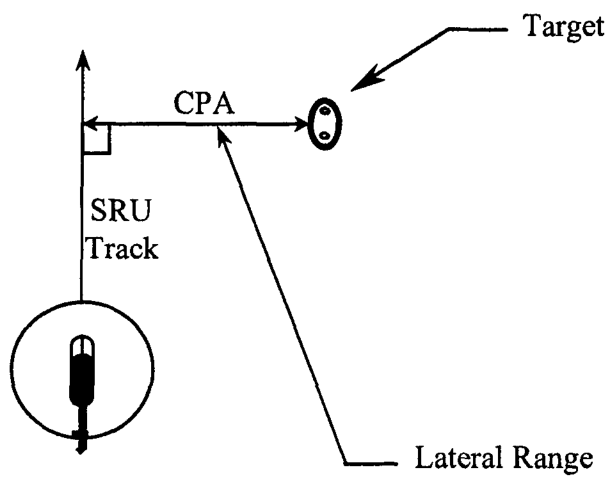

Figure 2-1. Definition of lateral range.

Mathematically, W is the integral of P_D as a function of lateral range over all possible lateral range values. Lateral ranges beyond some maximum value are associated with zero P_D and do not contribute to the sweep width value. (Variables and mathematical expressions normally appear in italics.)

Thus,

$$W = \int_{-\infty}^{+\infty} P_D(x)dx \qquad \text{(equation 2.1)}$$

where:

W = Sweep width,

x = Lateral range (i.e., CPA) to targets of opportunity (see figure 2-1), and

$P_D(x)$ = Target detection probability at lateral range x.

Figure 2-2 through figure 2-4 illustrate three important sweep width concepts. Figure 2-2 shows a typical visual search lateral range curve. The curve plots the probability of detecting the target as a function of lateral range. In the diagram, Max R_D is the maximum detection range.

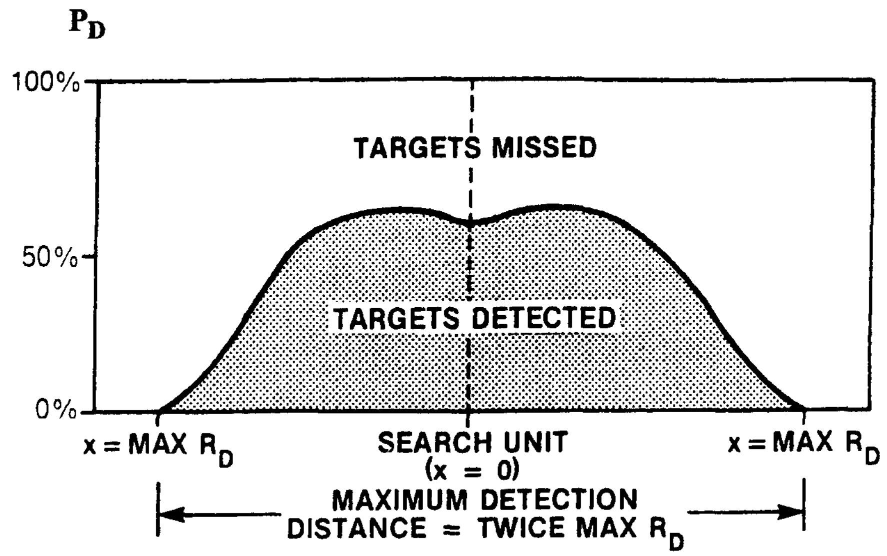

Figure 2-2. Typical lateral range curve.

The curve should not be interpreted as the probability of detection as a function of actual range at the time of target detection. While the range value at detection is important, it has no meaning when a target is not detected. The critical range value for undetected targets is their lateral range at CPA. Because of the need to compare the range of detections and missed detection opportunities on an equivalent basis, the lateral range is computed for all target detection opportunities.

Figure 2-3 illustrates a second important concept related to sweep width. As previously stated, W is the area under the lateral range curve, which plots probability of detection versus lateral range. The symmetry of the curve, as drawn, implies equivalent visual detection probabilities on both sides of the SRU (not always true). The shaded areas illustrate that the sweep width value divides the search path into regions where the number of targets missed inside the sweep width range (region A) equals the number of targets detected outside the sweep width range (region **B**). It is important to note that some targets are missed within the sweep width, and some target detections occur beyond the sweep width.

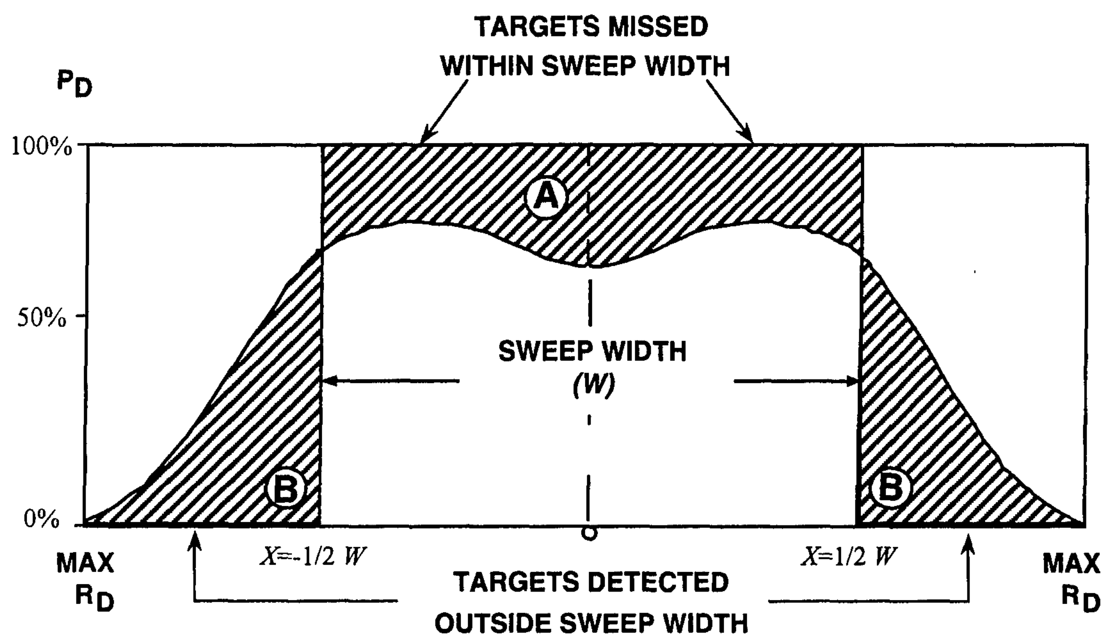

Figure 2-3. Targets detected vs. targets missed.

Figure 2-4 illustrates the case in which an aircraft SRU is flying a straight search track. The sweep width is much less than twice the maximum lateral detection range. This reflects the lateral range curve concept, where P_D approaches zero at the maximum possible CPA detection range. Therefore, the area under the lateral range curve contributes only minimally to sweep width when the P_D is near zero.

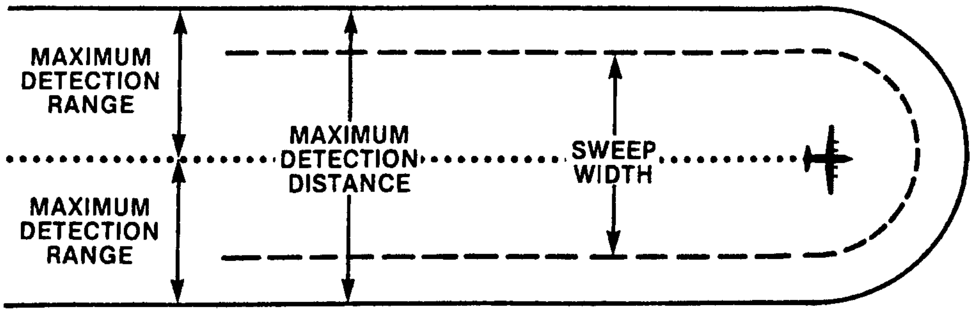

Figure 2-4. Maximum detection distance vs. sweep width.

(Koopman, 1980) contains a detailed mathematical development of the principles discussed here and an explanation of sweep width.

2.2 ANALYSIS OF SEARCH DATA

This analysis addresses four primary questions:

1. Which of the search parameters (identified in section 1.6.7) exerted significant influence on the detection performance of the SRUs against the target types tested?
2. What are the NVG sweep width estimates for various combinations of significant parameters identified in question 1? This includes a detailed comparison of HH-60J and HH-65A SRU historical search performance capability.
3. What guidance for NVG use on board U.S. Coast Guard SRUs can be developed based on the quantitative analysis performed in question 1 and the subjective comments and observations obtained from experiment participants?
4. What are the effects of active, onboard illumination on target detectability and sweep width? This includes a comparison of landing lights versus the experimental illuminator.

2.2.1 Development of Raw Data

After each experiment, the tracking system plots (figure 1-17) and NVG Detection Logs (figure 1-13) were used, as described in section 1.6.6, to determine which SRU-target encounters were valid detection opportunities and which of those opportunities resulted in successful target detections. Analysts listed each target detection opportunity on a raw data sheet along with a detection/miss indicator. Values for the search parameters listed in section 1.6.7 were obtained for each detection opportunity by consulting appropriate logs and environmental data buoy messages. A separate raw data sheet was completed for each search conducted by each SRU. The contents of these raw data sheets were entered into computer spreadsheets, creating a separate data file for each SRU for each test night. One data file was created for each SRU/target type combination. These raw data files served as input to all subsequent data sorting and statistical analysis routines. Hard copies of the data files for the HH-65A field test series are provided in appendix A. HH-60J and HH-3 data from earlier field tests can be found in (Robe, Raunig, Plourde, and Marsee, 1992; Robe and Plourde, 1993; and McClay, Robe, Raunig, and Marsee, 1995).

2.2.2 Data Sorting and Statistics

Once the raw data files were entered into the computer, basic statistics were obtained to characterize the data sets. A commercial statistics and graphics software package was used to perform this phase of the data analysis.

Various statistics software routines were used to produce simple statistics, histograms, and scatter plots showing the range of search parameter values and the combinations present in each data set. The minimum, maximum, and mean values for each search parameter contained in the data sets were obtained to determine the range of search conditions represented. Scatter plots of combinations of search parameters represented were also produced.

After the data sets were characterized in this manner, logistic multivariate regression analysis was used to determine which search parameters exerted a significant influence on NVG detection performance and to develop lateral range curves from which NVG sweep widths could be computed.

2.2.3 LOGIT Multivariate Regression Model

Multivariate logistic regression models have proven to be appropriate analysis tools for fitting U.S. Coast Guard visual search data where the dependent variable is a discrete response (e.g., detection/no detection). The detection data from this NVG evaluation were analyzed using commercial logistic regression software. See (SPSS, Inc., 1997) for more information on the software.

The logistic regression model is useful in quantifying the relationship between independent variables, x_i, and a probability of interest (P_D, in this case, the probability of detecting a target). The independent variables can be continuous (e.g., range, waveheight, windspeed) or discrete (e.g., moon visible or not (1 or 0)). The logistic regression model proved to be an effective means of identifying statistically significant search parameters and of quantifying their influence on the target detection probability versus lateral range relationship. This functional relationship, commonly referred to as the lateral range curve, provides a basis for computing sweep widths.

The equation for target detection probability that is used in the logistic regression model is:

$$P_D = 1/(1+e^{-\lambda}) \qquad \text{(equation 2.2)}$$

where:

P_D = target detection probability for a given searcher - target encounter,

λ = $a_0 + a_1 x_1 + a_2 x_2 + a_3 x_3 + ... + a_n x_n$,

a_i = fitting coefficients (determined by computer program), and

x_i = independent variable values.

The maximum log-likelihood method is employed in the logistic regression model to optimize values of the coefficients, a_i. The independent variables (model inputs) can be discrete or continuous types. The statistical significance of these independent (explanatory) variables as predictors of the response are evaluated using the t-statistic outputs of the regression package.

The logistic regression model was used interactively with each data set to arrive at a fitting function that contained only those search parameters found to exert a statistically significant influence on the target detection response. These fitting functions were solved for representative sets of search conditions to generate lateral range curves, and NVG sweep widths were computed from the integrals of these lateral range curves.

Additional theoretical development details of logistic regression methodology are given in (Cox, 1977).

A logistic regression model has the following advantages over other regression models and statistical methods:

1. It implicitly contains the constraint that $0 \leq P_D \leq 1.0$; a linear model does not contain this constraint, unless it is specifically added, and thus significantly increases the computational load.
2. It is analogous to normal-theory linear models; therefore, analysis of variance and regression implications can be drawn from the model.
3. It can be used to observe the effects of several independent or interactive parameters that are continuous or discrete.
4. A regression technique is better than non-parametric hypothesis testing, which does not yield quantitative relationships between the probability in question and the values of independent variables.

One limitation of a basic logistic regression model is that the calculation produces a monotonically decreasing function of the dependent variable (P_D) from the independent variables. However, this limitation has not proven to be a problem when analyzing helicopter NVG searches.

2.2.4 Sweep Width Calculations Using Data Subset Techniques

Before NVG sweep widths were computed for this report, the LOGIT analysis presented in section 2.2 was used with the data set for each SRU/target type combination. For each target type, data subsets corresponding to significant variable groupings were analyzed and, when possible, the sweep width was calculated from the integral of the lateral range curve. These subsets reflect distinct sets of search conditions.

The data subset analysis procedure, and the subsequent process of generating lateral range curves and computing sweep widths, is described in the following example using the data set for PIW searches from the Fall 1997 HH-65A NVG field test.

STEP 1: Identification of Data Subsets. LOGIT analysis of this data set indicated that lateral range, moonlight, and illumination exerted a statistically significant influence on target detection probability. Since *MOONVIS* and *LASER* are binary variables, 0 implies not visible or off, and 1 implies visible or on. The PIW data were separated by both variables into four separate data subsets. The resulting subsets were:

MOONVIS=0 and *LASER*=0,

MOONVIS=0 and *LASER*=1,

MOONVIS=1 and *LASER*=0, and

MOONVIS=1 and *LASER*=1.

If a continuous variable such as *windspeed* was identified as significant, windspeed subsets could either be separated out or used as a regression variable.

STEP 2: Generation of Lateral Range Curves. Four lateral range curve equations were generated by inputting the mean values of windspeed for both data subsets to the LOGIT-generated expression for target detection probability. The four distinct equations that resulted were then plotted for lateral range values between 0 and 1.2 nmi. This process yielded distinct plots of lateral range versus target detection probability, one for each combination of search parameters identified in step 1 above.

STEP 3: Calculation of Sweep Widths. Sweep width values were calculated for both sets of search conditions by integrating the applicable LOGIT expressions for target detection probability over the limits 0 to 1.2 nmi. The integral of the LOGIT function (equation 2.2) is:

$$A = \frac{1}{a_1} \ln\left(1 + e^{a_1 x_1 + c}\right) \Bigg|_{x_1 = \text{a lower limit of lateral range}}^{x_1 = \text{an upper limit of lateral range}} \qquad \text{(equation 2.3)}$$

where:

A = Area under the LOGIT-fitted curve,

a_1 = Value of the lateral range coefficient determined by the LOGIT regression analysis,

x_1 = Lateral range, and

c = $a_0 + a_2 x_2 + a_3 x_3 + \ldots + a_n x_n$ for specified values of search parameters $x_2, x_3, \ldots x_n$.

The lateral range coefficient is always negative (a_1<0). Therefore, as is normally the case, when the lower limit of lateral range is zero and the upper limit is $+\infty$, the integral simplifies to:

$$A = \frac{-1}{a_1} \ln(1 + e^c)$$

When the lateral range curve has approximately the same shape on either side of the SRU, sweep width is usually defined as two times the value of the area A computed above.

Thus,

$$W = 2A = \frac{-2}{a_1} \ln(1 + e^c)$$

Methods similar to those illustrated in the above example were used to provide a reliability check on the sweep widths calculated for each SRU/target type combination in this report using a more-sophisticated, combined data technique, described in the next section.

2.2.5 Sweep Width Calculations – Combined Data Technique

Use of modern statistical analysis packages allows the LOGIT analysis, presented above, to proceed using specially coded values for those input variables found to be statistically significant predictors of P_D.

Distinct sets of search conditions often exist during field tests that tend to be correlated by chance. This causes difficulties with small data subset analysis. For example, over a three-week field test period, moonlit nights might occur on nights with high wind and wave conditions, while calmer conditions might exist on non-moonlit nights. Since high wind and wave conditions are associated with lower sweep widths, the improvement in W due to moonlight could be offset by the degradation in W caused by higher wind and wave conditions. Thus, the offsetting true effects of moon and wind parameters could be miscalculated in this small data subset example. Mixing data from several field tests together is more likely to provide (by chance) a set of environmental conditions that can be more accurately analyzed. In the above example, this would be no-moon with high and low wind and wave conditions and moonlight with high and low wave conditions.

In addition, a larger data set provides more degrees of freedom for a statistical analysis and regression coefficients can be computed with smaller confidence intervals (less uncertainty). High winds make search conditions poorer whether or not the moon is visible. When the moon is visible, there is more light available and NVG performance improves. A more accurate estimate of the individual contribution that each statistically significant variable contributes to sweep width can be calculated using a larger data set rather than splitting the data into subsets.

Interaction effects between variables can also occur and can be investigated more thoroughly using a combined data model. Interactions between variables can be explained as follows:

Suppose it is known that either moonlight or the use of illumination significantly improve sweep width when compared to dark conditions, and that the effects seem to be approximately equivalent. On moonlit nights, one wants to determine if artificial illumination provides additional benefit. The answer can be found using a cross-product term in the logistic regression model for those situations where an illuminator is used on moonlit nights. By examining the magnitude and sign of the three logistic regression coefficients (moon, illuminator, and the moon-illuminator cross product), one can determine the apparent effects that no moon, moon only, illuminator only, and illuminator plus moon conditions have on typical search conditions. Additionally, these effects can all be compared at common weather conditions, such as 5-knot winds, 1-ft seas, and no rain.

The analysis proceeds as explained in section 2.2.4 except that the model is not split into subsets for analysis purposes.

STEP 1: Identification of Statistically Significant Variables. Logistic regression analysis is used to determine those variables that influence target detection probability. The regression coefficients are calculated using the entire data set, coded for each target type.

STEP 2: Generation of Lateral Range Curves. Lateral range curve equations are generated by inputting the mean values and/or any values of the independent variables that are well represented by the data set. This process yields distinct plots of lateral range versus target detection probability for each chosen combination of the independent variables.

STEP 3: Calculation of Sweep Widths. Sweep width values are calculated as in section 2.2.4, step 3, except that the regression model contains the coded values of the variables and their appropriate regression coefficients.

2.3 SWEEP WIDTH UNCERTAINTY

The introduction to the logistic regression process (see equation 2.3) described only an overall lateral range coefficient and a constant term. The constant term might be the sum of a constant and one or more statistically significant environmental variables, along with their coefficients, as determined by the regression software. The following description more fully explains the uncertainties encountered in real-world problems. The choice of four generic environmental variables is used here to represent a problem of moderate complexity and could be extended for situations with larger data sets and more statistically significant variables.

2.3.1 Sweep Width Model Extension

As an extension to the model, the logistic regression equation, which determines the lateral range curve, has variables that affect both the height and slope of the curve. Variables that affect the height and horizontal position of the lateral range curve appear as terms that contribute to the constant coefficient. Variables that affect the slope of the lateral range curve appear as products of lateral range and contribute to the lateral range coefficient. Any individual logistic regression-derived lateral range curve is completely characterized by two numbers, the lateral range coefficient and the constant coefficient.

When the lateral range coefficient remains fixed and the constant coefficient is increased, there is one major effect: probability of detection rises at all lateral ranges. Visually, this looks like raising the entire curve while at the same time moving it to the right. (A similar effect can be seen in figure 2-5.) It is important to notice that at any given P_D, the slope of the lateral range curve remains the same as it was before the constant coefficient was increased.

When the constant coefficient remains fixed and the lateral range coefficient becomes less negative (moves closer to zero), the slope of the lateral range curve becomes less steep, but the height of the curve at zero lateral range remains constant. (A similar effect can be seen in figure 2-6.) Both of the changes discussed in the last two paragraphs result in an increase in computed sweep width.

In equation 2.4, below, A_0, A_1*B, and A_2*C appear in the logistic regression constant term, and A_3, A_4*D, and A_5*E appear as products of lateral range. The B, C, D, and E variables represent <u>specific levels</u> of four <u>generic</u> environmental variables, which were found to be statistically significant through logistic regression analysis. Examples might be windspeed = 5 knots, waveheight = 2 ft, moon is not-visible, and landing lights are on, or: B=5, C=2, D=0, E=1.

Probability of detection, P_D (LR, B, C, D, E), is a function of lateral range, LR, and the observed levels of environmental parameters, B, C, D, and E. It involves the following expression:

$$P_D = \frac{e^{(A_0+A_1*B+A_2*C+LR*(A_3+A_4*D+A_5*E))}}{1+e^{(A_0+A_1*B+A_2*C+LR*(A_3+A_4*D+A_5*E))}} \qquad \text{(equation 2.4)}$$

This expression simplifies to:

$$P_D = \frac{1}{1+e^{-(A_0+A_1*B+A_2*C+LR*(A_3+A_4*D+A_5*E))}}$$

The six coefficients, $(A_0 - A_5)$ in this example, along with their standard errors (SE), would be calculated by the statistical program.

Sweep width is the integral of the lateral range curve with respect to lateral range. When the lateral range curve has left/right symmetry, the sweep width (W) integral, based on integrating P_D with respect to LR from minus to plus infinity, works out as follows:

$$W = \int_{-\infty}^{+\infty} Pb(LR,B,C,D,E)dLR = 2 * \int_{0}^{+\infty} Pb(LR,B,C,D,E)dLR$$

$$W = 2 * \int_{0}^{+\infty} \frac{dLR}{1+e^{-(A_0+A_1*B+A_2*C+LR*(A_3+A_4*D+A_5*E))}}$$

$$W = \frac{-2}{A_3 + A_4 * D + A_5 * E} * \ln\left(1 + e^{(A_0+A_1*B+A_2*C)}\right)$$

2.3.2 Sweep Width Estimation Error Example

The following figures and tables are intended to demonstrate the effects of regression coefficient errors on the sweep width estimate.

Figure 2-5 and figure 2-6 illustrate five lateral range curves. These lateral range curves have been developed from a simple model with a constant term, A_0, and a lateral range coefficient, A_3. For the sake of simplicity, environmental variables are omitted. The sweep width integral reduces to:

$$W = \frac{-2}{A_3} * \ln\left(1 + e^{A_0}\right)$$

In both figures, the center curve is darkened and represents a typical situation where the constant term of the expression, $A_0 = 2.2$, and the lateral range coefficient, $A_3 = -4$. In this section, for ease of explanation, A_0 and A_3 are assumed to be exactly known.

In figure 2-5, the four non-bolded curves represent errors in the estimation of the constant coefficient, which affects the curve height and horizontal position. The curve marked +20% represents a 20-percent overestimation of the constant coefficient (1.2 * 2.2), the +10% curve, a 10-percent overestimation, (1.1 * 2.2), -10%, a 10-percent underestimation (0.9 * 2.2), and -20%, a 20-percent underestimation (0.8 * 2.2).

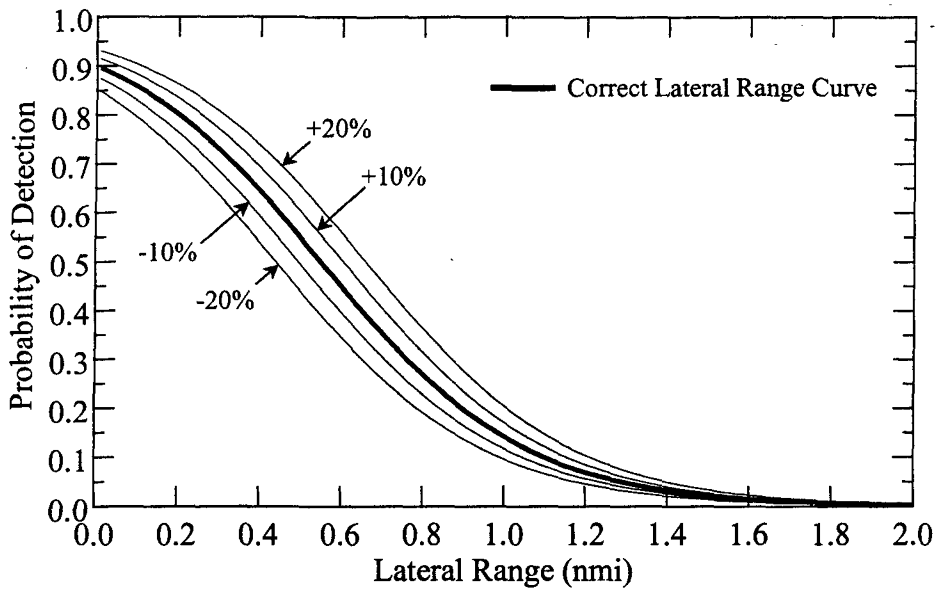

Figure 2-5. Effects of estimation errors in the constant coefficient.

Table 2-1 lists the effects on the estimation of sweep width caused by estimation errors in the constant coefficient as pictured in figure 2-5.

Table 2-1. Sweep width errors caused by constant coefficient estimation errors.

A_0=Const$_{coef}$=2.2; A_3=LR$_{coef}$= -4

Constant Coefficient Curve	Calculated Sweep Width (nmi)	Sweep Width Error
+20%	1.35	+17.5%
+10%	1.25	+8.7%
CORRECT	**1.15**	**0**
-10%	1.05	-8.5%
-20%	0.96	-16.8%

In figure 2-6, the four non-bolded curves represent errors in the estimation of the lateral range coefficient, which affects the slope of the lateral range curve. The +20% curve represents a 20-percent overestimation of the absolute value of the LR coefficient, (1.2 * -4.0). Notice that this causes a lowering of the curve approximately proportional to lateral range, but that the P_D at zero lateral range stays at about 90%. The +10% curve represents a 10-percent overestimation (1.1 * -4.0), curve –10%, a 10-percent underestimation (0.9 * -4.0), and curve –20%, a 20-percent underestimation (0.8 * -4.0).

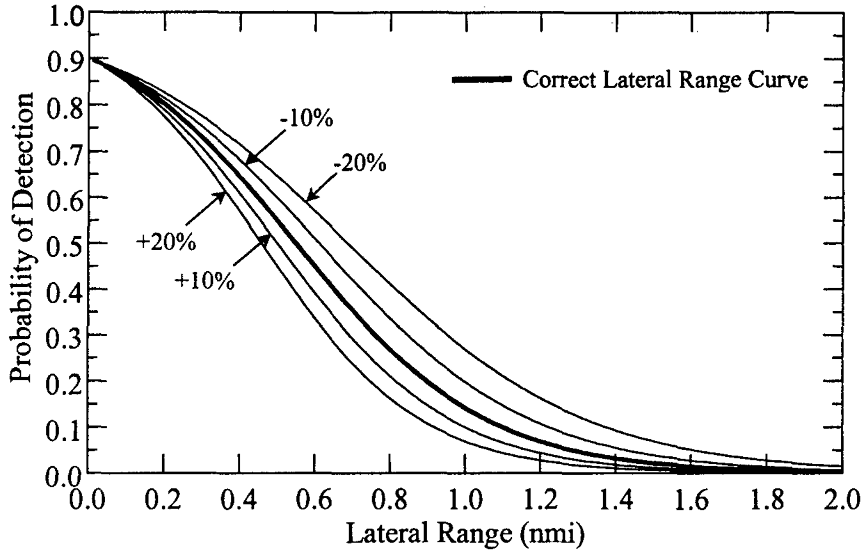

Figure 2-6. Estimation errors in lateral range coefficient.

Table 2-2 lists the effects on sweep width caused by estimation errors in the lateral range coefficient as pictured in figure 2-6.

Table 2-2. Sweep width errors caused by LR coefficient estimation errors.

A_0=Const$_{coef}$=2.2; A_3=LR$_{coef}$= -4

Lateral Range Coefficient Curve	**Calculated Sweep Width (nmi)**	**Sweep Width Error**
+20%	0.96	-16.7%
+10%	1.05	-9.1%
CORRECT	**1.15**	**0**
-10%	1.28	+11.1%
-20%	1.44	+25.0%

One interesting observation from the above typical example is that errors in the constant coefficient tend to cause approximately symmetric errors about the correct sweep width value, while errors in the lateral range coefficient do not. The asymmetry becomes increasingly large as deviation from the correct lateral range coefficient value increases.

2.3.3 Determining Sweep Width Upper and Lower Uncertainty Bounds

The previous section discussed errors in the "correct" values of the regression coefficients. In reality, we do not know the correct value for any coefficient. Therefore, we do not know the correct value of sweep width. We first estimate the mean values of the coefficients and their uncertainties using the statistical software. From these we estimate the mean value of sweep width and the uncertainty in the sweep width estimate. Two approaches were used to investigate the resulting uncertainty. The first method involves a Monte Carlo simulation and the second involves estimating the probability density function of sweep width.

Theory predicts that the sampling distribution of any given regression coefficient tends to be normal. A Monte Carlo simulation can be used to generate the sampling distribution of the sweep width based on the means (regression values) and standard errors of the regression coefficients (for example, A_0 through A_5). In a Monte Carlo simulation, a large number of replications of a random process are generated, based on the underlying probability distributions. Each regression coefficient is randomly generated, by the simulation, from a normal distribution with the mean value equal to the calculated coefficient and variance equal to the square of the standard error for that coefficient. A histogram of the resulting sweep width data gives insight into the statistical behavior of sweep width. The sampling distribution of sweep width was found to be asymmetric and right-tailed. Figure 2-7 illustrates such a curve plotting the sweep width results from a Monte Carlo simulation of 100,000 random draws of normally distributed values of the six regression coefficients.

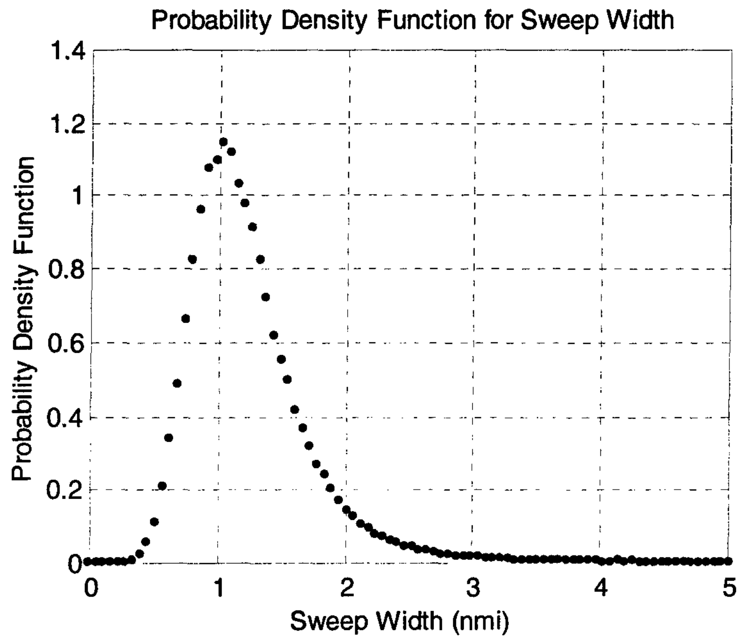

Figure 2-7. Sampling distribution of W resulting from Monte Carlo simulations.

The second approach used to investigate the uncertainty in the sweep width estimate involved the Gamma distribution. If a random phenomenon cannot assume negative values and generally has a unimodal shape, then chances are excellent that a member of the Gamma distribution family can model its behavior.

The Gamma probability density function has two parameters, *alpha* and *beta*. In order to duplicate the shape of the Monte Carlo-simulated sampling distribution of sweep width, one must set the Gamma distribution parameters at:

$alpha = (\mathrm{E}(W))^2/(\mathrm{StdDev}(W))^2$

and

$beta = (\mathrm{StdDev}(W))^2/\mathrm{E}(W)$

Notice that an estimate of both the expected value of sweep width, E*(W)*, and the uncertainty in sweep width, StdDev*(W)*, is required to obtain the *alpha* and *beta* parameters of the Gamma distribution. A discussion of how to estimate the StdDev(*W*) follows.

2.3.4 Estimating the Standard Deviation of Sweep Width

The following example uses the same arbitrary model with six regression coefficients to describe the process of estimating the uncertainty in sweep width based on uncertainties in the estimation of the regression coefficients as determined by the statistical software package. In order to estimate the uncertainty in sweep width caused by uncertainties (i.e., standard errors) in the estimation of the regression coefficients, the following partial derivatives of *W*, with respect to the six arbitrary regression coefficients (A_0 through A_5), can be calculated for specific values of the coefficients as follows:

$$\partial W / \partial A_0 = \frac{-2}{A_3 + A_4 * D + A_5 * E} / \left(1 + e^{-(A_0 + A_1 * B + A_2 * C)}\right)$$

$$\partial W / \partial A_1 = \partial W / \partial A_0 * B$$

$$\partial W / \partial A_2 = \partial W / \partial A_0 * C$$

$$\partial W / \partial A_3 = \frac{2}{(A_3 + A_4 * D + A_5 * E)^2} * \ln\left(1 + e^{(A_0 + A_1 * B + A_2 * C)}\right)$$

$$\partial W / \partial A_4 = \partial W / \partial A_3 * D$$

$$\partial W / \partial A_5 = \partial W / \partial A_3 * E$$

The standard deviation of *W*, (StdDev*(W)*) can be estimated from the standard errors (SE) in the coefficients (Ai, $i = 0$ to 5) as follows:

$$\text{StdDev}(W) = \sqrt{\sum_{i=o}^{5} (\partial W / \partial Ai * SE(Ai))^2}$$

Once StdDev*(W)* is computed, the *alpha* and *beta* parameters of the Gamma distribution can be calculated as in section 2.3.3.

2.3.5 Comparison of Gamma Distribution and Monte Carlo Simulation Methods of Estimating Sweep Width Uncertainty Bounds

If the standard deviation of sweep width is calculated, then the upper and lower bounds of uncertainty (or confidence interval) can be estimated. However, as with any regression model, the levels chosen for the environmental parameters must lie within the ranges that occurred while collecting the data set. For example, if wind varied from 2 to 18 knots during an experiment, using the model to predict sweep width at a windspeed of 30 knots would be unjustified.

Figure 2-8 shows an example of using the Gamma probability density function (solid line) to estimate the probability density function of sweep width and compares it to the Monte Carlo-generated sampling distribution of *W* (dotted line).

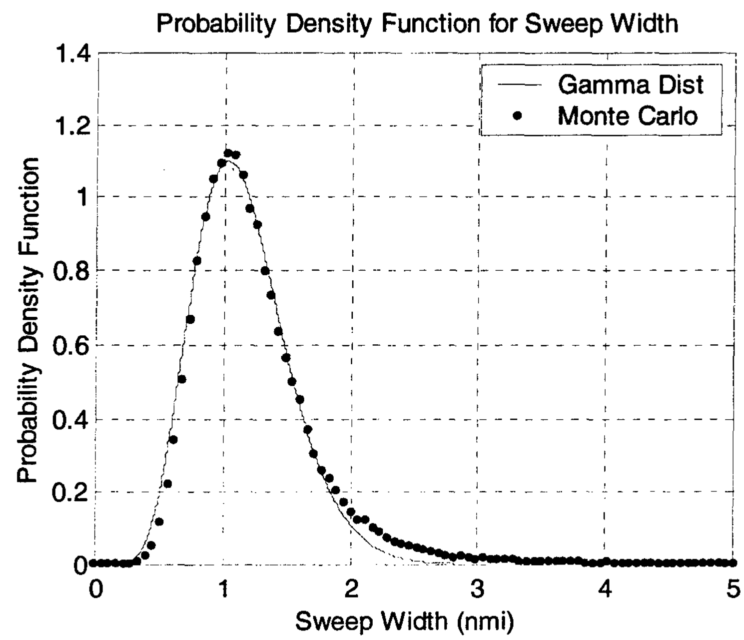

Figure 2-8. Gamma distribution vs. Monte Carlo simulation.

Once the calculation of the StdDev*(W)* is completed, a technique exists to rapidly calculate the asymmetric uncertainty bounds on sweep width given the standard errors in the regression coefficients calculated by the statistical software. Most standard commercial spreadsheets have an inverse Gamma function (GAMMAINV in Microsoft Excel). The *alpha* and *beta* parameters of the Gamma distribution are calculated as defined in section 2.3.3. If 90-percent confidence limits are desired, the lower and upper uncertainty bounds are at probability levels of 0.05 and 0.95 of the cumulative Gamma probability density function. In Excel they are calculated as:

Lower Uncertainty Bound on W = GAMMAINV (0.05, *alpha, beta*) and

Upper Uncertainty Bound on W = GAMMAINV (0.95, *alpha, beta*)

2.3.6 Comparison of Sweep Width Uncertainty Bounds Generated by Gamma Distribution and Monte Carlo Simulation

Table 2-3 compares the asymmetric confidence limits on W generated using the Gamma distribution assumption to those generated using the Monte Carlo simulation method. For consistency, A_0=2.2 and A_3=-4. These are the same values of the constant coefficient and lateral range coefficient used in the discussion of errors in sweep width caused by errors in A_0 and A_3.

Table 2-3. Example comparison of sweep width uncertainties.

Example - Coefficients, Partial Derivatives, and Standard Errors

A_0 =	+2.20	A_3 =	-4.00
$\partial W / \partial A_0$ =	+0.45	$\partial W / \partial A_3$ =	+0.29
SE(A_0) =	+0.55	SE(A_3) =	+1.00
W=E(W) =	+1.15	StdDev(W)=	+0.38
Var(W) = (StdDev(W))^2 =	+0.14		

Gamma Distribution Calculated Uncertainty Bounds of W

alpha = (E(W))^2 / Var(W) =	9.20
beta = Var(W) / E(W) =	0.13

	Uncertainty Bound	Uncertainty Bound - W
GAMMAINV .05 =	0.61	-0.55
GAMMAINV .95 =	1.84	+0.69
GAMMAINV .10 =	0.70	-0.45
GAMMAINV .90 =	1.66	+0.51

i.e., a 90-percent confidence interval for sweep width is [0.61, 1.84] and an 80-percent confidence interval for sweep width is [0.70, 1.66].

Monte Carlo-Generated Uncertainty Bounds

	Uncertainty Bound	Uncertainty Bound - W
.05 Lower	0.65	-0.50
.95 Upper	2.09	+0.94
.10 Lower	0.73	-0.48
.90 Upper	1.80	+0.65

i.e., a 90-percent confidence interval for sweep width is [0.65, 2.09] and an 80-percent confidence interval for sweep width is [0.73, 1.80].

Note that the Gamma distribution closely approximates the Monte Carlo sampling distribution of the sweep width in the center 80 percent. As a result of the ease of calculation, the Gamma distribution was used to estimate confidence intervals on sweep width for the remainder of this report.

SECTION 3

SUMMARY OF HH-65A NVG TEST DATA

3.1 GENERAL

The HH-65A test series yielded 1651 target detection opportunities, distributed among target types as depicted in table 3-1. In all, the HH-65A crews, which included both three- and four-person configurations, made 682 target detections. Figure 3-1 through figure 3-3 depict the breakdown of target detections by crew-reported clock bearing and crew position for the HH-65A. The majority of initial detections in both tests occurred from the pilot and co-pilot positions. The crew positions confirmed many of these detections.

Table 3-1. Data quantities (all HH-65A tests combined).

TARGET TYPE	LIGHTING CONFIGURATION	NUMBER OF OPPORTUNITIES	TOTALS
PIWs	without illumination	241	640
PIWs	with illuminator	75	
PIWs	with aircraft hover[7] lights*	226	
PIWs	with aircraft hover lights and illuminator*	94	
PIWs	with flares	4	
Rafts	without illumination	251	656
Rafts	with illuminator	334	
Rafts	with aircraft hover lights*	43	
Rafts	with aircraft hover lights and illuminator*	23	
Rafts	with flares	5	
Skiffs	without illumination	160	355
Skiffs	with illuminator	73	
Skiffs	with aircraft hover lights*	73	
Skiffs	with aircraft hover lights and illuminator*	34	
Skiffs	with flares	15	
			1651

*One or both hover lights on

[7] The term "hover lights" is used to describe the aircraft's trainable landing lights when pointed downward.

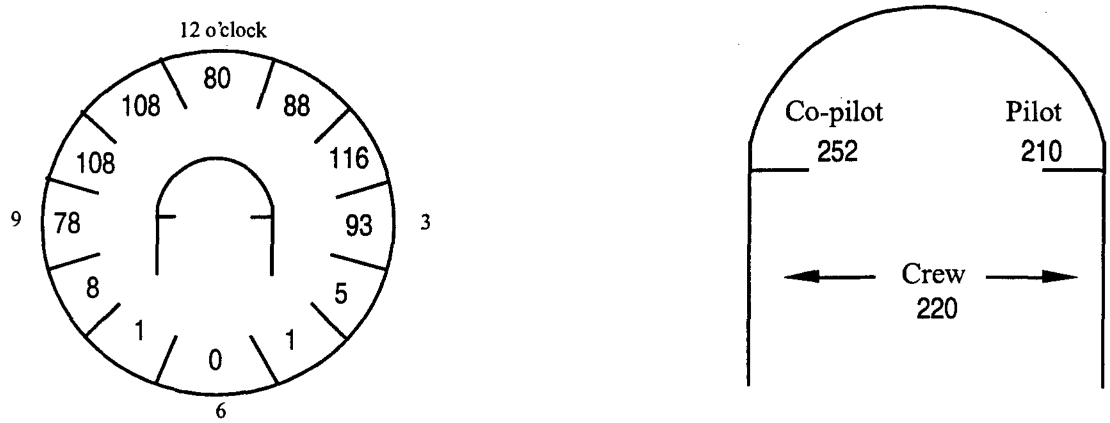

Figure 3-1. Number of initial detections by clock bearing and crew position (all tests combined, 3- and 4-person crews).

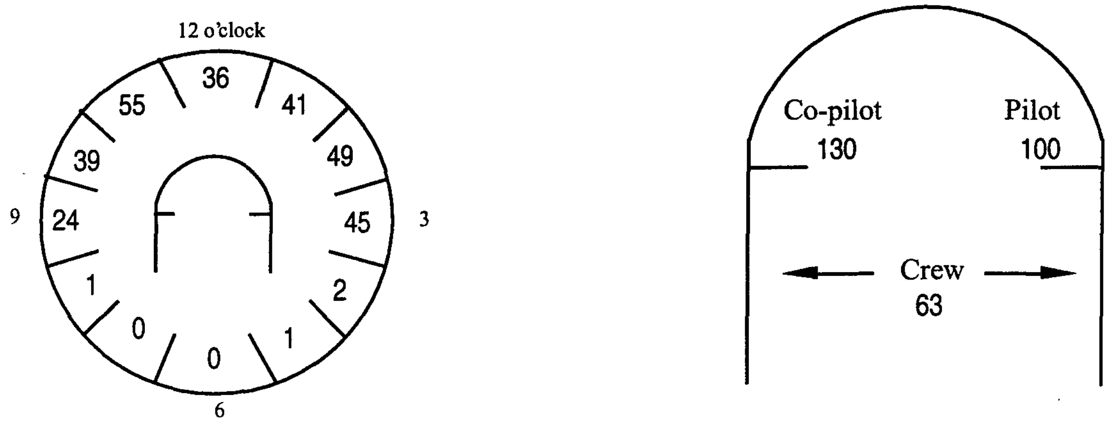

Figure 3-2. Number of initial detections by clock bearing and crew position (test one, 3-person crew).

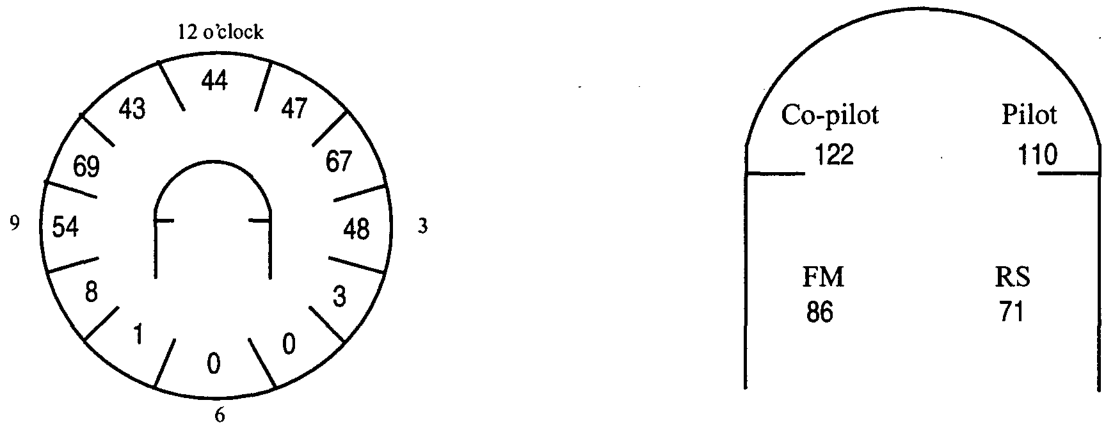

Figure 3-3. Number of initial detections by clock bearing and crew position (tests two and three, 4-person crews).

3.2 ENVIRONMENTAL CONDITIONS

Table 3-2 summarizes the range and average values of environmental and moon conditions experienced during the experiment. Environmental parameters are defined in appendix A.

Table 3-2. Environmental and moon parameter ranges and average values (all HH-65 tests combined).

PARAMETERS		TARGET TYPE		
		PIWs	**RAFTS**	**SKIFFS**
ENVIRONMENTAL FACTORS	Time on Task (hrs)	0 to 5.3, **1.9**	0 to 6.1, **2.0**	0 to 5.0, **1.3**
	Precipitation Level (0, 1, 2, 3)	0 to 1, **0**	0 to 2, **0.1**	0 to 3, **0.2**
	Visibility (nmi)	1 to 15, **10.4**	0.25 to 15, **12.9**	0.5 to 15, **10.3**
	Windspeed (kt)	1.7 to 16.9, **8.0**	1.6 to 17.1, **7.6**	2.9 to 19.2, **9.3**
	Cloud Cover (10ths of sky)	0.1 to 1.0, **0.5**	0 to 1.0, **0.3**	0 to 0.5, **0.6**
	Significant Waveheight (ft)	0.7 to 4.3, **2.0**	0.3 to 3.9, **2.0**	0.7 to 3.3, **1.7**
	Whitecap Coverage (0, 1, 2)	0 to 2, **0.4**	0 to 2, **0.5**	0 to 2, **0.6**
	Relative Humidity (%)	65 to 100, **80.1**	44 to 97, **71**	47 to 100, **75**
	Air Temperature (deg C)	7.6 to 29.0, **24.5**	3.2 to 28.2, **22.0**	7.0 to 19.2, **13.5**
	Water Temperature (deg C)	6.4 to 29.0, **22.1**	4.5 to 28.8, **22.3**	6.0 to 18.7, **12.7**
MOON	Elevation (degrees)	-59 to +66, **+5.2**	-65 to +61, **-0.5**	-55 to 53, **+15.4**
	Phase	0 to 1.0, **0.5**	0 to 1.0, **0.5**	0.7 to .99, **0.5**

Note: Average values are in bold.

3.3 HUMAN FACTORS

A total of 63 individual pilots and aircrewman participated in this test series. NVG experience ranged from 0 to 1000 hours. Time on task ranged up to 6.1 hours.

3.4 HH-65A CREW COMMENTS CONCERNING NVG USE

Comments provided by the SRU crew pertaining to NVG use are listed below:

"Credit card"[8] windows in pilots' doors interfere with NVG visibility.

60 knots, used for PIW searches, is too slow to allow autopilot use. 70 knots would be better.[9]

The Traffic Collision Avoidance System (TCAS) display causes glare and reflections within the cockpit.

The added weight of the NVGs increases operator fatigue.

Lightning causes the NVG to shut down momentarily.

One PIW ("one lucky guy") was seen only because lightning reflected off its retro-reflective tape.

Reflective tape is highly visible when illuminated from a point near the viewer's eye.

On dark nights, rafts appear as shadows when backlit by in-shore lights.

Visibility is reduced when looking toward the moon.

The full moon reflecting off the water and within the cockpit is bright enough to hinder NVG effectiveness.

Backscatter from the laser illuminator becomes distracting as darkness increases.

Whitecaps are distracting and annoying.

A single flare does not help at all. Two flares are much better.

A pattern of flares on both sides of the aircraft would be helpful.

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[8] A small window that can be manually opened. The frame around the window interferes with pilots' vision.

[9] During the first test, SRUs used 60 knots for PIW targets. Due to evolving operational doctrine, SRUs flew at 90 knots for all targets during the second and third tests.

3.5 CREW OBSERVATIONS CONCERNING TARGET APPEARANCE

Table 3-3 contains a list of observations provided by the HH-65A crews describing the physical appearance of the targets when detected.

Table 3-3. Observations by SRU crews concerning target appearance.

TARGET	TARGET DESCRIPTIONS (#) - number of occurrences if more than one
PIWs with no illumination	Single target (2) Lightning reflecting off tape Tape patch (6) 2 Squares, lit by moon 2 Reflective patches (5) Reflector (30) Square boxes (11) Scattering of light White square (2) 2 Boxes or objects (7)
PIWs with illumination	Mannequin Bright light (2) Bright reflector (3) Reflector, bouncing up and down Reflector (73) Dim light Unlit object (2) White dot (11) Faint white dot White dot, way out there Reflector, way out there 2 Dots, very close (2) 2 Reflectors (4) Reflector, in and out of laser beam (2) White bobbing object (3)
Rafts with no illumination	Raft (8) Raft w/ tape Shadow (5) Reflective flash Reflection off strobe Steady reflector Dark object (22) Reflector (17) White object (37)
Rafts with illumination	Raft (37) Raft w/ tape (5) Raft w/ canopy Target (8) Reflector (14) Reflector, lit by moon Light (2) Black spot into moon Dot (2) Marshmallow

TARGET	TARGET DESCRIPTIONS (#) - number of occurrences if more than one
Skiffs with no illumination	Boat/skiff (37) Boat/skiff, no cover/top (1) Boat with center console White target (3) White boat lit by shore lights (4) Dark object Shadow
Skiffs with illumination	Boat/skiff (18) Boat/skiff, with cover/top (12) Boat/skiff, no cover/top (9) Black box White object (41) Dark object (9) White flash Shadow (5)

3.6 GENERAL OBSERVATIONS BY DATA RECORDERS

General human factors-related comments and observations made by the test data recorders are listed below:

Crews complain about fatigue after about 4 hours on task.

Fatigue seems to play a major factor in crew's alertness after the third search.

"Sparkles" in NVGs are disorienting in extreme darkness.

The flashes from the aircraft's own anti-collision strobe are distracting in thick haze.

Bright shore lights interfere when searching toward the beach.

Laser beam appeared to be brighter on left side of aircraft although power levels were equal.

Laser power level used on bright nights appears to be too high for dark nights.

The illuminator appears much less intense than the earlier (fall '94) version.

Pilots initially had trouble determining if the illuminator was operating.

Crews initially said the illuminator beam was distracting, but were less critical when they witnessed how effective it was against retro-reflective targets.

Moderate rain is very distracting when illumination is used.

Pilots' "credit card" windows interfere with pilots' field of view for close-by targets.

Inexperienced crews have trouble distinguishing targets from whitecaps, debris, etc.

Navigation errors can distract both pilots from searching, because significant amounts of time must be spent looking inside the cockpit.

Pilots seem bored during 60-knot PIW searches.

Backscatter from the landing/hover lights is not highly visible to the naked eye when aimed straight down. Backscatter becomes more prevalent as the lights are aimed farther out.

Crews generally overestimate target distances.

Parachute flares provide illumination, but the CG would need to develop doctrine for deploying patterns of flares to provide sufficient energy to benefit to NVG-equipped SRUs.

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SECTION 4

HH-60/HH-65 SWEEP WIDTH COMPARISON

4.1 INTRODUCTION

This section compares the non-illuminated[10] search capability of the HH-60 with the HH-65[11] under similar search conditions. The purpose of this comparison is to determine whether the HH-65 requires separate sweep width tables, or if data from both aircraft can be combined into a single set of tables.

4.1.1 NVG Search Capability Comparison – HH-60 vs. HH-65

Since HH-60 NVG historical data existed from field tests conducted in 1991 through 1994, it was possible to compare those search results with NVG search data taken in three HH-65 search exercises conducted in the 1997-1998 time frame. In order to compare the data on an equivalent basis, it was necessary to reprocess both data sets to ensure that similar illumination conditions were compared. In addition, some HH-65 data involved three searchers instead of four. All HH-60 search data involved four-person crews, all wearing NVGs. The data were re-coded to ensure that situations involving three- and four-person NVG searches were distinguishable.

Substantial differences between the illuminators used on the two aircraft precluded comparisons using illuminated-target data. The HH-60 illuminator covered only the forward, right-hand sector of the crew's field of view. Hence, this chapter compares only non-illuminated data. Since about half of the HH-65 data were taken using a combination of landing lights and/or laser illumination, these data were also removed from the comparison data sets. Except under damp and/or foggy conditions (resulting in excessive backscatter) it is now common to conduct helicopter NVG searches with the aid of landing/hover lights. The tabulated sweep widths in this section should be viewed as non-illuminated capability comparisons rather than as the best sweep widths obtainable. This analysis assumes that any significant search performance differences would also be valid for illuminated conditions.

4.1.2 Environmental Conditions

Table 4-1 summarizes the average values for the environmental conditions encountered by each aircraft type during the test series. Careful inspection of the environmental factors may lead one to conclude that differences in search conditions would lead to differences in search performance.

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[10] The terms "illuminated" and "non-illuminated" refer to the presence or absence of artificial illumination, e.g., hover lights or near-IR illuminator.

[11] By convention, the Coast Guard HH-60J and HH-65A will be referred to in this chapter as the HH-60 and the HH-65, respectively.

In fact, HH-65 average search conditions are slightly better than average HH-60 search conditions. Since the data were analyzed using a combined data technique, the lateral range curve model adjusts for these differences and allows calculation of HH-60 vs. HH-65 sweep widths at comparable search conditions.

Table 4-1. Average values of environmental and moon parameters (all HH-60 and HH-65 non-illuminated data combined).

PARAMETERS		**TARGET AND AIRCRAFT TYPE**					
		PIWs		**RAFTS**		**SKIFFS**	
		HH-60	**HH-65**	**HH-60**	**HH-65**	**HH-60**	**HH-65**
ENVIRONMENTAL FACTORS	Time on Task (hrs)	2.0	1.9	2.2	2.0	1.9	1.3
	Precipitation Level (0, 1, 2, 3)	0	0	0	0	0	0
	Visibility (nmi)	13.3	10.4	12.6	12.9	12.8	10.3
	Windspeed (kts)	9.8	8.0	8.7	7.6	12.4	9.3
	Cloud Cover (10ths of sky)	0.3	0.5	0.4	0.3	0.3	0.6
	Significant Waveheight (ft)	4.0	2.0	2.8	2.0	4.0	1.7
	Whitecap Coverage (0, 1, 2)	1	1	1	1	1	1
	Relative Humidity (%)	81	80	85	71	77	75
	Air Temperature (deg C)	24.8	24.5	25.4	22.0	25.4	13.5
	Water Temperature (deg C)	25.6	22.1	25.6	22.3	25.7	12.7
MOON	Elevation (degrees)	+18	+5	+1	-1	-11	-15
	Phase	0.7	0.5	0.6	0.5	0.4	0.5

4.1.3 Lateral Range Curve Data Plots

The lateral range curve plots in this section show the lateral range from the aircraft trackline at the closest point during a pass at that lateral range (CPA, as defined in section 2) versus the probability of detecting the target *(P_D)*.

Figure 4-1 is an example of a lateral range curve plot. When a data set was large enough to adequately represent P_D over the domain of lateral ranges for that data set, the statistically significant variables were used to model a smoothed lateral range curve. Each data subset plot represents a unique combination of significant search variables. To produce the lateral range curve plots, the data in each target type data subset were separated into lateral range bins. The lateral range bin size of 0.1 nmi was selected because it was a convenient size based on the quantity of data available and accuracy of exercise reconstruction. The probability of detection within each lateral range bin was then plotted at the average lateral range value for that bin. The fraction next to each plotted data point denotes the ratio of targets detected to total target detection opportunities in that lateral range bin.

The vertical bar denotes the 90-percent confidence interval (for estimating a proportion) for each plotted data point. The curves represent the probability of detection versus lateral range. The area under each curve represents one-half of the calculated sweep width.

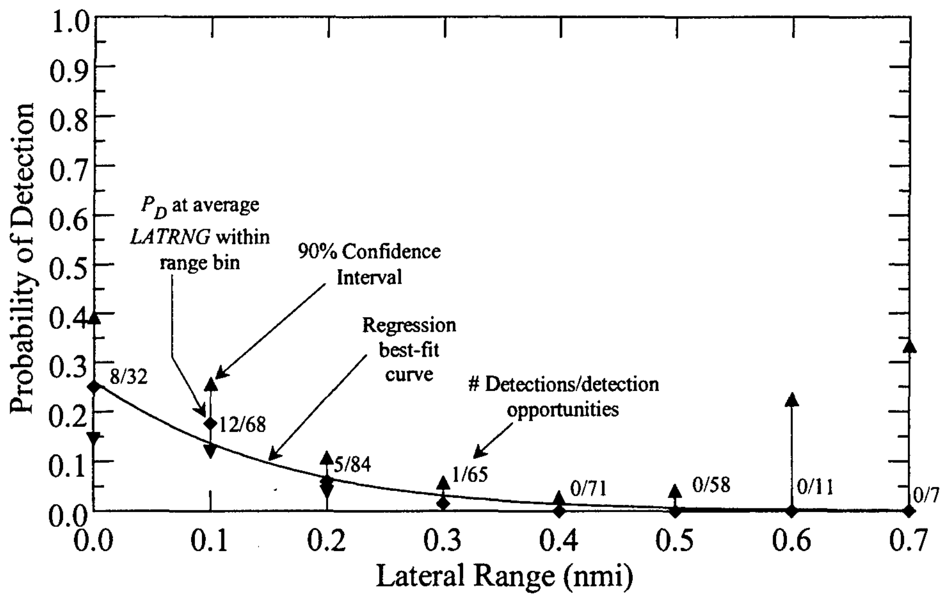

Figure 4-1. Example of a lateral range curve plot.

4.1.4 Lateral Range Curve - Data Comparisons

For the following data plots, all the non-illuminated HH-60 data were compared with all the non-illuminated 4-person search HH-65 data. The six lateral range plots include Boats (18-ft and 21-ft Carolina skiffs - with Bimini-type canopies on the 21-ft skiffs), 6-person life rafts with canopies and retro-reflective tape, and simulated PIWs wearing PFDs with retro-reflective tape. Only data from these standardized targets were compared.

Figure 4–2 and figure 4-3 compare all the HH-60 vs. boat data and HH-65 vs. boat data meeting the comparison criteria described above. A careful observation shows a slightly higher probability of detection at very short lateral ranges for the HH-65. It is unverified, but probable, that this situation exists as a result of differences in cockpit construction and/or other physical factors affecting close-in target visibility. In figure 4-2 and figure 4-3, the 18-ft and 21-ft boat data are mixed together. Later sweep width comparisons separate the boat types because they were found to be statistically different targets.

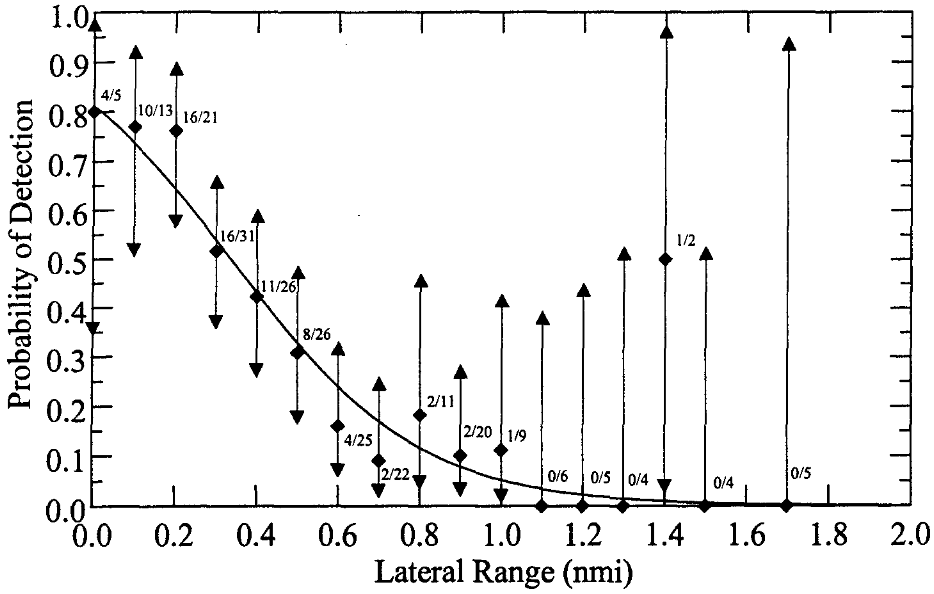

Figure 4-2. HH-60 vs. boats – non-illuminated.

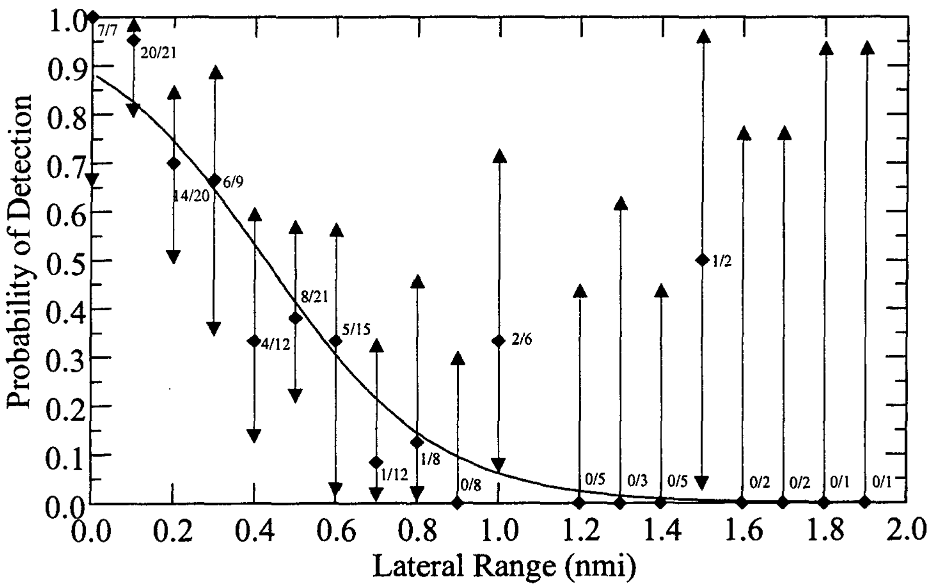

Figure 4-3. HH-65 vs. boats - non-illuminated.

Figure 4-4 and figure 4-5 compare the detection capability of the HH-60 and HH-65 versus the 6-person life raft target. Taking the data sets as a whole, very little, if any, difference was noted in the non-illuminated NVG search capabilities of the two aircraft against the life raft target.

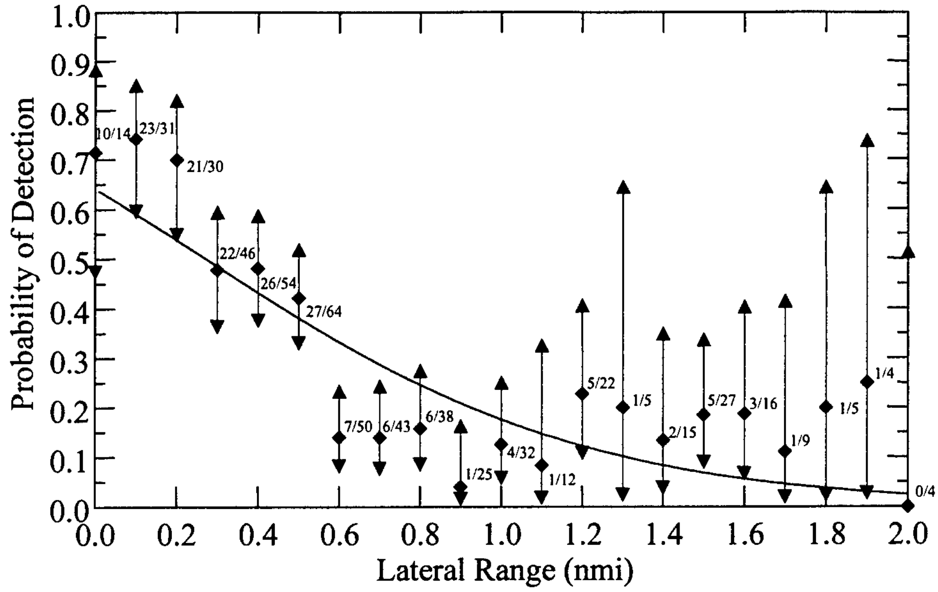

Figure 4-4. HH-60 vs. 6-person rafts - non-illuminated.

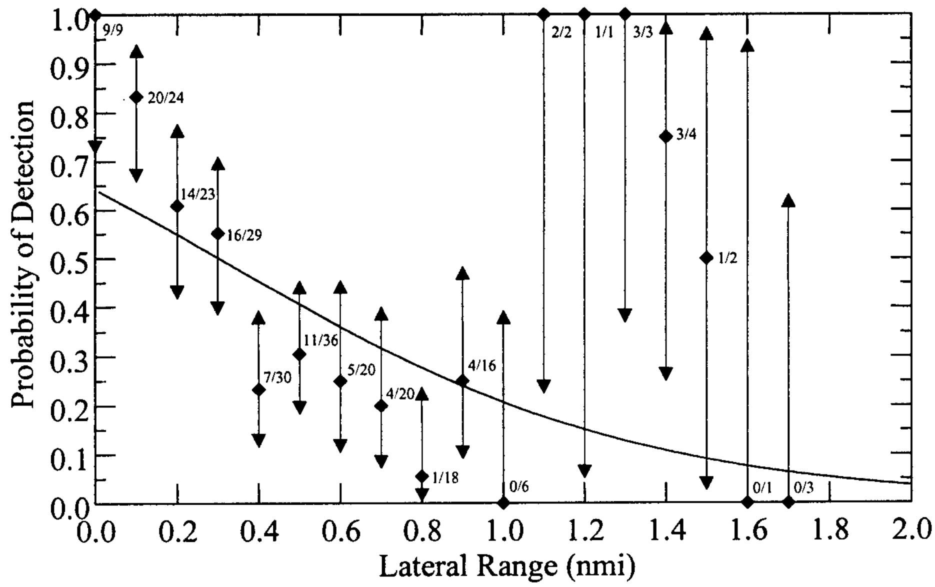

Figure 4-5. HH-65 vs. 6-person rafts - non-illuminated.

Figure 4-6 and figure 4-7 compare the detection capability of the HH-60 and HH-65 versus the PIW target. Here again, the detection probability appears slightly better for the HH-65 when lateral range is very short.

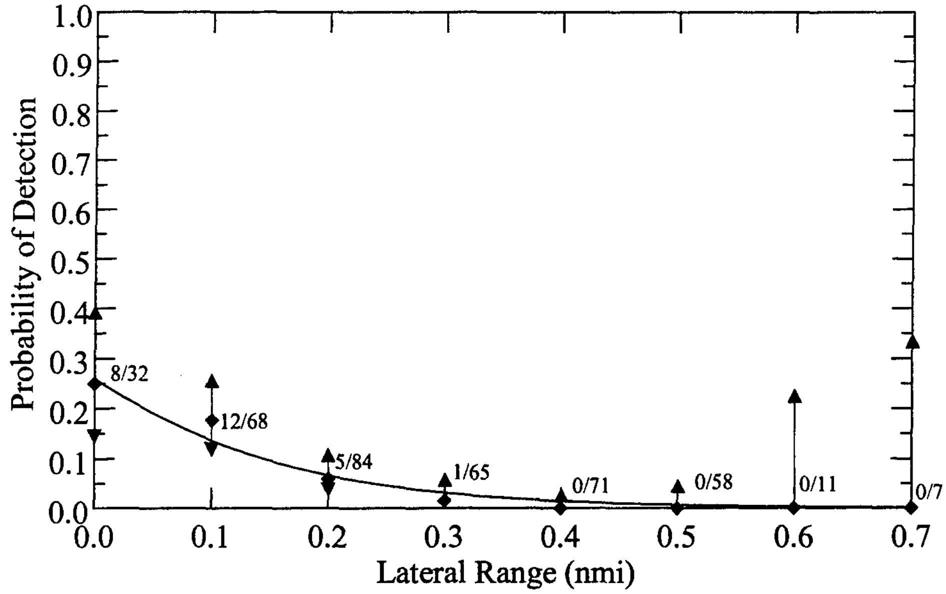

Figure 4-6. HH-60 vs. PIWs - non-illuminated.

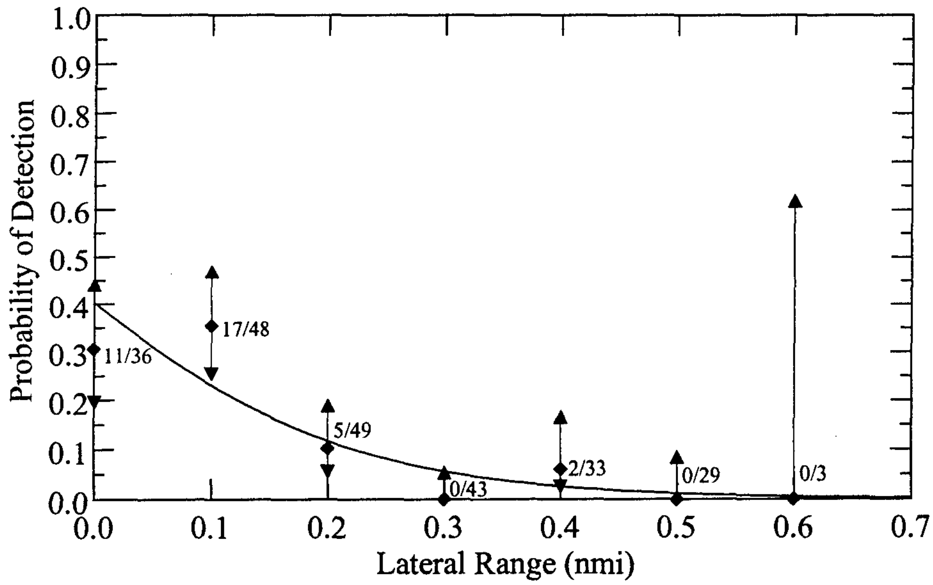

Figure 4-7. HH-65 vs. PIWs - non-illuminated.

4.1.5 Sweep Width Table – Data Comparisons

In non-illuminated (no landing lights or illuminator) situations, experience has shown that the primary effect on NVG search performance is the total available natural light. When enough data exist for different moon phase and moon visibility conditions, it is possible to use the product of moon is visible (MOONVIS=1) and moon phase (in percent of full) as a proxy for the total available light. When lesser amounts of data are available, moon visible and moon not visible become the alternate proxy for the natural lighting condition. During periods of heavy overcast, if the moon is above the horizon but not visible to the NVG user, the lighting condition appears similar to a moon below the horizon situation.

The mathematical model of the lateral range curve from which *W* is derived will be described in section 6. The model is capable of comparing HH-60 and HH-65 data at common environmental conditions. It is sensitive (in the sense of statistical significance) to significant waveheight (Hs), whitecaps (WHCAPS), cloud cover (CLDC), time on task (TOT), and visibility (VIS) conditions (modeled as 1/VIS (see section 6)), and 3 vs. 4 persons searching.

Because of the large number of possible variable combinations (hundreds of situations are possible), a set of standardized conditions was created to cover a typical range of search conditions from excellent to poor. The total amount of natural light must be high to have excellent search conditions. In addition, sea state (Hs and WHCAPS) must be low to have excellent and good search conditions. High sea states, poor visibility, and low natural light are characteristic of poorer search conditions. Values of the variables were chosen to provide a range of situations, which would cause sweep width to decrease as the search conditions changed from excellent to poor. Table 4-2 describes the selected standardized search conditions.

Table 4-2. Standardized search conditions.

Search Condition	MOONVIS * Phase	VIS	CLDC	Hs	WHCAPS	TOT
Excellent	0.8	15	0.25	1	0	1
Good - Moon Visible	0.5	15	0.25	2	0	1
Good – No Moon	0	15	0.25	2	0	1
Fair	0	3	0.8	3	1	1
Poor	0	1	1	5	2	1

As discussed in section 2, the computed (mean) value of sweep width for any combination of conditions is only an estimate subject to a confidence interval. The comparison in this section includes not only the target and search combinations listed above, but also the difference between HH-60 and HH-65 sweep widths. The comparison involves the task of determining if two mean values are statistically different. If the chosen confidence intervals about each mean value overlap, then a statistical difference cannot be proven at the chosen confidence level. Normally a high level of confidence is chosen, such as 90 percent or 95 percent. In this comparison, 68 percent was chosen in order to provide a narrower confidence interval. The confidence intervals are calculated using the Gamma distribution approximation as described in section 2. If the underlying probability density function for sweep width were normal, the 68-percent confidence interval would correspond to +/- 1 standard deviation about the mean. Table 4-3 lists the resulting sweep widths and the corresponding confidence intervals [low, high] for the chosen situations and target types. All HH-65 and HH-60 68-percent confidence intervals overlap. If a 90-percent (wider) confidence interval had been chosen, the overlap regions would be even larger.

Table 4-3. Comparison of HH-65 and HH-60 non-illuminated search performance (four-searcher crews).

		HH-65		HH-60	
Search Condition	**Target**	***W***	**Confidence Interval (nmi) [low, high]**	***W***	**Confidence Interval (nmi) [low, high]**
Excellent	18-ft Skiff	1.57	[1.27, 1.88]	1.25	[1.01, 1.48]
	21-ft Skiff	1.93	[1.56, 2.30]	1.53	[1.24 ,1.82]
	6-person raft	1.91	[1.48, 2.35]	1.43	[1.13, 1.73]
	PIW w/ PFD	0.27	[0.23, 0.31]	0.23	[0.19, 0.28]
Good Moon Visible	18-ft Skiff	1.21	[1.00, 1.42]	0.98	[0.79, 1.17]
	21-ft Skiff	1.52	[1.26, 1.79]	1.24	[1.00, 1.47]
	6-person raft	1.42	[1.15, 1.69]	1.10	[0.87, 1.32]
	PIW w/ PFD	0.18	[0.16, 0.21]	0.16	[0.12, 0.20]
Good No Moon	18-ft Skiff	0.85	[0.71, 0.99]	0.71	[0.57, 0.85]
	21-ft Skiff	1.11	[0.93, 1.29]	0.92	[0.75, 1.10]
	6-person raft	0.95	[0.80, 1.10]	0.77	[0.61, 0.92]
	PIW w/ PFD	0.11	[0.10, 0.13]	0.10	[0.08, 0.13]
Fair	18-ft Skiff	0.50	[0.40, 0.59]	0.43	[0.32, 0.54]
	21-ft Skiff	0.68	[0.55, 0.82]	0.59	[0.45, 0.73]
	6-person raft	0.52	[0.42, 0.62]	0.44	[0.33, 0.56]
	PIW w/ PFD	0.06	[0.04, 0.07]	0.05	[0.03, 0.07]
Poor	18-ft Skiff	0.25	[0.17, 0.34]	0.22	[0.13, 0.32]
	21-ft Skiff	0.39	[0.27, 0.51]	0.34	[0.22, 0.47]
	6-person raft	0.26	[0.17, 0.34]	0.22	[0.13, 0.31]
	PIW w/ PFD	0.02	[0.01, 0.03]	0.02	[0.01, 0.03]

4.2 SWEEP WIDTH REDUCTION FROM THREE-PERSON SEARCH

A limited amount of data was obtained with the HH-65 using three searchers wearing NVGs. The average reduction in sweep width for rafts and skiffs caused by not visually covering one "backseat" side of the aircraft was about 20 percent for rafts and skiffs and 10 percent for PIWs. Table 4-4 lists the sweep widths for the non-illuminated HH-65 three-person search under the selected standard conditions.

Table 4-4. Sweep widths for the non-illuminated HH-65 using a three-person NVG search.

	Non-Illuminated HH-65 Sweep Widths (nmi) Three-Person NVG Search			
Search Condition	**21-ft Skiff**	**18-ft Skiff**	**6-Person Raft**	**PIW w/ PFD**
Excellent	1.38	1.13	1.27	0.22
Good - Moon Visible	1.12	0.89	0.98	0.15
Good - No Moon	0.85	0.65	0.70	0.10
Fair	0.55	0.40	0.41	0.05
Poor	0.32	0.21	0.21	0.02

4.3 HH-60 VS. HH-65 COMPARISON CONCLUSIONS AND RECOMMENDATIONS

A careful inspection of the results yields the following conclusions. The mean value of HH-65 sweep width is always equal to or higher than HH-60 sweep width under identical circumstances. The 68-percent confidence intervals overlap in all cases. Because the confidence intervals overlap, one cannot conclude that the HH-65 is a significantly better searcher than the HH-60.

For non-illuminated cases, there is no significant difference in search performance between the two platforms. There are no known reasons or indications that would raise suspicion that a comparison of illuminated HH-60 vs. HH-65 search capability would be statistically different.

The practical implication of this analysis is that the available evidence indicates search planners need not use separate sweep width tables for the two aircraft.

The HH-65 in the three-searcher configuration has measurably lower sweep widths than in the four-searcher configuration.

The zero lateral range probability of detection tends to be higher for the HH-65 than for the HH-60. It is conjectured that the lookdown angle and/or the flight attitude of the HH-65 combine to allow targets with near-zero lateral ranges to be observed at closer <u>actual</u> ranges before disappearing from view under the helicopter.

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SECTION 5

ARTIFICIAL ILLUMINATION FOR NVGS

5.1 INTRODUCTION

This section discusses the R&D Center's analysis of the effects of artificial illumination on NVG search performance. During an NVG field test in 1992, an HH-60[12] SRU conducted part of a search with an illuminated landing light. The crew observed a significant increase in detection capability for targets with patches of retro-reflective material. To explore the concept further, in 1993-94, the R&D Center developed and field-tested a prototype near-IR laser illuminator on board an HH-60. The primary advantage of near-IR energy over white light was that it was invisible to the human eye; hence, it did not affect the crews' normal night vision. In addition, at 808 nanometers, the energy output was in the peak sensitivity region of the ANVIS goggles. The results of that test showed dramatic improvements in reflective target detection capability, particularly under extremely dark conditions. The effect of the first prototype illuminator on non-reflective targets, e.g., skiffs, was not statistically significant due to limited data quantities. The first prototype was designed for proof-of-concept evaluation, and illuminated only the forward, right quadrant of the crew's field of view. In preparation for the HH-65 test series, the R&D Center redesigned the prototype's lens system to diffuse the same energy over the entire forward hemisphere of the crew's field of view, though at significantly reduced power densities. They also added a controller for power output. The improved prototype was tested throughout the three-test HH-65 series. When available, a second aircraft, configured as either "darkened ship" or with aircraft landing (hover) lights, searched simultaneously to provide control data. The HH-65 illuminator was considerably less effective at lateral ranges 0.5nmi than the HH-60 illuminator, mainly due to the larger area of sea surface coverage using the same amount of power. In early tests, power settings were selected based on recommendations from the crew to reduce apparent effects of atmospheric backscatter. Experience eventually demonstrated that the maximum power setting was most effective at improving target detection despite the annoying backscatter.

During one test night, a Canadian Coast Guard C-130 illuminated the search area with parachute flares. The purpose of this experiment was to make an initial assessment of the concept. The amount of data obtained from this trial was too small for statistical analysis (see table 5-1), but did provide the crews and data recorders an opportunity to observe the effects of 1-2 flares deployed immediately outside the search area.

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[12] By convention, the Coast Guard HH-60J and HH-65A helicopters will be referred to in this chapter as the HH-60 and HH-65, respectively.

5.2 PURPOSE

When illumination experiments began in 1993, NVG searches were generally conducted without artificial illumination. In the ensuing years, it became common for helicopter crews to supplement ambient lighting with steerable aircraft landing/hover lights. These lights (two per aircraft) are conventional 450-watt sealed-beam incandescent bulbs with a fixed, spot pattern. The purpose of this analysis is to quantify the benefits of using artificial illumination to improve NVG searches, and to assist the Coast Guard project planners in deciding whether a specialized illuminator can provide enough improvement over the landing lights to justify continued development.

5.3 DATA QUANTITIES

The HH-65 test series yielded 999 illuminated target detection opportunities, distributed among target types as depicted in table 5-1. In all, the HH-65 crews, which included both three- and four-person searcher configurations, made 682 target detections.

Table 5-1. Data quantities for illuminated targets
(all HH-65 tests combined).

Target Type	Lighting Configuration	Number of Opportunities	Totals
PIWs	illuminator	75	399
PIWs	aircraft hover lights*	226	
PIWs	aircraft hover lights and illuminator*	94	
PIWs	parachute flares	4	
Rafts	illuminator	334	405
Rafts	aircraft hover lights*	43	
Rafts	aircraft hover lights and illuminator*	23	
Rafts	parachute flares	5	
Skiffs	illuminator	73	195
Skiffs	aircraft hover lights*	73	
Skiffs	aircraft hover lights and illuminator*	34	
Skiffs	parachute flares	15	
			999

*One or both hover lights on

5.4 DATA ANALYSIS

Data were initially analyzed using the statistical methods outlined in section 2, using the three illumination conditions shown in table 5-2.

Table 5-2. Illumination conditions.

Illumination Conditions
Either One or Two Landing Lights Only
Near-IR Illuminator Only
Both Near-IR Illuminator and Landing Light

If either the near-IR illuminator or landing light(s) or both was in use, the situation was called illuminated. If the near-IR illuminator was in use, this information was used in the analysis. The discrimination between one and two landing lights in use was analyzed but discarded in favor of a simpler approach.

5.5 SWEEP WIDTH RESULTS USING ARTIFICIAL ILLUMINATION

This section presents search performance results using all available HH-65 data taken with artificial illumination. In add'tion, the choice of using one or two landing lights was left to the operator based on what seemed best under local conditions.

5.5.1 Comparison of Illuminated vs. Non-Illuminated HH-65 Search Performance

Table 5-3 shows the HH-65 illuminated with landing lights versus non-illuminated sweep width comparisons for the standard search conditions defined in section 4. The lateral range curve model (discussed in section 6) predicts a slight improvement in sweep width for boats and rafts in "good" to "poor" search conditions when illumination is used. In low natural lighting conditions, use of illumination definitely improves sweep width. When the moon is very bright, the statistical model predicts that use of landing lights does not appear to increase sweep width for boats and rafts and, in fact, may decrease sweep width. See the shaded blocks of table 5-3.

However, PIW sweep widths benefit enormously from the use of artificial illumination. This phenomenon is consistent with all test results to date and is statistically significant. Artificial illumination should always be used for PIWs. Since all PIW targets employed retro-reflective material, it is unlikely that search performance gains from the use of artificial illumination would be as significant for PIWs without retro-reflective material.

Table 5-3. Comparison of non-illuminated and illuminated HH-65 search performance.

		HH-65 Non-Illuminated		HH-65 Illuminated (Landing Lights)	
Search Condition	**Target**	***W***	**Confidence Interval (nmi) [low, high]**	***W***	**Confidence Interval (nmi) [low, high]**
Excellent	18-ft Skiff	1.57	[1.27, 1.88]	1.29	[1.03, 1.54]
	21-ft Skiff	1.93	[1.56, 2.30]	1.82	[1.46, 2.17]
	6-person raft	1.91	[1.48, 2.35]	1.79	[1.39, 2.19]
	PIW w/ PFD	0.27	[0.23, 0.31]	0.87	[0.76, 0.99]
Good Moon Visible	18-ft Skiff	1.21	[1.00, 1.42]	1.09	[0.89, 1.29]
	21-ft Skiff	1.52	[1.26, 1.79]	1.56	[1.28, 1.83]
	6-person raft	1.42	[1.15, 1.69]	1.47	[1.19, 1.75]
	PIW w/ PFD	0.18	[0.16, 0.21]	0.79	[0.69, 0.89]
Good No Moon	18-ft Skiff	0.85	[0.71, 0.99]	0.92	[0.77, 1.07]
	21-ft Skiff	1.11	[0.93, 1.29]	1.32	[1.12, 1.53]
	6-person raft	0.95	[0.80, 1.10]	1.20	[1.02, 1.39]
	PIW w/ PFD	0.11	[0.10, 0.13]	0.72	[0.64, 0.80]
Fair	18-ft Skiff	0.50	[0.40, 0.59]	0.55	[0.44, 0.66]
	21-ft Skiff	0.68	[0.55, 0.82]	0.84	[0.69, 0.99]
	6-person raft	0.52	[0.42, 0.62]	0.70	[0.58, 0.82]
	PIW w/ PFD	0.06	[0.04, 0.07]	0.50	[0.43, 0.57]
Poor	18-ft Skiff	0.25	[0.17, 0.34]	0.29	[0.19, 0.39]
	21-ft Skiff	0.39	[0.27, 0.51]	0.53	[0.38, 0.67]
	6-person raft	0.26	[0.17, 0.34]	0.38	[0.27, 0.49]
	PIW w/ PFD	0.02	[0.01, 0.03]	0.31	[0.24, 0.38]

5.5.2 Comparison of Near-IR Illuminator vs. Landing Lights on HH-65 Search Performance

Analysis showed that the near-IR illuminator seemed to increase sweep width over landing lights only as the illumination source in whitecap conditions. In order to present the results in a way that shows sensitivity to whitecaps, the standard search conditions presented in section 4 were slightly modified and appear in table 5-4. Whitecaps do not generally appear at wind speeds below 12 knots. Waveheights during the test tended to be approximately 3 ft or higher during whitecap-producing wind conditions.

Table 5-4. Standardized search conditions for illuminated targets.

Search Condition	MOONVIS * Phase	VIS	CLDC	Hs	WHCAPS	TOT
Excellent	0.8	15	0.25	1	0	1
Good - Moon Visible, Hs=3	0.5	15	0.25	3	0	1
Good – No Moon, Hs=3	0	15	0.25	3	0	1
Good - Moon Visible WHCAPS	0.5	15	0.25	3	1	1
Good – No Moon WHCAPS	0	15	0.25	3	1	1
Fair	0	3	0.8	3	1	1
Poor	0	1	1	5	2	1

The Good – Moon Visible and Good – No Moon conditions in section 4 were modified with an increase in significant waveheight, Hs, from 2 to 3 ft. These modified "good" conditions were named Good – Moon Visible, Hs=3 and Good – No Moon, Hs=3. Two additional "good" search conditions were added showing the transition from no whitecaps to "few" whitecaps (WHCAPS=0 to WHCAPS=1). These added conditions were called Good – Moon Visible WHCAPS and Good – No Moon WHCAPS. The two added "good" conditions are identical to the modified "good" conditions except for the presence of "few" whitecaps. In the "Poor" search condition category, the WHCAPS=2 indicates "many" whitecaps. This choice of conditions allows for comparison of illuminated performance with and without a near-IR illuminator in the same manner as in section 4. Table 5-5 shows this comparison.

Table 5-5 shows that when whitecaps are present, the mean sweep width values are higher using the near-IR illuminator than with landing lights alone. Depending on the target and condition, the sweep width improvement appears to average between 0.1 and 0.2 nmi. The 68-percent confidence interval, [low, high] in nmi, overlaps for the two illumination situations for all search conditions. This indicates that we cannot prove statistically, even with as little as 68-percent confidence, that the mean values of sweep width are different for the two illuminated situations.

The apparent reduction in sweep width associated with whitecaps appears to be due to both a false target effect and a target obscuring effect caused by waveheight. If there is a difference in search performance using a near-IR illuminator in whitecap conditions, it may be due to the reduced reflections from whitecaps due to single wavelength light.

As in section 4, the statistical model used for this analysis also displayed sensitivity significance to time on task (TOT). Only 1 hour TOT (time actually spent searching with NVGs) was selected for the comparisons to avoid unnecessary complication.

Table 5-5. Comparison of illuminated HH-65 search performance without and with near-IR illuminator.

		Illuminated HH-65 Without Near-IR Illuminator		**Illuminated HH-65 With Near-IR Illuminator**	
Search Condition	**Target**	***W***	**Confidence Interval (nmi) [low, high]**	***W***	**Confidence Interval (nmi) [low, high]**
Excellent	18-ft Skiff	1.29	[1.03, 1.54]	Sweep Widths and Confidence Intervals Same as for Without Near-IR Illuminator	
	21-ft Skiff	1.82	[1.46, 2.17]		
	6-person raft	1.79	[1.39, 2.19]		
	PIW w/ PFD	0.87	[0.76, 0.99]		
Good Moon Visible Hs=3	18-ft Skiff	1.02	[0.83, 1.22]		
	21-ft Skiff	1.49	[1.22, 1.76]		
	6-person raft	1.14	[0.95, 1.33]		
	PIW w/ PFD	0.79	[0.69, 0.89]		
Good No Moon Hs=3	18-ft Skiff	0.87	[0.72, 1.02]		
	21-ft Skiff	1.27	[1.06, 1.47]		
	6-person raft	1.14	[0.95, 1.33]		
	PIW w/ PFD	0.72	[0.64, 0.80]		
Good Moon Visible WHCAPS	18-ft Skiff	0.88	[0.69, 1.06]	1.02	[0.84, 1.21]
	21-ft Skiff	1.07	[1.07, 1.59]	1.49	[1.24, 1.74]
	6-person raft	1.21	[0.95, 1.46]	1.39	[1.15, 1.64]
	PIW w/ PFD	0.67	[0.57, 0.76]	0.75	[0.66, 0.85]
Good No Moon WHCAPS	18-ft Skiff	0.74	[0.60, 0.89]	0.87	[0.73, 1.01]
	21-ft Skiff	1.13	[0.93, 1.33]	1.27	[1.07, 1.46]
	6-person raft	0.99	[0.81, 1.16]	1.14	[0.97, 1.31]
	PIW w/ PFD	0.61	[0.53, 0.69]	0.69	[0.61, 0.77]
Fair	18-ft Skiff	0.55	[0.44, 0.66]	0.64	[0.54, 0.75]
	21-ft Skiff	0.84	[0.69, 0.99]	0.95	[0.80, 1.10]
	6-person raft	0.70	[0.58, 0.82]	0.81	[0.70, 0.93]
	PIW w/ PFD	0.50	[0.43, 0.57]	0.57	[0.50, 0.63]
Poor	18-ft Skiff	0.29	[0.19, 0.39]	0.44	[0.36, 0.53]
	21-ft Skiff	0.53	[0.38, 0.67]	0.71	[0.58, 0.84]
	6-person raft	0.38	[0.27, 0.49]	0.56	[0.47, 0.66]
	PIW w/ PFD	0.31	[0.24, 0.38]	0.43	[0.36, 0.49]

5.6 ILLUMINATION CONCLUSIONS AND RECOMMENDATIONS

PIW searches always benefit from the use of artificial illumination. Even under high humidity conditions with backscatter, field test data indicate that retro-reflective material is visible to a greater extent than when illumination is not used.

Searches for small boats and rafts benefit from the use of artificial illumination in moon conditions of about 50-percent or less face showing. Artificial illumination does not appear to increase (and may decrease) sweep width during very bright natural lighting conditions (near full-moon conditions). When humidity is high and backscatter is an annoyance, use of artificial illumination will normally improve probability of detection at shorter lateral ranges and may slightly reduce probability of detection at longer lateral ranges. Experimental results tend to indicate improved sweep widths with artificial illumination even when backscatter is an annoyance.

The prototype near-IR illuminator seems to improve sweep width slightly under whitecap conditions. The effect cannot be proven with the quantity of data taken to date and is not significant at a 68-percent confidence level. The effect is not strong enough to justify continued prototype development. The Coast Guard should continue to monitor technological improvements from the research conducted by other services and retest if significant technological advancements occur.

Parachute flares provide additional illumination, but the Coast Guard would have to develop operational doctrine for deploying patterns of flares to provide sufficient light in the immediate search area to benefit NVG-equipped SRUs. Not enough data were available to justify any solid conclusions. Expended (hence invisible) flares drifting into the search area may create an unacceptable risk to airborne SRUs. If further research into flare drop tactics is desired, coordination with Canadian authorities is recommended.

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SECTION 6

COMBINED DATA MODEL VERIFICATION

USING DATA SUBSET COMPARISONS

6.1 QUANTIFYING ENVIRONMENTAL EFFECTS ON SWEEP WIDTH

Lateral range curve calculations derived from small data sets normally do not have a wide enough variation in environmental conditions to identify statistically significant changes in sweep width as a function of changes in observable environmental variables. For example, windspeed, waveheight, and whitecaps are all strongly correlated variables. In a given field test, higher wind conditions might occur by chance on a very clear night with no cloud cover and a bright moon. Data taken on a different night might have very low wind conditions, poor visibility, full cloud cover, and no moon visible. Both the chance pairings of environmental conditions and normally related pairings (e.g., wind, whitecaps), commonly referred to as multi-colinearity effects, cause special difficulties with analysis. For example, given the situation above, high winds associated with otherwise good lighting conditions might lead to the erroneous conclusion that sweep width improves with increasing windspeed. There is also a tendency for normally related conditions to become a proxy for each other. For example, whitecaps can become a proxy for windspeed or vice versa. Chance pairings of conditions tend to become less of a problem for analysis when data from many field tests are mixed. There is less likelihood that identical chance pairings of environmental conditions will occur over many nights of data.

In order to more accurately quantify the effects of the environment on sweep width, large amounts of field test data taken over a wide variety of conditions are required. Each target type may not be represented by a wide enough variation in environmental conditions whereas, mixing target types together in the same data set may provide the wide variety of environmental conditions needed to more accurately quantify their relative effects on the lateral range curve. Traditionally, environmental effects have been measured, wherever possible, on a per-target type basis. This report departed from this tradition and analyzed all data in one block.

It is logical to assume, for example, that if higher winds reduce sweep width for one target type, the same effect would occur for other target types. There is proper skepticism, however, that the exact amount of the effect would be the same across several target types. This question was examined very carefully with surprising results.

It was discovered that search performance against each target type could be represented by a base lateral range curve for the two artificial illumination conditions called any_illumination and no_illumination. In the HH-60 versus HH-65 comparison, the data were also coded to reflect the platform associated with each detection or missed detection. The difference appeared in the lateral range coefficient, but did not produce statistically different sweep widths. For this reason, the combined HH-60/HH-65 model eliminated the distinction between HH-60 and HH-65. From each base lateral range curve, common environmental effect coefficients are used to build up a final lateral range curve for each target type. Since this analysis approach was such a departure from previously used techniques, it needed further validity testing and verification.

6.2 TESTING THE VALIDITY OF THE COMBINED-DATA TECHNIQUE

To test the validity of the large combined data model approach, the data were sorted into separate target types once again. Data from the separate target types were re-sorted into conditions that represented good and poor search conditions. These subsets of data were graphed using the data subset approach explained in section 2. The high and low 90-percent confidence limits for estimating the proportion of detections/opportunities were calculated and displayed graphically at each 0.1-nmi lateral range bin. The lateral range curve was fitted and graphed based only on the data from each chosen data subset. The average values of the environmental variables needed as input to the combined-data model were calculated for each data subset and these averages were inserted in the combined data lateral range model. The resulting lateral range curve was overlaid onto the curve representing the data subset alone, allowing direct visual comparison of the two curves.

A major underlying assumption was that the raw data are correct. If the combined data model is valid, the lateral range curves from the two approaches should match up quite closely, and the sweep width calculated from each approach should be quite similar. Twelve examples will be presented to illustrate that the combined data technique is valid and provides a robust method of estimating sweep width over a wide variety of environmental conditions.

The raw data were initially sorted into "illuminated" and "non-illuminated" categories. These categories were then sorted into boat (skiff), raft, and PIW. From these six data subsets, the data were again sorted into "good" and "poor" search condition subsets. Due to chance multi-colinearity effects and the total quantity of data points in each good and poor situation, it was not possible to use a consistent set of sort criteria. Instead, using foreknowledge of the factors that create good and poor search conditions, the data were sorted on two or three variables associated with good or poor search conditions. A data subset size of 80 to 120 points was considered desirable but not always achieved. Table 6-1 lists the sort criteria used to determine "good" and "poor" search conditions for each target type vs. illumination condition. These sort criteria could not always be made mutually exclusive due to the total quantities of available data.

The twelve graphs that follow compare the raw data model and the combined data model lateral range curves from each data subset. The boat target graphs have three lateral range curve lines. The 18-ft skiff and 21-ft skiff combined data curves bracket the raw data curve, which does not distinguish between skiff types. The raft and PIW target graphs each have two lateral range curves. The label on each graph reflects the target type, a good or poor search condition, and the illumination condition. This leads to a total of 12 graphs (3 target types x 2 search conditions x 2 illumination conditions). These 12 situations relate directly to the sweep width data presented in table 6-2.

Table 6-1. Good and poor search condition sort criteria.

Target Type	Search Condition	Illuminated Search	Non-Illuminated Search
18-ft and 21-ft Skiffs	Good	Hs <= 2.6 WHCAPS <=1 MoonVis = 1	WDSP <= 9 CLDC <= 0.8 WHCAPS = 0 MoonVis = 1
	Poor	WHCAPS >= 1 MoonVis = 0	WDSP >= 8.2 WHCAPS >= 1 MoonVis = 0
6-Person Rafts	Good	CLDC <= 0.1 Hs <= 3 WHCAPS = 0 MoonVis = 1	CLDC <= 0.2 MoonVis = 1
	Poor	CLDC >= 0.8 Hs >= 1.6	WDSP >= 7.4 CLDC >= 0.6 MoonVis = 0
PIWs w/ PFD	Good	Vis >= 12 WHCAPS <= 1 Hs <= 3	Hs <= 2.6 MoonVis = 1
	Poor	WHCAPS >= 1 CLDC = 1	WHCAPS >= 1 MoonVis = 0

The following criteria may be used to assess the lateral range curve fit to the raw data:

- A lateral range curve should pass through most error bars. The error bars represent 90-percent confidence limits on the estimation of a proportion. A given lateral range curve should pass through about nine out of ten error bars. In some cases, there is an error bar that is a significant outlier that a curve may miss. In general, both the raw data model and combined data model lateral range curves meet this criteria.

- Additionally, the lateral range curves from the two analysis methods should have the same basic shape, and the sweep widths should agree within reasonable confidence limits. In all 12 cases illustrated, the combined data model agrees quite closely with the raw data fit. These cases represent some of the "outside edges" of the data sorting along factors that influence good and poor search conditions. In general, if a model fits well at the extremes of the data set, one can conclude that it will also fit well in the centroid area.

Figure 6-1 through figure 6-12 compare the lateral range curves using the data subset technique and combined data technique. These figures provide insight into why large amounts of data must be analyzed together in order to detect and quantify the effects on sweep width caused by variations in environmental variables. Upon inspection, many of the 12 figures will reveal chance outlier data points that occur due to small sample sizes. The length of the error bar is inversely related to the amount of data in the lateral range bin. Error bars that extend almost the entire height of the graph indicate only one or two data points in that given lateral range bin. Few error bars are short. Put simply, there must be enough consistent data to determine the relatively small effects on sweep width caused by small changes in the search environment. Each of the 12 figures represents such a small amount of data that a sweep width model sensitive to environmental parameters cannot be constructed using that data subset. By far the best statistical fit to the data occurred when data from all targets and searcher configurations were mixed together and analyzed as a group.

Table 6-2 lists the sweep widths associated with the lateral range curves presented as figure 6-1 through figure 6-12. The 68-percent confidence limits about the mean value of W for the combined data model are listed as [low, high] in nmi.

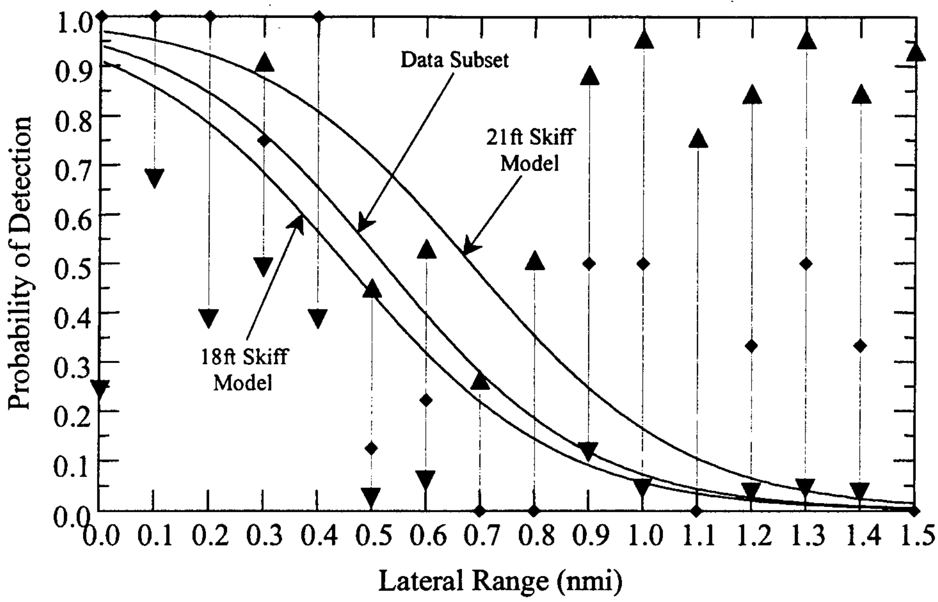

Figure 6-1. Boats – illuminated – good search conditions.

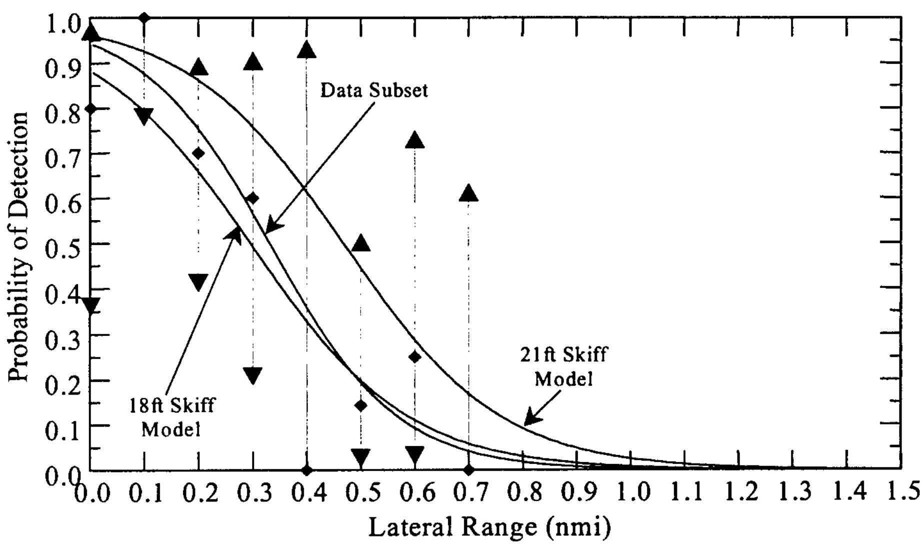

Figure 6-2. Boats – illuminated – poor search conditions.

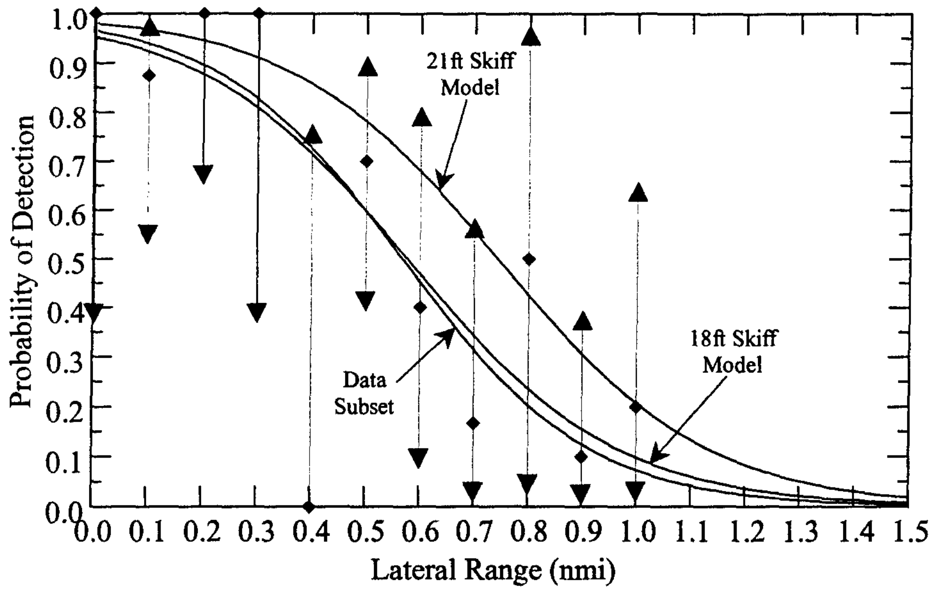

Figure 6-3. Boats – non-illuminated – good search conditions.

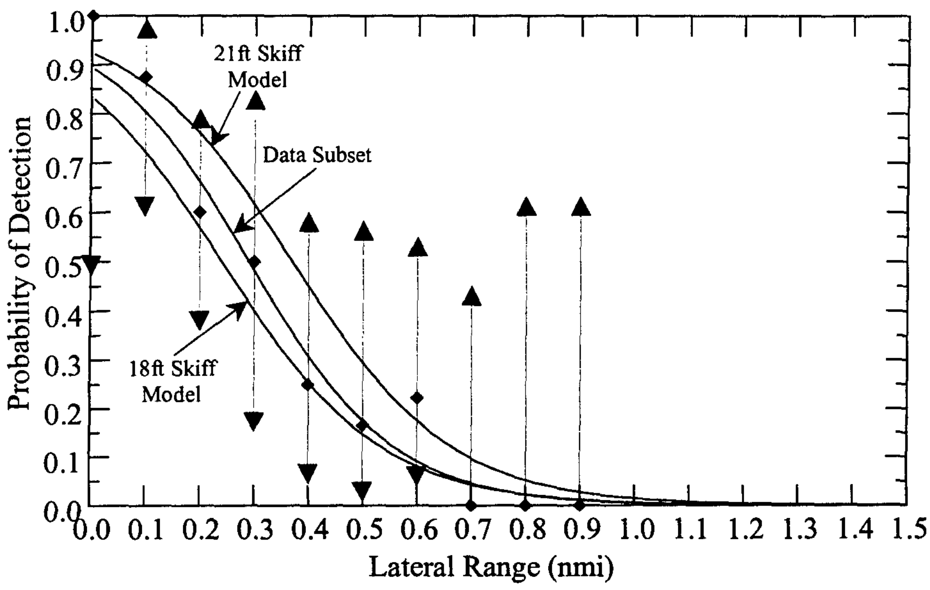

Figure 6-4. Boats – non-illuminated – poor search conditions.

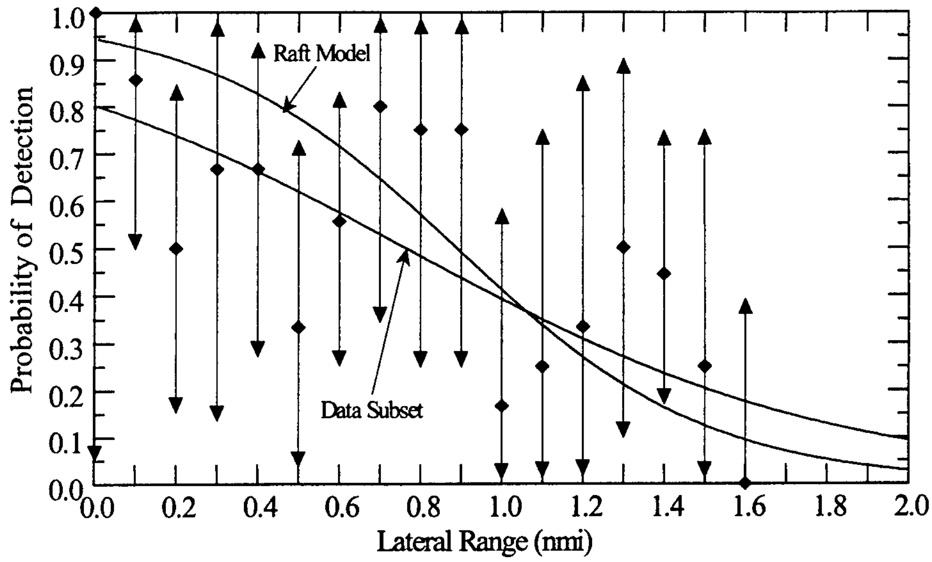

Figure 6-5. Rafts – illuminated – good search conditions.

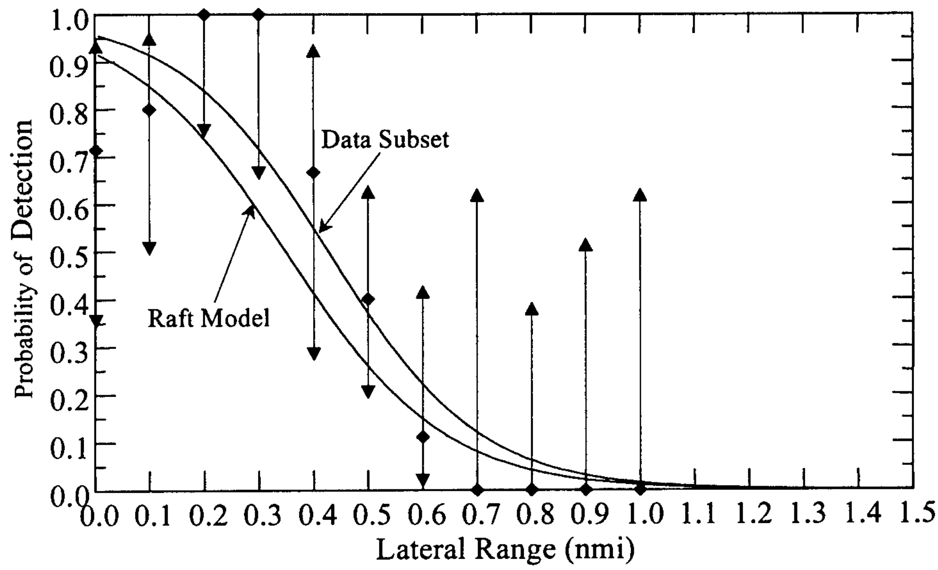

Figure 6-6. Rafts – illuminated – poor search conditions.

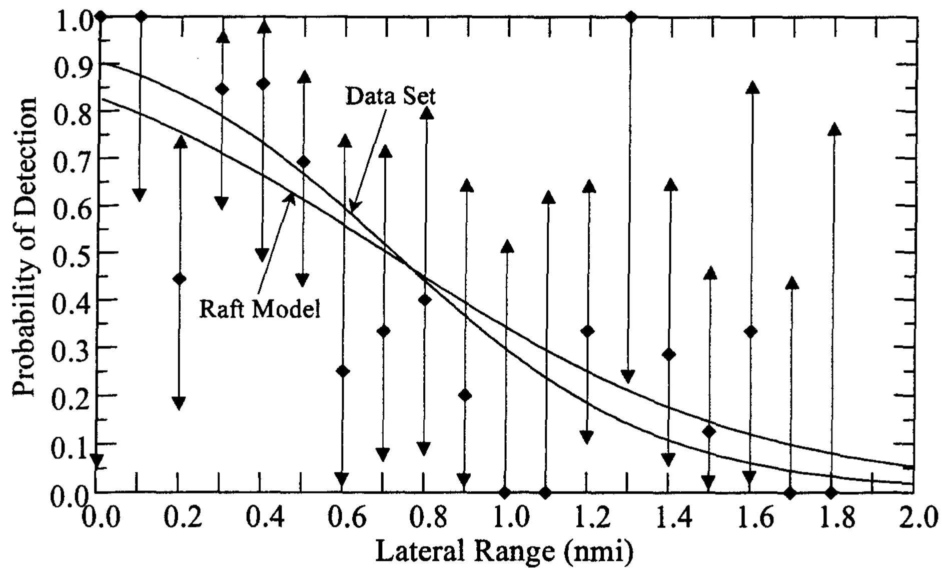

Figure 6-7. Rafts – non-illuminated – good search conditions.

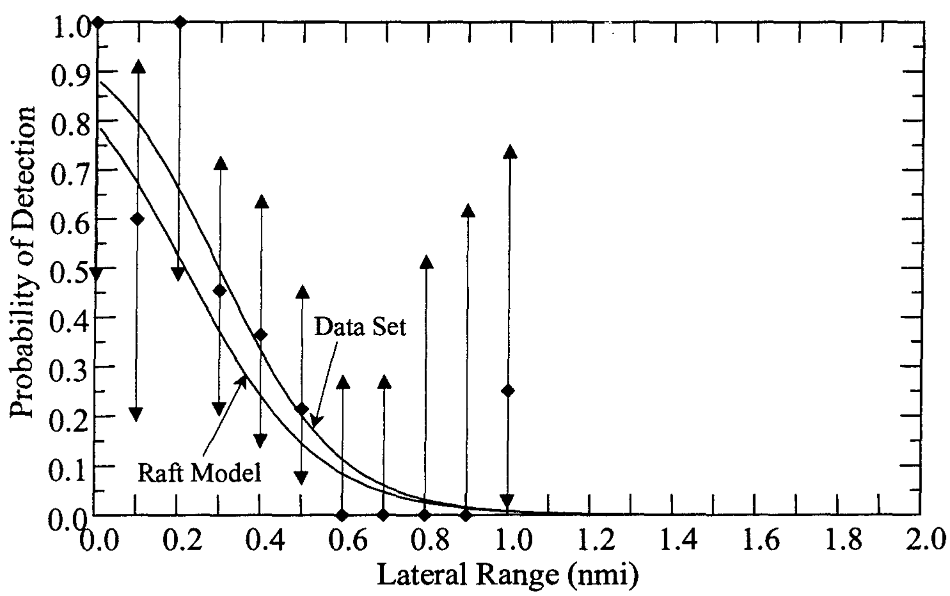

Figure 6-8. Rafts – non-illuminated – poor search conditions.

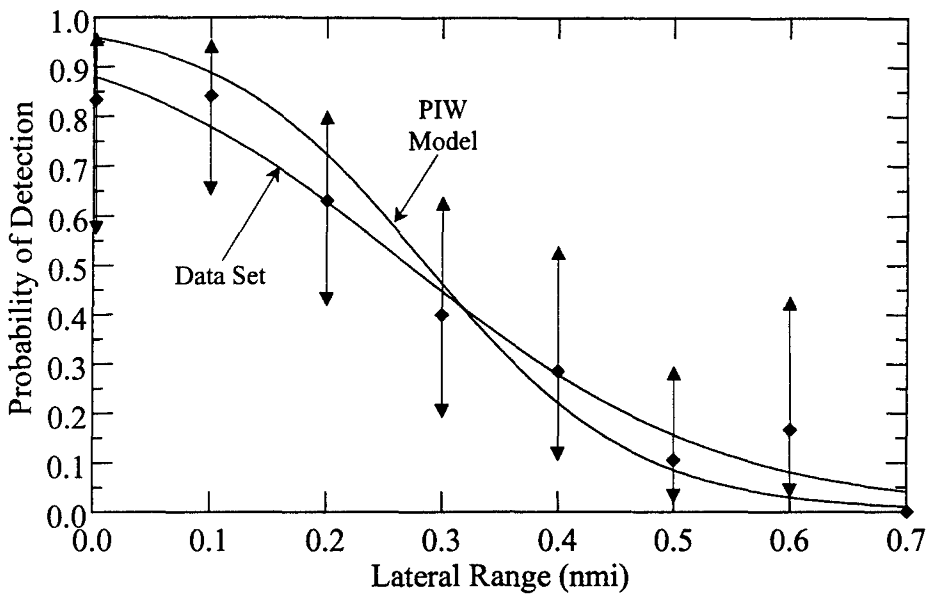

Figure 6-9. PIWs – illuminated – good search conditions.

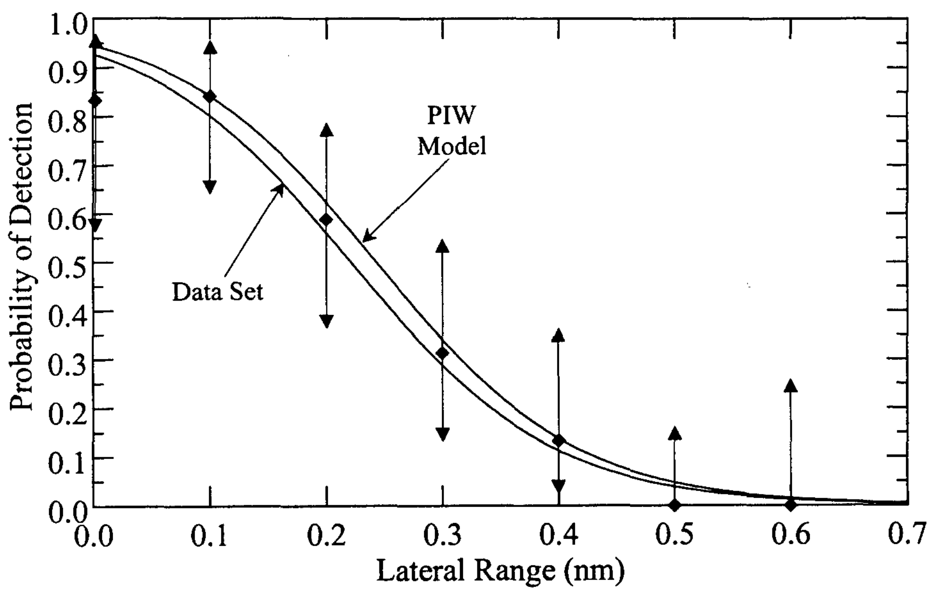

Figure 6-10. PIWs – illuminated – poor search conditions.

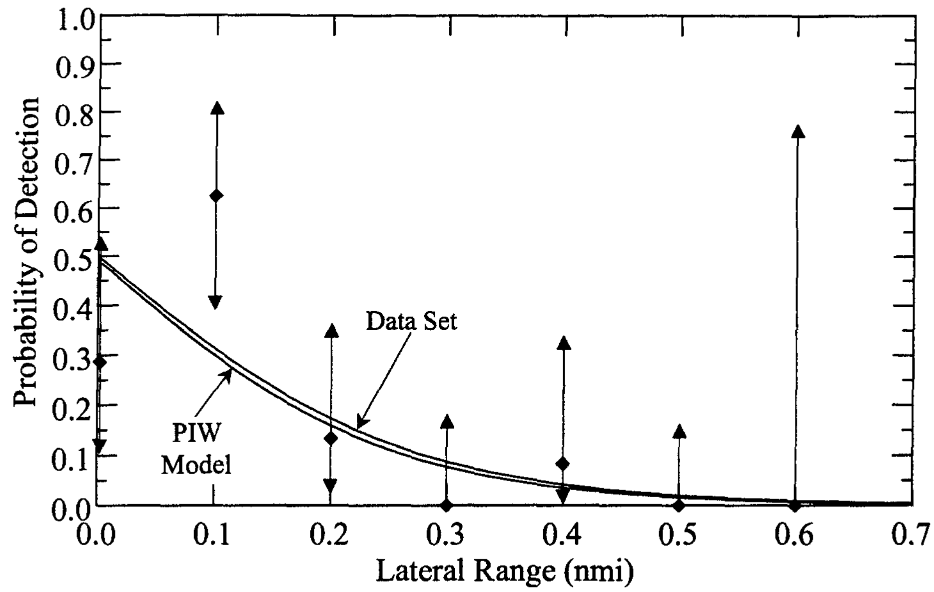

Figure 6-11. PIWs – non-illuminated – good search conditions.

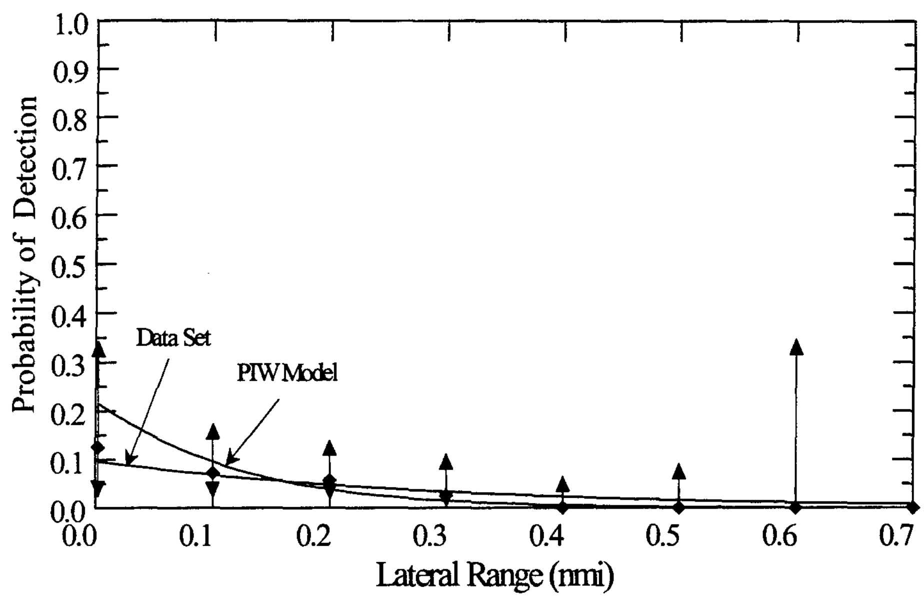

Figure 6-12. PIWs – non-illuminated – poor search conditions.

Table 6-2. Sweep width comparisons: data subset vs. combined data techniques.

	Good Search Conditions		Poor Search Conditions	
Illuminated	**Data Subset *W* Mean (nmi)**	**Combined Data *W* Mean [low, high]**	**Data Subset *W* Mean (nmi)**	**Combined Data *W* Mean [low, high]**
18-ft Skiff	1.06	0.94 [0.77, 1.11]	0.68	0.63 [0.51, 0.74]
21-ft Skiff		1.38 [1.14, 1.62]		0.95 [0.79, 1.10]
6-person raft	1.76	1.81 [1.37, 2.25]	0.87	0.72 [0.62, 0.83]
PIWs w/ PFD	0.58	0.58 [0.51, 0.65]	0.46	0.50 [0.43, 0.56]
Non-Illuminated				
18-ft Skiff	1.14	1.17 [0.96, 1.38]	0.61	0.53 [0.43, 0.64]
21-ft Skiff		1.49 [1.23, 1.76]		0.76 [0.63, 0.90]
6-person raft	1.58	1.38 [1.05, 1.70]	0.63	0.51 [0.41, 0.60]
PIWs w/ PFD	0.18	0.16 [0.13, 0.18]	0.05	0.05 [0.04, 0.06]

6.3 LATERAL RANGE CURVE MATHEMATICAL MODELS

The following information is based on the logistic regression output of the combined data model. For ease of understanding, the four models listed are based on the four target types. The information for each model is based on the discussion of how the lateral range curve is constructed based on the techniques detailed in section 2.

The regression coefficients are numeric. The regression variables are in capital letters. A discussion of each variable type follows the model listings. Each model makes no distinction between HH-60 and HH-65 searcher type. Each model assumes that when illumination is used, it is landing light illumination. No distinction is made between use of one or two landing lights.

6.3.1 Model for 18-ft Skiff

<u>Constant Coefficient:</u>
(NO_ILLUMINATION* (2.5321 + MOONVIS*PHS* 0.9128)) +
(ANY_ILLUMINATION* 2.9290) +
(-0.5148/VIS) +
(HS* -0.1914) +
(WHCAPS* -0.3454)

<u>Lateral Range Coefficient:</u>
(-4.6882) +
(MOONVIS*PHS* 1.7056) +
(CLDC* -2.8082) +
(TOT* -0.3167) +
(3_Person_Search* -1.3322)

6.3.2 Model for 21-ft Skiff

Constant Coefficient:
(NO_ILLUMINATION* (3.4079 + MOONVIS*PHS* 0.9128)) +
(ANY_ILLUMINATION* 4.1075) +
(-0.5148/VIS) +
(HS* -0.1914) +
(WHCAPS* -0.3454)

Lateral Range Coefficient:
(-4.6882) +
(MOONVIS*PHS* 1.7056) +
(CLDC* -2.8082) +
(TOT* -0.3167) +
(3_Person_Search* -1.3322)

6.3.3 Model for 6-Person Raft

Constant Coefficient:
(NO_ILLUMINATION* (2.3635 + MOONVIS*PHS* 0.9128)) +
(ANY_ILLUMINATION* 3.1767) +
(-0.5148/VIS) +
(HS* -0.1914) +
(WHCAPS* -0.3454)

Lateral Range Coefficient:
(-3.8437) +
(MOONVIS*PHS* 1.7056) +
(CLDC* -2.8082) +
(TOT* -0.3167) +
(3_Person_Search* -1.3322)

6.3.4 Model for PIW w/ PFD

Constant Coefficient:
(NO_ILLUMINATION* (0.0 + MOONVIS*PHS* 0.9128)) +
(ANY_ILLUMINATION* 3.7232) +
(-0.5148/VIS) +
(HS* -0.1914) +
(WHCAPS* -0.3454)

Lateral Range Coefficient:
(-8.4183) +
(MOONVIS*PHS* 1.7056) +
(CLDC* -2.8082) +

(TOT* -0.3167) +
(3_Person_Search* -1.3322)

Notes on all Models:

Boolean Variables:
(Any_Illumination)= 1 – (No_Illumination)

(3_Person_Search) = 0 for 4_Person_Search

MOONVIS=0 if the moon is below the horizon or cannot be seen with NVGs

0, 1, 2 Variable:
WHCAPS (0=none), (1=few), (2=many) generally need >18 knots of wind for (many)
For completeness, if a near-IR illuminator is in use, the whitecap term is dropped.

Continuous Variables:
Moon Phase (PHS) taken from Nautical Almanac, decimal fraction of amount of face showing (completely full moon = 1.0), (10 percent of face showing = 0.1)

Cloud Cover (CLDC) = 1 if fully overcast, 0.5 if sky is 50 percent covered with clouds.

Hs = height of significant waves in feet.

VIS = visibility in miles. {1/VIS is a proxy for how poor the visibility is.}

TOT = time-on-task, time in hours spent searching with NVGs. At the beginning of a search, this variable should be set to 1. With a very fatigued crew, set the variable to 5.

6.3.5 Calculation of Sweep Width

Using the above models:

Let C = the Constant Coefficient
Let LR = the Lateral Range Coefficient

Then $W = (-2/LR)*LN(1 + e^{C})$

6.3.6 Logistic Regression Output from the SYSTAT Software

The logistic regression output from SYSTAT 7.0 software looks very similar to table 6-3. Only the codes have been changed in the left column to agree with the terminology used consistently in this report. Two measures of "goodness of fit" are listed in the last two columns. The t-ratio indicates a better data fit as it becomes larger in absolute value. The p-value indicates a better data fit as it becomes smaller. The standard error (S.E.) of the estimate is a 1 standard deviation measure of the uncertainty in the regression coefficient. Section 2 discusses how the S.E. is used to estimate the uncertainty in sweep width. For completeness, table 6-3 lists both the combined HH-60/HH-65 model and the separated HH-60/HH-65 model. The log likelihood of the separated model is less negative (a higher log likelihood) and indicates that the separated model is a better statistical fit to the data.

Table 6-3. SYSTAT 7.0 Model Output.

Combined HH-60/HH-65 Model based on all data

Log Likelihood: -940.5581

Parameter	Estimate	S.E.	t-ratio	p-value
18_ft_Skiff*NO_ILLUMINATION	2.5321	0.3069	8.2497	0.0000
21_ft_Skiff*NO_ILLUMINATION	3.4079	0.3891	8.7595	0.0000
6_MAN_RAFT*NO_ILLUMINATION	2.3635	0.2240	10.5496	0.0000
18_ft_Skiff*ANY_ILLUMINATION	2.9290	0.3412	8.5837	0.0000
21_ft_Skiff*ANY_ILLUMINATION	4.1075	0.4226	9.7192	0.0000
6_MAN_RAFT*ANY_ILLUMINATION	3.1767	0.2416	13.1492	0.0000
PIW_W/_PFD*ANY_ILLUMINATION	3.7232	0.2537	14.6728	0.0000
MOONVIS*PHS*NO_ILLUMINATION	0.9128	0.2131	4.2841	0.0000
1/VIS	-0.5148	0.1470	-3.5025	0.0005
HS	-0.1914	0.0529	-3.6183	0.0003
WHCAPS*No_Near_IR_Illuminator	-0.3454	0.1334	-2.5898	0.0096
LATRNG*SKIFF	-4.6882	0.5577	-8.4067	0.0000
LATRNG*6_MAN_RAFT	-3.8437	0.5464	-7.0347	0.0000
LATRNG*PIW_w/_PFD	-8.4183	0.7637	-11.0233	0.0000
LATRNG*MOONVIS*PHS	1.7056	0.4561	3.7392	0.0002
LATRNG*CLDC	-2.8082	0.4374	-6.4200	0.0000
LATRNG*TOT	-0.3167	0.0835	-3.7910	0.0002
LATRNG*3_Person_Search	-1.3322	0.3708	-3.5927	0.0003

Separated HH-60/HH-65 Model based on all data

Log Likelihood: -935.9610

Parameter	Estimate	S.E.	t-ratio	p-value
18_FT_SKIFF*NO_ILLUMINATION	0.5628	0.3068	8.3521	0.0000
21_FT_SKIFF*NO_ILLUMINATION	3.3196	0.3892	8.5298	0.0000
6_MAN_RAFT*NO_ILLUMINATION	2.3828	0.2248	10.5977	0.0000
18_FT_SKIFF*ANY_ILLUMINATION	2.7764	0.3417	8.1262	0.0000
21_FT_SKIFF*ANY_ILLUMINATION	3.9211	0.4197	9.3421	0.0000
6_MAN_RAFT*ANY_ILLUMINATION	3.0151	0.2459	12.2623	0.0000
PIW_W/_PFD*ANY_ILLUMINATION	3.6793	0.2561	14.3653	0.0000
MOONVIS*PHS*NO_ILLUMINATION	1.0539	0.2185	4.8243	0.0000
1/VIS	-0.5511	0.1469	-3.7509	0.0002
HS	-0.1555	0.0543	-2.8618	0.0042
WHCAPS*No_Near_IR_Illuminator	-0.3841	0.1337	-2.8719	0.0041
LATRNG*SKIFF	-4.4766	0.5491	-8.1528	0.0000
LATRNG*6_MAN_RAFT	-3.5651	0.5614	-6.3510	0.0000
LATRNG*PIW_W/_PFD	-8.3857	0.7705	-10.8833	0.0000
LATRNG*MOONVIS*PHS	1.6474	0.4602	3.5798	0.0003
LATRNG*CLDC	-2.7482	0.4454	-6.1709	0.0000
LATRNG*TOT	-0.2881	0.0832	-3.4603	0.0005
LATRNG*3_PERSON_SEARCH	-1.6468	0.3837	-4.2917	0.0000
LATRNG*H60	-1.0857	0.3668	-2.9598	0.0031

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SECTION 7

HH-60/HH-65 SWEEP WIDTH TABLES FOR NVG USE

7.1 INTRODUCTION

The following sweep width tables have been generated from all data taken from the 1991 through 1994 HH-60 NVG field tests and from the 1997 through 1998 HH-65 NVG field tests against identical 18- and 21-ft skiff, 6-person life raft, and PIW w/PFD targets. The target types are pictured and described in section 1.

The sweep width table results from a combined HH-60/HH-65 data analysis to provide a consistent model across all four target types. A distinction is made between illuminated and non-illuminated search. Illumination implies use of either one or two landing lights, not use of a near-IR illuminator.

Sweep width values associated with each target type are normally rounded to the nearest 0.1 nmi. Exceptions have been made when the model predicts ***W*** will be less than 0.075 nmi. These values are listed to the nearest 0.01 nmi. The accuracy of these sweep widths should not be construed as being higher, but rather, only listed to a higher precision.

7.2 ABBREVIATIONS

The following abbreviations are used in the tables:

MoonVis	Moon Visible through NVGs (Yes = 1, No = 0)
PHS	Moon Phase (decimal fraction of face showing, Full=1) (MoonVis * PHS = 0 whenever the moon is below the horizon or not visible)
Vis	Estimated Visibility in nmi (when > 15 nmi, use 15)
CLDC	Cloud cover (decimal fraction estimate of cloud cover [full overcast = 1])
Hs	Height of significant wave in feet
WHCAPS	Whitecaps (None = 0, Few = 1, Many = 2)
TOT	Time on Task (Time spent searching with NVGs)

7.3 STANDARD SEARCH CONDITIONS

For simplicity of presentation, the sweep widths presented follow the same scheme used in section 4 to standardize search conditions. One additional search condition, "very poor," has been added to deal with deteriorated weather and visibility conditions from the "poor" search condition. Table 7-1 lists the search conditions used to present the sweep widths listed in table 7-2.

Table 7-1. Definition of standard search conditions.

Search Condition	MOONVIS * Phase	VIS	CLDC	Hs	WHCAPS	TOT
Excellent	0.8	15	0.25	1	0	1
Good - Moon Visible	0.5	15	0.25	2	0	1
Good – No Moon	0	15	0.25	2	0	1
Fair	0	3	0.8	3	1	1
Poor	0	1	1	5	2	1
Very Poor	0	<=0.5	1	6	2	1

7.4 COMBINED HH-60/HH-65 NVG SWEEP WIDTH TABLES

For the standard search conditions defined above, table 7-2 lists the sweep widths produced by the mathematical model of search performance described in section 6. Hundreds of combinations of environmental conditions are possible, but the standard conditions were chosen to provide a representative sample of expected operational scenarios. The selections do not match (and should not be confused with) the "good" and "poor" search conditions used in the 12 graphs of section 6. Almost any combination of normal conditions will produce sweep width estimates that fall within the range of values listed in table 7-2. Search planners must be aware that the PIW sweep widths listed in table 7-2 are valid for persons wearing PFDs with retro-reflective tape.

Table 7-2. Combined HH-60/HH-65 sweep width table.

Standard Search Condition	Target	Illuminated *W* (nmi)	Non-Illuminated *W* (nmi)
Excellent	18-ft skiff	1.4	1.4
	21-ft skiff	1.8	1.8
	6-person raft*	1.7	1.7
	PIW w/ PFD*	0.9	0.2
Good Moon Visible	18-ft skiff	1.1	1.1
	21-ft skiff	1.5	1.4
	6-person raft	1.4	1.2
	PIW w/ PFD	0.8	0.2
Good No Moon	18-ft skiff	0.9	0.8
	21-ft skiff	1.3	1.1
	6-person raft	1.2	0.9
	PIW w/ PFD	0.7	0.1
Fair	18-ft skiff	0.5	0.5
	21-ft skiff	0.8	0.7
	6-person raft	0.7	0.5
	PIW w/ PFD	0.5	0.05
Poor	18-ft skiff	0.3	0.2
	21-ft skiff	0.5	0.4
	6-person raft	0.4	0.2
	PIW w/ PFD	0.3	0.02
Very Poor	18-ft skiff	0.1	0.1
	21-ft skiff	0.3	0.2
	6-person raft	0.15	0.1
	PIW w/ PFD	0.14	0.00

* - All PFDs and rafts in this table have attached retro-reflective tape.

Appendix A lists the field test data from exercise reconstruction. Three field tests are represented by the data in appendix A: Fall 1997, Spring 1998, and Fall 1998, respectively.

Appendix B presents a procedure to enable a search planner to select a standard base sweep width for a selected target type and increase or decrease the sweep width estimate based on deviations from average search conditions.

7.5 CONCLUSIONS AND RECOMMENDATIONS

The appendix B procedure to calculate sweep width should be considered as the basis of new NVG sweep width tables to be placed either in the National Search and Rescue Manual or in the Coast Guard Addendum.

The Coast Guard should consider an aggressive campaign to educate the maritime community on the benefits of using retro-reflective material to increase target visibility during night search and rescue operations.

Due to the night visibility improvement of PIWs wearing PFDs with retro-reflective material, the Coast Guard should consider mandating the use of retro-reflective material on all PFDs.

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APPENDIX A HH-65A NVG SWEEP WIDTH DATA

1997-1998 FIELD TEST SERIES

CG-6544 — 15 SEP 97 SEARCHES 1-3

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0.2	0	15	6	0.1	2.6	0	1	80	27.6	28.4	0	1	32	1	1	1	60	300	2	629	10	3	0	0	0	12	3
1	0	0.3	0	15	5.8	0.1	2.6	0	-1	80	27.6	28.4	0	1	34	1	-1	1	60	300	2	629	10	3	0	0	0	12	3
0	0	0.1	0	15	6	0.1	2.6	0	-1	80	27.6	28.4	0	1	32	1	0	1	60	300	-9	-9	-9	3	0	0	0	12	3
0	0.3	0.2	0	15	6	0.1	2.6	0	0	80	27.6	28.4	-1	1	33	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	0.3	0	15	5.8	0.1	2.6	0	0	80	27.6	28.4	1	1	34	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	0.4	0	15	5.8	0.1	2.6	0	0	80	27.6	28.4	-1	1	36	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.5	0.5	0	15	6.4	0.1	2.6	0	0	80	27.6	28.4	1	1	37	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.5	0.1	0	15	6	0.1	2.6	0	0	80	27.6	28.4	1	1	32	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
1	0.1	2.3	0	15	6.6	0.5	2.6	0	0	76	27.8	28.4	-1	1	52	1	0	1	60	300	3	631	1	3	0	0	0	3	3
1	0.2	2.3	0	15	6.2	0.5	2.3	0	0	76	27.8	28.4	-1	1	53	1	0	1	60	300	3	631	1	3	0	0	0	9	3
1	0	2.4	0	15	6.2	0.5	2.3	0	0	76	27.8	28.4	-1	1	53	1	0	1	60	300	3	631	1	3	0	0	0	9	3
1	0.1	2.5	0	15	6.2	0.5	2.3	0	0	76	27.8	28.4	0	1	54	1	0	1	60	300	2	629	2	3	0	0	0	2	3
0	0.4	2.6	0	15	5.4	0.5	3	0	0	76	27.8	28.4	1	1	54	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	2.6	0	15	5.4	0.5	3	0	0	76	27.8	28.4	1	1	55	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	2.6	0	15	5.4	0.5	3	0	0	76	27.8	28.4	-1	1	55	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.5	2.7	0	15	6	0.7	2.3	0	0	76	27.8	28.4	1	1	55	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	2.8	0	15	6	0.7	2.3	0	0	81.4	27.8	28.4	-1	1	55	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	2.9	0	15	6.6	0.7	2.6	0	0	81.4	27.8	28.4	1	1	56	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	3	0	15	6.6	0.7	2.6	0	0	81.4	27.8	28.4	-1	1	56	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.1	3	0	15	6.6	0.7	2.6	0	0	81.4	27.8	28.4	-1	1	56	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
1	0	3.6	0	15	5.4	0.7	2.3	0	-1	81.4	27.8	28.4	0	1	57	1	-1	1	60	300	2	629	10	3	0	0	0	0.5	3
1	0.2	3.6	0	15	5.4	0.7	2.3	0	0	81.4	27.8	28.4	0	1	57	1	-1	1	60	300	2	629	10	3	0	0	0	1.5	3
1	0	3.8	0	15	5.4	0.7	2.6	0	-1	81.4	27.8	28.4	0	1	57	1	-1	1	60	300	2	629	10	3	0	0	0	12	3
0	0.6	3.8	0	15	5.4	0.7	2.6	0	0	81.4	27.8	28.4	1	1	56	1	0	1	60	300	1	630	10	3	0	0	0	9	3
0	0.4	3.5	0	15	6	0.7	2.3	0	0	81.4	27.8	28.4	-1	1	56	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	3.5	0	15	6	0.7	2.3	0	0	81.4	27.8	28.4	1	1	56	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	3.7	0	15	5.4	0.7	2.3	0	0	81.4	27.8	28.4	1	1	57	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	4.2	0	15	5.4	0.5	2.6	0	0	77	27.8	28.4	1	1	53	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3

CG-6501 — 15 SEP 97 SEARCH 1

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
0	0.4	0	0	15	5.8	0.1	2.6	0	0	80	27.2	28.1	-1	1	33	1	0	1	60	300	-9	-9	-9	3	0	1	1	3	3

CG-6544 — 17 SEP 97 SEARCHES 1-4

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0.2	0	10	7.2	0.7	2.3	1	0	69	28.1	28.7	0	1	12	1	0	1	60	300	2	630	14	3	0	0	0	1	3
1	0.1	0.4	0	10	8	0.7	2.3	1	0	69	28.1	28.7	0	1	15	1	0	1	60	300	1	629	12	3	0	0	0	10	3
0	0.1	0	0	10	7.4	0.7	2.3	1	0	69	28.1	28.7	1	1	10	1	-1	1	60	300	-9	-9	-9	3	0	0	0	3	3

0	0.2	0.2	0	10	7.2	0.7	2.3	1	0	69	28.1	28.7	-1	1	12	1	1	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	0.2	0	10	7.2	0.7	2.3	1	0	69	28.1	28.7	-1	1	13	1	1	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.5	0.3	0	10	7.2	0.7	2.3	1	0	69	28.1	28.7	-1	1	14	1	1	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.1	0.3	0	10	8.2	0.7	2.3	1	0	69	28.1	28.7	-1	1	15	1	1	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	0.5	0	10	8.2	0.7	2.3	1	0	69	28.1	28.7	1	1	16	1	-1	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	0.5	0	10	8.2	0.7	2.3	1	0	69	28.1	28.7	-1	1	16	1	1	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	0.5	0	10	8.2	0.7	2.3	1	0	69	28.1	28.7	-1	1	17	1	1	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	0.6	0	10	8.2	0.7	2.3	1	0	69	28.1	28.7	-1	1	18	1	1	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.5	0.6	0	10	8	0.7	2.3	1	0	69	28.1	28.7	-1	1	18	1	1	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.1	0.7	0	10	8	0.7	2.3	1	0	69	28.1	28.7	-1	1	18	1	1	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.5	0.7	0	10	8	0.7	2.3	1	0	69	28.1	28.7	1	1	19	1	-1	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	0.8	0	10	7.4	0.7	2.3	1	0	69	28.1	28.7	-1	1	20	1	1	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	0.9	0	10	7.4	0.7	2.3	1	0	69	28.1	28.7	-1	1	21	1	1	1	60	300	-9	-9	-9	3	0	0	0	3	3
1	0.4	0	0	10	7.4	0.7	2.3	1	0	69	28.1	28.7	1	1	10	1	-1	1	60	300	3	631	5	3	0	0	0	3	3
1	0.1	0.1	0	10	7.4	0.7	2.3	1	0	69	28.1	28.7	1	1	11	1	-1	1	60	300	3	631	5	3	0	0	0	3	3
0	0	0.5	0	10	7.4	0.7	2.3	1	0	69	28.1	28.7	1	1	16	1	-1	1	60	300	-9	-9	-9	3	0	0	0	3	3
1	0.1	1.1	0	10	8.2	0.6	2.3	1	-1	70	28.1	28.7	0	1	24	1	-1	1	60	300	1	629	12	3	0	0	0	10	3
1	0.2	1.3	0	10	8.2	0.6	2.3	1	-1	70	28.1	28.7	1	1	26	1	-1	1	60	300	1	629	12	3	0	0	0	11	3
1	0.1	1.7	0	10	8.4	0.6	2.3	1	0	70	28.1	28.7	-1	1	32	1	0	1	60	300	3	631	5	3	0	0	0	2	3
0	0.1	1.1	0	10	7	0.6	2.3	1	0	70	28.1	28.7	-1	1	23	1	1	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	1.1	0	10	7	0.6	2.3	1	0	70	28.1	28.7	1	1	24	1	-1	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	1.2	0	10	8.2	0.6	2.3	1	0	70	28.1	28.7	-1	1	24	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	1.2	0	10	8.2	0.6	2.3	1	0	70	28.1	28.7	-1	1	25	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	1.2	0	10	8.2	0.6	2.3	1	0	70	28.1	28.7	-1	1	25	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	1.3	0	10	7.8	0.6	2.3	1	0	70	28.1	28.7	1	1	26	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.1	1.5	0	10	7.8	0.6	2.3	1	0	70	28.1	28.7	-1	1	28	1	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.1	1.5	0	10	7.8	0.6	2.3	1	0	70	28.1	28.7	0	1	29	1	1	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0	1.6	0	10	7.8	0.6	2.3	1	0	70	28.1	28.7	0	1	29	1	0	1	60	300	-9	-9	-9	3	0	0	0	0	3
0	0.2	1.6	0	10	7.8	0.6	2.3	1	0	70	28.1	28.7	-1	1	30	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	1.6	0	10	7.8	0.6	2.3	1	0	70	28.1	28.7	1	1	31	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.1	1.8	0	10	8.4	0.6	2.6	1	0	70	28.1	28.7	-1	1	33	1	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
1	0.1	3.4	0	10	7.2	0.5	2.3	0	-1	67	28.2	28.7	1	1	51	0	0	1	60	300	2	630	14	3	0	0	0	3	3
0	0	3	0	10	6.8	0.5	2.6	0	0	67	28.2	28.7	0	1	47	0	0	1	60	300	-9	-9	-9	3	0	0	0	0	3
0	0.3	3	0	10	7.6	0.5	2.3	0	-1	67	28.2	28.7	1	1	47	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	3	0	10	7.6	0.5	2.3	0	-1	67	28.2	28.7	1	1	47	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.5	3.2	0	10	7	0.5	2.6	0	1	67	28.2	28.7	-1	1	50	0	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.4	3.4	0	10	7.2	0.5	2.3	0	-1	67	28.2	28.7	1	1	52	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	3.4	0	10	7.2	0.5	2.3	0	1	67	28.2	28.7	-1	1	52	0	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	3.5	0	10	7.4	0.5	2.6	0	1	67	28.2	28.7	-1	1	52	0	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0	3.6	0	10	7.4	0.5	2.6	0	0	67	28.2	28.7	0	1	53	0	0	1	60	300	-9	-9	-9	3	0	0	0	0	3
0	0.2	3.1	0	10	7.6	0.5	2.3	0	1	67	28.2	28.7	-1	1	47	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
1	0.1	4.1	0	10	7	0.9	2.3	0	0	68	28.1	28.7	0	1	58	0	-1	1	60	300	2	630	14	3	0	0	0	11	3
0	0.2	4	0	10	7	0.9	2.3	0	-1	68	28.1	28.7	1	1	58	0	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	4.1	0	10	7	0.9	2.3	0	1	68	28.1	28.7	-1	1	58	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	4.2	0	10	7	0.9	2.3	0	1	68	28.1	28.7	-1	1	59	0	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	4.2	0	10	7	0.9	2.3	0	-1	68	28.1	28.7	1	1	60	0	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	4.3	0	10	7.6	0.9	2.3	0	-1	68	28.1	28.7	1	1	61	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0	4.4	0	10	7.6	0.9	2.3	0	0	68	28.1	28.7	0	1	61	0	-1	1	60	300	-9	-9	-9	3	0	0	0	0	3
0	0.1	4.5	0	10	6.2	0.9	2.3	0	1	68	28.1	28.7	-1	1	61	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	4.5	0	10	6.2	0.9	2.6	0	1	68	28.1	28.7	-1	1	62	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	4.6	0	10	6.2	0.9	2.6	0	1	68	28.1	28.7	-1	1	63	0	0	1	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.1	4.7	0	10	5.8	0.9	2.6	0	1	68	28.1	28.7	-1	1	64	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3

0	0.1	4.7	0	10	5.8	0.9	2.3	0	1	68	28.1	28.7	-1	1	65	0	0	1	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	4.8	0	10	5.8	0.9	2.6	0	1	68	28.1	28.7	-1	1	65	0	0	1	60	300	-9	-9	-9	3	0	0	0	9	3

CG-6501 **17 SEP 97 SEARCHES 1-3**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0.2	0	10	8	0.7	2.3	0	-1	69	28.2	28.7	0	1	18	1	-1	1	60	300	3	627	12	3	0	1	1	10	3
1	0.1	0.2	0	10	8	0.7	2.3	0	-1	69	28.2	28.7	0	1	19	1	-1	1	60	300	1	625	12	3	0	1	1	11	3
1	0.2	0.2	0	10	8	0.7	2.3	0	0	69	28.2	28.7	-1	1	19	1	0	1	60	300	3	627	12	3	0	1	1	2	3
1	0.1	0.4	0	10	7.4	0.7	2.3	0	0	69	28.1	28.7	0	1	21	1	0	1	60	300	2	626	14	3	0	1	1	1	3
1	0.1	0.7	0	10	8.2	0.6	2.3	0	0	70	28.1	28.7	0	1	24	1	0	1	60	300	2	626	14	3	0	1	1	3	3
1	0.2	0.9	0	10	7.8	0.6	2.3	0	0	70	28.2	28.7	-1	1	27	1	0	1	60	300	3	627	12	3	0	1	1	2	3
0	0.5	0.1	0	10	8.2	0.7	2.3	0	0	69	28.1	28.7	-1	1	18	1	0	1	60	300	-9	-9	-9	3	0	1	1	2	3
0	0.3	0.4	0	10	7.4	0.7	2.3	0	0	69	28.1	28.7	-1	1	21	1	0	1	60	300	-9	-9	-9	3	0	1	1	2	3
0	0.5	0.5	0	10	7.4	0.6	2.3	0	0	70	28.1	28.7	1	1	22	1	0	1	60	300	-9	-9	-9	3	0	1	1	9	3
1	0.4	0.7	0	10	8.2	0.6	2.3	0	0	70	28.1	28.7	-1	1	24	1	0	1	60	300	2	626	14	3	0	1	1	3	3
0	0.3	1	0	10	7.8	0.6	2.3	0	0	70	28.2	28.7	-1	1	28	1	0	1	60	300	-9	-9	-9	3	0	1	1	3	3
1	**0.2**	**1.3**	**0**	**10**	**8.4**	**0.6**	**2.3**	**1**	**0**	**70**	**28.1**	**28.7**	**0**	**1**	**32**	**1**	**0**	**1**	**60**	**300**	**1**	**625**	**12**	**3**	**0**	**1**	**1**	**11**	**3**
1	**0.2**	**1.3**	**0**	**10**	**8.4**	**0.6**	**2.3**	**1**	**-1**	**70**	**28.1**	**28.7**	**0**	**1**	**32**	**1**	**-1**	**1**	**60**	**300**	**1**	**625**	**12**	**3**	**0**	**1**	**1**	**11**	**3**
1	**0.1**	**1.6**	**0**	**10**	**8.7**	**0.6**	**2.3**	**1**	**0**	**70**	**28.1**	**28.7**	**0**	**1**	**35**	**1**	**0**	**1**	**60**	**300**	**2**	**626**	**14**	**3**	**0**	**1**	**1**	**2.5**	**3**
1	**0.3**	**1.7**	**0**	**10**	**8**	**0.6**	**2.6**	**1**	**1**	**70**	**28.1**	**28.7**	**-1**	**1**	**36**	**1**	**0**	**1**	**60**	**300**	**1**	**625**	**12**	**3**	**0**	**1**	**1**	**10**	**3**
1	**0.1**	**1.8**	**0**	**10**	**8**	**0.6**	**2.6**	**1**	**0**	**70**	**28.1**	**28.7**	**0**	**1**	**38**	**1**	**0**	**1**	**60**	**300**	**2**	**626**	**14**	**3**	**0**	**1**	**1**	**1**	**3**
1	**0.2**	**2**	**0**	**10**	**8**	**0.6**	**2.6**	**1**	**0**	**70**	**28.1**	**28.7**	**0**	**1**	**41**	**1**	**-1**	**1**	**60**	**300**	**1**	**625**	**12**	**3**	**0**	**1**	**1**	**11**	**3**
1	**0.1**	**2.1**	**0**	**10**	**7.6**	**0.6**	**2.6**	**1**	**0**	**70**	**28.1**	**28.7**	**0**	**1**	**42**	**1**	**-1**	**1**	**60**	**300**	**1**	**625**	**12**	**3**	**0**	**1**	**1**	**11**	**3**
1	**0.2**	**1.3**	**0**	**10**	**8.4**	**0.6**	**2.3**	**1**	**-1**	**70**	**28.1**	**28.7**	**1**	**1**	**33**	**1**	**0**	**1**	**60**	**300**	**1**	**625**	**12**	**3**	**0**	**1**	**1**	**9**	**3**
0	**0.4**	**1.4**	**0**	**10**	**8.4**	**0.6**	**2.6**	**1**	**1**	**70**	**28.1**	**28.7**	**-1**	**1**	**34**	**1**	**0**	**1**	**60**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**1**	**1**	**9**	**3**
0	**0.4**	**1.7**	**0**	**10**	**8.7**	**0.6**	**2.3**	**1**	**-1**	**70**	**28.1**	**28.7**	**1**	**1**	**35**	**1**	**0**	**1**	**60**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**1**	**1**	**3**	**3**
0	**0.5**	**1.8**	**0**	**10**	**8**	**0.6**	**2.6**	**1**	**1**	**70**	**28.1**	**28.7**	**-1**	**1**	**38**	**1**	**0**	**1**	**60**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**1**	**1**	**3**	**3**
0	**0.3**	**1.8**	**0**	**10**	**8**	**0.6**	**2.6**	**1**	**-1**	**70**	**28.1**	**28.7**	**1**	**1**	**38**	**1**	**0**	**1**	**60**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**1**	**1**	**9**	**3**
0	**0.5**	**2**	**0**	**10**	**8**	**0.6**	**2.6**	**1**	**-1**	**70**	**28.1**	**28.7**	**1**	**1**	**40**	**1**	**0**	**1**	**60**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**1**	**1**	**3**	**3**
1	**0.1**	**1.7**	**0**	**10**	**8.7**	**0.6**	**2.6**	**1**	**1**	**70**	**28.1**	**28.7**	**-1**	**1**	**36**	**1**	**0**	**1**	**60**	**300**	**2**	**626**	**14**	**3**	**0**	**1**	**1**	**10**	**3**
1	0.1	4.1	0	10	6.2	0.9	2.3	0	1	68	28.1	28.7	-1	1	62	1	0	1	60	300	2	626	14	3	0	1	1	2	3
0	0.4	4.2	0	10	5.8	0.9	2.3	0	1	68	28.1	28.7	-1	1	63	1	0	1	60	300	-9	-9	-9	3	0	1	1	3	3
1	0.2	4.4	0	10	5.8	0.9	2.6	0	1	70	28.1	28.7	-1	1	62	1	0	1	60	300	2	626	14	3	0	1	1	2	3
1	0.4	4.4	0	10	5.8	0.9	2.6	0	0	70	28.1	28.7	0	1	64	1	0	1	60	300	1	625	12	3	0	1	1	10	3
1	0.2	4.4	0	10	5.8	0.9	2.6	0	0	70	28.1	28.7	0	1	64	1	0	1	60	300	1	625	12	3	0	1	1	10	3
1	0.1	4.6	0	10	5.8	0.9	2.6	0	0	70	28.1	28.7	0	1	65	1	-1	1	60	300	2	626	14	3	0	1	1	1	3
1	0	4.2	0	10	4.5	0.9	2.3	0	0	70	28.1	28.7	0	1	66	1	-1	1	60	300	3	627	12	3	0	1	1	11	3
0	0.3	4.7	0	10	6.4	0.9	2.3	0	1	70	28.1	28.7	-1	1	65	1	0	1	60	300	-9	-9	-9	3	0	1	1	9	3
0	0.1	5	0	10	5.2	0.9	2.3	0	-1	70	28.1	28.7	1	1	66	1	0	1	60	300	-9	-9	-9	3	0	1	1	9	3
0	0.3	5	0	10	5.2	0.9	2.3	0	1	70	28.1	28.7	-1	1	66	1	0	1	60	300	-9	-9	-9	3	0	1	1	3	3
0	0	5.1	0	10	4.5	0.9	2.3	0	0	70	28.1	28.7	0	1	66	1	-1	1	60	300	-9	-9	-9	3	0	1	1	12	3
0	0.1	5.3	0	10	3.7	0.9	2.3	0	-1	70	28.1	28.7	1	1	66	1	0	1	60	300	-9	-9	-9	3	0	1	1	9	3
0	0.4	4.7	0	10	6.8	0.9	2.3	0	-1	70	28.1	28.7	1	1	65	1	0	1	60	300	-9	-9	-9	3	0	1	1	9	3
1	0.4	4.8	0	10	6.8	0.9	2.3	0	-1	70	28.1	28.7	1	1	65	1	0	1	60	300	3	627	12	3	0	1	1	9	3
0	0.1	4.8	0	10	5.2	0.9	2.3	0	-1	70	28.1	28.7	1	1	65	1	-1	1	60	300	-9	-9	-9	3	0	1	1	9	3
0	0.4	4.9	0	10	5.2	0.9	2.3	0	-1	70	28.1	28.7	1	1	65	1	-1	1	60	300	-9	-9	-9	3	0	1	1	9	3
0	**0.6**	**0.7**	**0**	**12**	**12.2**	**1**	**3**	**1**	**0**	**79**	**19.3**	**18.3**	**-1**	**1**	**13**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
1	0.1	1.1	0	12	12.6	1	3	1	-1	84	19.1	18.3	0	1	10	0	-1	0.28	90	300	1	663	36	3	0	2	1	11	3
1	0	1.1	0	12	12.6	1	3	1	0	84	19.1	18.3	-1	1	10	0	0	0.28	90	300	2	662	36	3	0	2	1	1	3
1	0.1	1.2	0	12	12.6	1	3	1	0	84	19.1	18.3	0	1	8	0	0	0.28	90	300	1	663	36	3	0	2	1	10	3

1	0.1	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	8	0	0	0.28	90	300	1	663	36	3	0	2	1	0.5	3
1	0.2	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	0	1	7	0	0	0.28	90	300	3	665	6	3	0	2	1	2	3
1	0.1	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	6	0	0	0.28	90	300	2	662	36	3	0	2	1	1	3
1	0.1	1.6	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	5	0	0	0.28	90	300	2	662	36	3	0	2	1	1	3
1	0.2	1.6	0	12	12.1	1	2.6	1	0	84	19.1	18.4	0	1	4	0	0	0.28	90	300	3	665	6	3	0	2	1	3	3
0	0.5	1	0	12	11.7	1	2.6	1	0	84	19.2	18.2	1	1	10	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	1.1	0	12	11.7	1	3	1	0	84	19.2	18.2	1	1	9	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.5	1.2	0	12	11.7	1	3	1	0	84	19.2	18.2	-1	1	8	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.4	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	8	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.4	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	8	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	8	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.6	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	7	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.4	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	6	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	5	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.4	1.6	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	5	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.6	1.7	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	3	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.3	1.8	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	2	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.6	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	6	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	3
1	**0**	**3**	**0**	**12**	**11.1**	**1**	**3**	**1**	**-1**	**84**	**19.3**	**18.4**	**0**	**1**	**-10**	**0**	**-1**	**0.2**	**90**	**300**	**1**	**662**	**30**	**3**	**0**	**2**	**1**	**11**	**3**
1	**0.1**	**3.1**	**0**	**12**	**11.1**	**1**	**3**	**1**	**1**	**84**	**19.3**	**18.4**	**0**	**1**	**-11**	**0**	**0**	**0.2**	**90**	**300**	**1**	**662**	**30**	**3**	**0**	**2**	**1**	**11**	**3**
1	**0**	**3.2**	**0**	**12**	**11.1**	**1**	**3**	**1**	**1**	**84**	**19.3**	**18.4**	**0**	**1**	**-12**	**0**	**1**	**0.2**	**90**	**300**	**2**	**663**	**30**	**3**	**0**	**2**	**1**	**12**	**3**
1	**0.3**	**3.3**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**1**	**1**	**-13**	**0**	**0**	**0.2**	**90**	**300**	**4**	**664**	**240**	**3**	**0**	**2**	**1**	**9**	**3**
1	**0.2**	**3.3**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**0**	**1**	**-15**	**0**	**0**	**0.2**	**90**	**300**	**4**	**664**	**240**	**3**	**0**	**2**	**1**	**10**	**3**
1	**0.1**	**3.5**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**0**	**1**	**-15**	**0**	**0**	**0.2**	**90**	**300**	**1**	**662**	**30**	**3**	**0**	**2**	**1**	**10**	**3**
1	**0**	**3.5**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**0**	**1**	**-16**	**0**	**-1**	**0.2**	**90**	**300**	**2**	**663**	**30**	**3**	**0**	**2**	**1**	**12**	**3**
1	**0.2**	**3.6**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**1**	**1**	**-17**	**0**	**0**	**0.2**	**90**	**300**	**4**	**664**	**240**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.5**	**3**	**0**	**12**	**11.1**	**1**	**3**	**1**	**0**	**84**	**19.3**	**18.4**	**1**	**1**	**-11**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.4**	**3.1**	**0**	**12**	**11.1**	**1**	**3**	**1**	**0**	**84**	**19.3**	**18.4**	**1**	**1**	**-11**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.2**	**3.1**	**0**	**12**	**11.1**	**1**	**3**	**1**	**0**	**84**	**19.3**	**18.4**	**-1**	**1**	**-12**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.5**	**3.2**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**-1**	**1**	**-13**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**3**	**3**
0	**0.3**	**3.3**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**1**	**1**	**-13**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.5**	**3.3**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**-1**	**1**	**-13**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**3**	**3**
0	**0.3**	**3.4**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**0**	**1**	**-14**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**3**	**3**
0	**0.5**	**3.4**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**-1**	**1**	**-14**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**3**	**3**
0	**0.3**	**3.6**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**-1**	**1**	**-16**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.6**	**3.6**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**0**	**1**	**-17**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.2**	**3.7**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**-1**	**1**	**-18**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.5**	**3.7**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**-1**	**1**	**-18**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.2**	**3.8**	**0**	**12**	**11.5**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**1**	**1**	**-19**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**9**	**3**
0	**0.2**	**3.3**	**0**	**12**	**8.7**	**1**	**3**	**1**	**0**	**84**	**19.2**	**18.4**	**-1**	**1**	**-14**	**0**	**0**	**0.2**	**90**	**300**	**-9**	**-9**	**-9**	**3**	**0**	**2**	**1**	**3**	**3**
1	0.4	4	0	12	11.5	1	3	1	1	79	19.2	18.4	1	1	-21	0	0	0.2	90	300	1	662	30	3	0	2	1	9	3
1	0.1	4.1	0	12	11.5	1	3	1	-1	79	19.2	18.4	0	1	-22	0	0	0.2	90	300	1	662	30	3	0	2	1	10	3
1	0	4.1	0	12	11.5	1	3	1	0	79	19.2	18.4	-1	1	-22	0	-1	0.2	90	300	2	663	30	3	0	2	1	1	3
1	0	4.5	0	12	10.7	1	2.6	1	0	79	19.1	18.4	0	1	-26	0	0	0.28	90	300	1	662	30	3	0	2	1	12	3
1	0	4.6	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-28	0	1	0.28	90	300	2	663	30	3	0	2	1	2	3
1	0.3	4.7	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-29	0	0	0.28	90	300	4	665	10	3	0	2	1	9	3
0	0.5	4	0	12	11.5	1	3	1	0	79	19.2	18.4	1	1	-21	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.4	4.1	0	12	11.5	1	3	1	0	79	19.2	18.4	1	1	-22	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.4	4.4	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-25	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.3	4.4	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-25	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.2	4.4	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-26	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.5	4.4	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-26	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	3

0	0.5	4.5	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-26	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.6	4.5	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-27	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.4	4.6	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-27	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.1	4.6	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-28	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.6	4.7	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-28	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.5	4.7	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-28	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.4	4.7	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-29	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.1	4.8	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-29	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.2	4.8	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-30	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.2	0.8	0	12	3.7	0.2	1.3	0	0	70	27.7	28.8	0	1	8	1	-1	0.8	90	300	1	626	18	2	-1	1	1	10	3
1	0.2	1	0	12	3.3	0.2	1.3	0	0	70	27.6	28.8	0	1	10	1	0	0.8	90	300	1	626	18	2	-1	1	1	11	3
0	0.9	0.1	0	12	3.1	0	1.3	0	0	69	27.7	28.8	-1	1	0	1	1	0.8	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.1	0.3	0	12	2.9	0	1.3	0	0	69	27.7	28.8	1	1	2	1	-1	0.8	90	300	-9	-9	-9	2	-1	1	1	9	3
1	**0.3**	**2.3**	**0**	**12**	**3.7**	**0**	**1.3**	**0**	**0**	**70**	**27.7**	**28.7**	**0**	**1**	**15**	**1**	**0**	**0.8**	**90**	**300**	**1**	**626**	**18**	**2**	**-1**	**1**	**1**	**11**	**3**
1	**0.1**	**2.5**	**0**	**12**	**3.7**	**0.2**	**1.3**	**0**	**0**	**71**	**27.7**	**28.7**	**0**	**1**	**16**	**1**	**0**	**0.8**	**90**	**300**	**1**	**626**	**18**	**2**	**-1**	**1**	**1**	**12**	**3**
0	**0.7**	**2.2**	**0**	**12**	**3.9**	**0**	**1.3**	**0**	**1**	**70**	**27.7**	**28.7**	**-1**	**1**	**13**	**1**	**1**	**0.8**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**1**	**1**	**3**	**3**
0	**0.8**	**2.3**	**0**	**12**	**3.7**	**0**	**1.3**	**0**	**1**	**70**	**27.7**	**28.7**	**-1**	**1**	**15**	**1**	**1**	**0.8**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**1**	**1**	**3**	**3**
0	**1**	**2.5**	**0**	**12**	**3.7**	**0.2**	**1.3**	**0**	**1**	**71**	**27.7**	**28.7**	**-1**	**1**	**16**	**1**	**1**	**0.8**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**1**	**1**	**3**	**3**
0	**0.7**	**2.7**	**0**	**12**	**4.3**	**0.2**	**1.3**	**0**	**1**	**71**	**27.7**	**28.7**	**-1**	**1**	**20**	**1**	**1**	**0.8**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**1**	**1**	**3**	**3**
1	**0.5**	**2.8**	**0**	**12**	**4.3**	**0.2**	**1.3**	**0**	**-1**	**71**	**27.7**	**28.7**	**1**	**1**	**22**	**1**	**-1**	**0.8**	**90**	**300**	**3**	**628**	**18**	**2**	**-1**	**1**	**1**	**3**	**3**
1	**0.5**	**3**	**0**	**12**	**3.5**	**0.2**	**1.3**	**0**	**1**	**71**	**27.7**	**28.7**	**-1**	**1**	**23**	**1**	**1**	**0.8**	**90**	**300**	**3**	**628**	**18**	**2**	**-1**	**1**	**1**	**3**	**3**
1	**0.5**	**3**	**0**	**12**	**4.3**	**0.2**	**1.3**	**0**	**-1**	**71**	**27.7**	**28.7**	**1**	**1**	**24**	**1**	**-1**	**0.8**	**90**	**300**	**3**	**628**	**18**	**2**	**-1**	**1**	**1**	**3**	**3**
1	**0.3**	**2.4**	**0**	**12**	**4.3**	**0.2**	**1.3**	**0**	**-1**	**71**	**27.7**	**28.7**	**1**	**1**	**16**	**1**	**-1**	**0.8**	**90**	**300**	**3**	**628**	**18**	**2**	**-1**	**1**	**1**	**2**	**3**

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.2	0.7	0	12	3.3	0	1.3	0	1	70	27.7	28.8	-1	1	10	1	1	0.8	90	300	3	631	9	2	-1	0	0	3	3
1	0.3	0.9	0	12	3.9	0	1.3	0	1	70	27.7	28.8	-1	1	12	1	1	0.8	90	300	3	631	9	2	-1	0	0	3	3
0	0.4	0.3	0	12	3.3	0	1.3	0	0	70	27.7	28.8	-1	1	3	1	1	0.8	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.4	0.3	0	12	3.3	0	1.3	0	0	70	27.7	28.8	1	1	3	1	-1	0.8	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.9	0.6	0	12	3.7	0	1.3	0	1	70	27.7	28.8	-1	1	9	1	1	0.8	90	300	-9	-9	-9	2	-1	0	0	9	3
1	0.2	0.4	0	12	3.7	0	1.3	0	1	70	27.7	28.8	-1	1	4	1	1	0.8	90	300	2	630	18	2	-1	0	0	11	3
0	0.7	0.4	0	12	3.7	0	1.3	0	0	70	27.7	28.8	1	1	3	1	-1	0.8	90	300	-9	-9	-9	2	-1	0	0	3	3
0	**0.3**	**1.3**	**0**	**12**	**4.3**	**0.2**	**1.3**	**0**	**-1**	**71**	**27.6**	**28.8**	**1**	**1**	**16**	**1**	**-1**	**0.8**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
1	**0.2**	**1.3**	**0**	**12**	**4.3**	**0.2**	**1.3**	**0**	**0**	**71**	**27.6**	**28.8**	**1**	**1**	**16**	**1**	**0**	**0.8**	**90**	**300**	**2**	**629**	**18**	**2**	**-1**	**0**	**0**	**11**	**3**
0	**0.7**	**1.2**	**0**	**12**	**4.3**	**0.2**	**1.3**	**0**	**1**	**71**	**27.6**	**28.8**	**-1**	**1**	**14**	**1**	**1**	**0.8**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
1	0.3	3.1	0	12	2.3	0.3	1.3	0	0	70	27.5	28.7	1	1	39	1	0	0.8	90	30	2	629	20	2	-1	0	0	11	3
1	0.3	3.2	0	12	2.5	0	1.3	0	0	72	27.5	28.7	0	1	41	1	0	0.8	90	30	2	629	20	2	-1	0	0	10	3
1	0.2	3.4	0	12	1.9	0	1.3	0	0	72	27.5	28.7	1	1	44	1	0	0.8	90	30	1	630	20	2	-1	0	0	11	3
1	0.1	3.9	0	12	3.1	0	1.3	0	1	72	27.3	28.7	1	1	51	1	-1	0.8	90	30	2	629	20	2	-1	0	0	0.5	3
0	0.5	3.1	0	12	1.7	0.3	1.3	0	1	72	27.5	28.7	0	1	40	1	0	0.8	90	30	-9	-9	-9	2	-1	0	0	9	3
0	0.6	3.3	0	12	1.9	0	1.3	0	-1	72	27.5	28.7	0	1	43	1	0	0.8	90	30	-9	-9	-9	2	-1	0	0	3	3
0	0.5	3.4	0	12	1.9	0	1.3	0	1	72	27.5	28.7	0	1	44	1	0	0.8	90	30	-9	-9	-9	2	-1	0	0	9	3
1	0.5	3.5	0	12	1.9	0	1.3	0	0	72	27.5	28.7	0	1	45	1	-1	0.8	90	30	2	629	20	2	-1	0	0	1	3
0	0.5	3.6	0	12	2.9	0	1.3	0	1	72	27.4	28.7	0	1	47	1	0	0.8	90	30	-9	-9	-9	2	-1	0	0	9	3
0	1.1	3.8	0	12	1.6	0	1.3	0	-1	72	27.4	28.7	0	1	47	1	0	0.8	90	30	-9	-9	-9	2	-1	0	0	3	3

1	0.4	4.1	0	12	3.1	0	1.3	0	0	72	27.3	28.7	1	1	52	1	0	0.8	90	300	2	629	20	2	-1	0	0	2	3
1	0.7	4.1	0	12	3.1	0	1.3	0	0	72	27.3	28.7	0	1	53	1	1	0.8	90	300	3	631	11	2	-1	0	0	10	3
1	0.1	4.2	0	10	3.3	0.1	1.3	0	0	72	27.3	28.7	0	1	54	1	-1	0.8	90	300	1	630	20	2	-1	0	0	11	3
1	0	4.4	0	10	2.7	0.1	1.3	0	-1	72	27.4	28.7	0	1	55	1	0	0.8	90	300	2	629	20	2	-1	0	0	11.5	3
1	0.2	4.6	0	10	2.7	0.1	1.3	0	0	72	27.3	28.7	0	1	59	1	-1	0.8	90	300	1	630	20	2	-1	0	0	11	3
1	0.2	4.8	0	10	1.9	0.1	1.3	0	0	72	27.3	28.7	0	1	61	1	-1	0.8	90	300	2	629	20	2	-1	0	0	11	3
0	0.9	4	0	12	2.9	0	1.3	0	0	72	27.3	28.7	-1	1	52	1	0	0.8	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.8	4.4	0	10	3.3	0.1	1.3	0	0	72	27.4	28.7	1	1	55	1	0	0.8	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.6	4.5	0	10	2.7	0.1	1.3	0	0	72	27.3	28.7	-1	1	58	1	0	0.8	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.6	4.7	0	10	2.5	0.1	1.3	0	0	72	27.3	28.7	-1	1	60	1	0	0.8	90	300	-9	-9	-9	2	-1	0	0	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.5	0	0	15	10.3	0.4	2.3	0	0	78	27.9	28.4	-1	1	-32	0	1	0.5	90	300	3	627	20	2	-1	1	1	2	3
1	0.1	0.2	0	15	8.6	0.4	2	0	-1	78	27.9	28.4	0	1	-31	0	1	0.5	90	300	2	625	20	2	-1	1	1	1	3
1	0.2	0.6	0	15	10.9	0.4	2.3	0	0	78	27.9	28.4	1	1	-28	0	-1	0.5	90	300	2	625	20	2	-1	1	1	2	3
1	0.1	0.9	0	15	11.9	0.5	2.3	1	0	78	28	28.4	0	1	-25	0	0	0.5	90	300	2	625	20	2	-1	1	1	1	3
0	0.6	0.1	0	15	9.3	0.4	2	0	0	78	27.9	28.4	1	1	-32	0	-1	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
0	1	0.2	0	15	9.3	0.4	2	0	0	78	27.9	28.4	-1	1	-32	0	1	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
0	1	0.4	0	15	10.5	0.4	2	0	0	78	27.9	28.4	1	1	-30	0	-1	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.9	0.5	0	15	10.3	0.4	2.6	0	0	78	27.9	28.4	-1	1	-28	0	1	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.5	0.7	0	15	10.5	0.4	3	0	0	78	27.9	28.4	-1	1	-27	0	1	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.5	0.7	0	15	10.5	0.4	3	0	0	78	27.9	28.4	1	1	-27	0	-1	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
1	0.1	1.2	0	15	10.9	0.5	2.3	1	1	78	28	28.4	0	1	-22	0	0	0.5	90	300	2	625	22	2	-1	1	1	1	3
1	0.2	1.6	0	15	10.5	0.5	3	1	1	78	28	28.4	-1	1	-18	0	0	0.5	90	300	3	627	22	2	-1	1	1	11	3
1	0.2	2.1	0	15	11.1	0.4	2.6	1	0	72	28.1	28.4	1	1	-12	0	-1	0.5	90	300	2	625	22	2	-1	1	1	2	3
0	0.6	1.3	0	15	11.1	0.5	2.6	1	0	78	28	28.4	-1	1	-21	0	1	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.4	1.4	0	15	10.3	0.5	2.6	1	0	78	28	28.4	1	1	-20	0	-1	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.3	1.7	0	15	11.7	0.5	2.6	1	0	78	28	28.4	-1	1	-16	0	1	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.7	1.8	0	15	11.7	0.5	2.6	1	0	78	28	28.4	1	1	-16	0	-1	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.7	1.9	0	15	11.1	0.4	2.6	1	0	72	28.1	28.4	1	1	-14	0	-1	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.9	2	0	15	11.1	0.4	2.6	1	0	72	28.1	28.4	-1	1	-14	0	1	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
1	0	4.2	0	15	9.9	0.2	3	1	0	81	27.9	28.8	1	1	14	1	-1	0.5	90	300	1	625	23	2	-1	1	1	12	3
1	0.1	4.4	0	15	9.7	0.2	3	1	1	81	27.9	28.8	-1	1	15	1	1	0.5	90	300	2	626	23	2	-1	1	1	1	3
1	0.1	4.5	0	15	9.7	0.1	3	1	-1	78	28.2	28.8	1	1	17	1	-1	0.5	90	300	1	625	23	2	-1	1	1	1	3
1	0.2	4.7	0	15	9.1	0.1	3.3	1	0	78	28.2	28.8	1	1	20	1	-1	0.5	90	300	1	625	23	2	-1	1	1	12	3
1	0.3	4.9	0	15	9.1	0.1	3.3	1	0	78	28.2	28.8	0	1	22	1	0	0.5	90	300	1	625	23	2	-1	1	1	10	3
0	0.9	4.1	0	15	9.3	0.2	3.3	1	0	81	27.9	28.8	0	1	13	1	0	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.9	4.2	0	15	9.3	0.2	3.3	1	0	81	27.9	28.8	0	1	14	1	0	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
0	1	4.3	0	15	9.9	0.2	3	1	0	81	27.9	28.8	0	1	15	1	0	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
0	1	4.4	0	15	9.7	0.1	3	1	0	78	28.2	28.8	0	1	16	1	0	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.8	4.5	0	15	9.7	0.1	3	1	-1	78	28.2	28.8	0	1	18	1	0	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.6	4.8	0	15	9.1	0.1	3.3	1	0	78	28.2	28.8	0	1	21	1	0	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
1	0.2	5.7	0	15	10.7	0.1	3.3	1	0	78	28.2	28.8	0	1	32	1	0	0.5	90	300	1	625	25	2	-1	1	1	10	3
1	0.1	5.8	0	15	10.3	0.1	3	1	0	78	28.2	28.8	0	1	34	1	0	0.5	90	300	1	625	25	2	-1	1	1	10	3
1	0.2	6.1	0	15	9.7	0.1	3	1	0	78	28.2	28.8	0	1	36	1	0	0.5	90	300	2	626	25	2	-1	1	1	3	3
0	0.7	5.8	0	15	10.3	0.1	3	1	0	78	28.2	28.8	0	1	34	1	0	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.9	6	0	15	9.9	0.1	3.3	1	0	78	28.2	28.8	0	1	35	1	0	0.5	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.8	6	0	15	9.9	0.1	3.3	1	0	78	28.2	28.8	0	1	36	1	0	0.5	90	300	-9	-9	-9	2	-1	1	1	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0	0	15	10.3	0.4	2.3	0	0	78	27.9	28.4	-1	1	-36	0	1	0.5	90	300	2	633	10	2	-1	0	0	3	3
1	0.2	0.3	0	15	9.3	0.4	2	0	0	78	27.9	28.4	1	1	-33	0	-1	0.5	90	300	1	632	6	2	-1	0	0	9	3
1	0	0.9	0	15	11.3	0.4	2.3	0	0	78	27.9	28.4	0	1	-26	0	0	0.5	90	300	1	632	6	2	-1	0	0	10	3
0	0.7	0.2	0	15	9.3	0.4	2	0	0	78	27.9	28.4	-1	1	-33	0	1	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.5	0.5	0	15	10.5	0.4	2	0	0	78	27.9	28.4	-1	1	-30	0	1	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.7	0.6	0	15	10.5	0.4	2	0	0	78	27.9	28.4	1	1	-29	0	-1	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.4	0.7	0	15	10.5	0.4	2	0	0	78	27.9	28.4	-1	1	-28	0	1	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.6	0.7	0	15	10.9	0.4	2.3	0	0	78	27.9	28.4	1	1	-27	0	-1	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.9	0.9	0	15	11.3	0.4	2.3	0	0	78	27.9	28.4	-1	1	-26	0	1	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.2	1.2	0	15	11.9	0.5	2.3	1	0	78	28	28.4	1	1	-23	0	-1	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.7	1.3	0	15	10.9	0.5	2.3	1	0	78	28	28.4	-1	1	-22	0	1	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.5	1.4	0	15	11.1	0.5	2.6	1	0	78	28	28.4	1	1	-22	0	-1	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.2	1.6	0	15	10.5	0.5	3	1	0	78	28	28.4	-1	1	-20	0	1	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.2	1.7	0	15	10.5	0.5	3	1	0	78	28	28.4	-1	1	-18	0	1	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.7	1.7	0	15	10.5	0.5	3	1	0	78	28	28.4	1	1	-17	0	-1	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.8	1.9	0	15	11.7	0.5	2.6	1	0	78	28	28.4	1	1	-16	0	-1	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.8	1.9	0	15	11.7	0.5	2.6	1	0	78	28	28.4	-1	1	-15	0	1	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.2	2.1	0	15	11.1	0.4	2.6	1	0	72	28.1	28.4	1	1	-14	0	-1	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
1	**0.1**	**4**	**0**	**15**	**9.7**	**0.2**	**3**	**1**	**0**	**81**	**27.9**	**28.4**	**0**	**1**	**9**	**1**	**0**	**0.5**	**90**	**300**	**1**	**632**	**8**	**2**	**-1**	**0**	**0**	**9**	**3**
1	**0.2**	**4.2**	**0**	**15**	**9.3**	**0.2**	**3.3**	**1**	**0**	**81**	**27.9**	**28.4**	**0**	**1**	**11**	**1**	**0**	**0.5**	**90**	**300**	**2**	**633**	**12**	**2**	**-1**	**0**	**0**	**3**	**3**
1	**0.1**	**4.3**	**0**	**15**	**9.3**	**0.2**	**3.3**	**1**	**-1**	**81**	**27.9**	**28.4**	**1**	**1**	**12**	**1**	**-1**	**0.5**	**90**	**300**	**1**	**632**	**8**	**2**	**-1**	**0**	**0**	**1**	**3**
1	**0.3**	**4.7**	**0**	**15**	**9.7**	**0.1**	**3**	**1**	**0**	**78**	**28.2**	**28.4**	**0**	**1**	**19**	**1**	**0**	**0.5**	**90**	**300**	**1**	**632**	**8**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**0.9**	**3.9**	**0**	**15**	**9.7**	**0.2**	**3**	**1**	**0**	**81**	**27.9**	**28.4**	**0**	**1**	**8**	**1**	**0**	**0.5**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**0.9**	**4**	**0**	**15**	**9.7**	**0.2**	**3**	**1**	**0**	**81**	**27.9**	**28.4**	**0**	**1**	**9**	**1**	**0**	**0.5**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
0	**1**	**4.3**	**0**	**15**	**9.3**	**0.2**	**3.3**	**1**	**0**	**81**	**27.9**	**28.4**	**0**	**1**	**13**	**1**	**0**	**0.5**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**1**	**4.3**	**0**	**15**	**9.3**	**0.2**	**3.3**	**1**	**0**	**81**	**27.9**	**28.4**	**0**	**1**	**13**	**1**	**0**	**0.5**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
0	**0.2**	**4.5**	**0**	**15**	**9.7**	**0.1**	**3**	**1**	**0**	**78**	**28.2**	**28.4**	**1**	**1**	**15**	**1**	**-1**	**0.5**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**0.6**	**4.6**	**0**	**15**	**9.7**	**0.1**	**3**	**1**	**0**	**78**	**28.2**	**28.4**	**0**	**1**	**16**	**1**	**0**	**0.5**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**9**	**3**
1	0.2	5.8	0	15	10.3	0.1	3	1	1	78	28.2	28.4	0	1	32	1	0	0.5	90	300	2	633	12	2	-1	0	0	2.5	3
0	0.1	5.3	0	15	9.1	0.1	3	1	0	78	28.2	28.4	0	1	25	1	0	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.9	5.3	0	15	9.1	0.1	3	1	0	78	28.2	28.4	0	1	26	1	0	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.2	5.4	0	15	9.7	0.1	3	1	0	78	28.2	28.4	0	1	27	1	0	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.7	5.6	0	15	9.9	0.1	3.3	1	0	78	28.2	28.4	0	1	28	1	0	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.1	5.6	0	15	9.7	0.1	3	1	0	78	28.2	28.4	0	1	28	1	0	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.8	5.7	0	15	9.7	0.1	3	1	0	78	28.2	28.4	0	1	31	1	0	0.5	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.8	5.8	0	15	9.7	0.1	3	1	0	78	28.2	28.4	0	1	31	1	0	0.5	90	300	-9	-9	-9	2	-1	0	0	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0.1	0	12	13.8	0.6	3.3	1	1	78	29	28.6	1	1	-45	0	-1	0.2	60	300	1	625	26	3	0	1	1	12	3
1	0.2	0.2	0	12	14.8	0.7	3	1	0	78	29	28.6	1	1	-46	0	0	0.2	60	300	1	625	26	3	0	1	1	10	3
1	0.1	0.2	0	12	14.8	0.7	3	1	0	78	29	28.6	1	1	-46	0	0	0.2	60	300	1	625	26	3	0	1	1	9	3
1	0.2	0.3	0	12	16.3	0.7	3	1	0	78	29	28.6	1	1	-47	0	0	0.2	60	300	1	625	26	3	0	1	1	12	3
1	0.3	0.3	0	12	16.3	0.7	3	1	0	78	29	28.6	-1	1	-47	0	0	0.2	60	300	1	625	26	3	0	1	1	10	3
1	0.3	0.4	0	12	16.3	0.7	3	1	0	78	29	28.6	0	1	-47	0	0	0.2	60	300	1	625	26	3	0	1	1	10	3
1	0.2	0.5	1	12	16.9	0.7	3.3	1	0	78	29	28.6	0	1	-47	0	0	0.2	60	300	3	627	20	3	0	1	1	2	3
1	0.1	0.6	1	12	16.9	0.7	3.6	1	0	78	29	28.6	1	1	-47	0	0	0.2	60	300	2	635	10	3	0	1	1	2	3

1	0.4	0.7	1	12	16.9	0.7	3.6	1	0	78	29	28.6	0	1	-47	0	0	0.2	60	300	3	627	20	3	0	1	1	2	3
1	0.1	0.8	0	12	16.1	0.7	3.6	1	0	78	29	28.6	1	1	-48	0	0	0.2	60	300	2	635	10	3	0	1	1	2	3
1	0.1	0.8	1	12	16.1	0.7	3.6	1	0	78	29	28.6	0	1	-48	0	-1	0.2	60	300	1	625	26	3	0	1	1	11	3
0	0.2	0	0	12	13.8	0.7	3.3	1	0	78	29	28.6	1	1	-45	0	0	0.2	60	300	-9	-9	-9	3	0	1	1	3	3
0	0.5	0.2	0	12	14.8	0.7	3	1	0	78	29	28.6	-1	1	-46	0	0	0.2	60	300	-9	-9	-9	3	0	1	1	3	3
0	0.3	0.3	0	12	14.8	0.7	3	1	0	78	29	28.6	-1	1	-46	0	0	0.2	60	300	-9	-9	-9	3	0	1	1	3	3
0	0.4	0.5	1	12	16.9	0.7	3.3	1	0	78	29	28.6	-1	1	-47	0	0	0.2	60	300	-9	-9	-9	3	0	1	1	3	3
0	0.5	0.7	1	12	16.9	0.7	3.6	1	0	78	29	28.6	1	1	-48	0	0	0.2	60	300	-9	-9	-9	3	0	1	1	9	3
0	0.3	0.4	1	12	16.3	0.7	3	1	0	78	29	28.6	1	1	-46	0	0	0.2	60	300	-9	-9	-9	3	0	1	1	3	3
1	0.1	3.4	0	12	13.6	0.8	3.6	1	0	78	28	29	0	1	-40	0	-1	0.2	70	300	1	625	28	3	0	0	1	10	3
1	0	3.6	0	12	13.6	0.8	3.6	1	0	78	28	29	-1	1	-37	0	0	0.2	70	300	3	628	12	3	0	0	1	3	3
0	0.5	3.1	0	12	13.8	0.8	4.3	1	0	78	28	29	1	1	-41	0	-1	0.2	70	300	-9	-9	-9	3	0	0	1	9	3
0	0.1	3.1	0	12	13.8	0.8	4.3	1	0	78	28	29	-1	1	-41	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0	3.1	0	12	13.8	0.8	4.3	1	0	78	28	29	0	1	-41	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	12	3
0	0.4	3.2	0	12	13.8	0.8	4.3	1	0	78	28	29	-1	1	-40	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	9	3
0	0	3.3	0	12	13.8	0.8	4.3	1	0	78	28	29	1	1	-40	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0.1	3.3	0	12	14	0.8	3.9	1	0	78	28	29	1	1	-40	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0.4	3.4	0	12	14	0.8	3.9	1	0	73	28	29	-1	1	-39	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0.5	3.4	0	12	14	0.8	3.9	1	0	78	28	29	-1	1	-39	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0	3.4	0	12	14	0.8	3.9	1	0	78	28	29	-1	1	-38	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0.5	3.4	0	12	14	0.8	3.9	1	0	78	28	29	-1	1	-38	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	9	3
0	0.3	3.5	0	12	13.6	0.8	3.6	1	0	78	28	29	-1	1	-38	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	9	3
0	0.5	3.5	0	12	13.6	0.8	3.6	1	0	78	28	29	1	1	-38	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0.5	3.7	0	12	13	0.8	3.9	1	0	78	28	29	1	1	-37	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0.4	3.7	0	12	13	0.8	3.9	1	0	78	28	29	1	1	-36	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0.1	3.8	0	12	12.6	0.8	3.9	1	0	78	28	29	-1	1	-35	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
0	0.1	3.9	0	12	12.6	0.8	3.9	1	0		28	29	-1	1	-34	0	0	0.2	70	300	-9	-9	-9	3	0	0	1	3	3
1	0.1	1.1	1	12	15.2	0.6	3.9	1	0	78	29	29	0	1	-48	0	0	0.2	70	300	2	635	10	3	0	2	1	2	3
1	0.1	1.1	1	12	15.2	0.6	3.9	1	-1	78	29	29	0	1	-49	0	0	0.2	70	300	2	635	10	3	0	2	1	1	3
1	0.1	1.2	0	12	15.2	0.6	3.9	1	1	78	29	29	0	1	-49	0	0	0.2	70	300	2	635	10	3	0	2	1	12	3
1	0.1	1.3	0	12	15	0.6	3.9	1	1	78	29	29	0	1	-49	0	0	0.2	70	300	1	625	26	3	0	2	1	12	3
1	0.1	1.3	0	12	15	0.6	3.9	1	-1	78	29	29	0	1	-49	0	0	0.2	70	300	2	635	10	3	0	2	1	0.5	3
1	0	1.4	0	12	15	0.6	3.9	1	-1	78	29	29	0	1	-49	0	0	0.2	70	300	1	625	26	3	0	2	1	1	3
1	0.1	1.8	0	12	13.2	0.6	3.9	1	0	78	29	29	0	1	-48	0	0	0.2	70	300	2	635	10	3	0	2	1	3	3
0	0.5	1.1	1	12	15.2	0.6	3.6	1	0	78	29	29	1	1	-48	0	-1	0.2	70	300	-9	-9	-9	3	0	2	1	9	3
0	0.5	1.1	1	12	15.2	0.6	3.6	1	0	78	29	29	1	1	-48	0	-1	0.2	70	300	-9	-9	-9	3	0	2	1	9	3
0	0.5	1.1	1	12	15.2	0.6	3.9	1	0	78	29	29	1	1	-49	0	-1	0.2	70	300	-9	-9	-9	3	0	2	1	3	3
0	0.4	1.2	1	12	15.2	0.6	3.9	1	0	78	29	29	-1	1	-49	0	1	0.2	70	300	-9	-9	-9	3	0	2	1	9	3
0	0.6	1.2	1	12	15.2	0.6	3.9	1	0	78	29	29	-1	1	-49	0	1	0.2	70	300	-9	-9	-9	3	0	2	1	9	3
0	0.5	1.3	0	12	15	0.6	3.9	1	0	78	29	29	-1	1	-49	0	1	0.2	70	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	1.3	0	12	15	0.6	3.9	1	0	78	29	29	-1	1	-49	0	1	0.2	70	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	1.4	0	12	15	0.6	3.9	1	0	78	29	29	-1	1	-48	0	1	0.2	70	300	-9	-9	-9	3	0	2	1	9	3
0	0.4	1.5	0	12	15	0.6	3.9	1	0	78	29	29	-1	1	-48	0	1	0.2	70	300	-9	-9	-9	3	0	2	1	9	3
0	0.4	1.5	0	12	15	0.6	3.9	1	0	78	29	29	1	1	-48	0	-1	0.2	70	300	-9	-9	-9	3	0	2	1	3	3
0	0.1	1.5	0	12	15	0.6	3.9	1	0	78	29	29	-1	1	-48	0	1	0.2	70	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	1.6	0	12	14	0.6	3.9	1	0	78	29	29	1	1	-48	0	0	0.2	70	300	-9	-9	-9	3	0	2	1	3	3
0	0.4	1.7	0	12	14	0.6	3.9	1	0	78	29	29	1	1	-48	0	0	0.2	70	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	1.8	0	12	14	0.6	3.9	1	0	78	29	29	-1	1	-48	0	0	0.2	70	300	-9	-9	-9	3	0	2	1	9	3
0	0.2	1.8	0	12	13.2	0.6	3.9	1	0	78	29	29	-1	1	-47	0	0	0.2	70	300	-9	-9	-9	3	0	2	1	3	3
1	0.1	4	0	10	13.2	0.1	3.9	1	1	78	28	29	0	1	-33	0	0	0.2	60	300	2	635	12	3	0	2	1	12	3
1	0.1	4.1	0	10	12.8	0.1	3.9	1	0	78	28	29	0	1	-32	0	-1	0.2	60	300	1	625	28	3	0	2	1	12	3
1	0.1	4.2	0	10	12.8	0.1	3.9	1	0	78	28	29	1	1	-32	0	0	0.2	60	300	3	628	12	3	0	2	1	9	3

1	0.4	4.2	0	10	12.8	0.1	3.9	1	-1	78	28	29	0	1	-32	0	0	0.2	60	300	2	635	12	3	0	2	1	2	3
1	0.4	4.2	0	10	12.8	0.1	3.9	1	0	78	28	29	-1	1	-32	0	0	0.2	60	300	2	635	12	3	0	2	1	3	3
1	0.1	4.2	0	10	12.8	0.1	3.9	1	0	78	28	29	1	1	-32	0	0	0.2	60	300	1	625	28	3	0	2	1	3	3
1	0.3	4.3	0	10	15	0.1	3.9	1	0	78	28	29	0	1	-31	0	1	0.2	60	300	1	625	28	3	0	2	1	10	3
1	0.3	4.3	0	10	15	0.1	3.9	1	1	78	28	29	0	1	-31	0	0	0.2	60	300	2	635	12	3	0	2	1	1	3
1	0.3	4.3	0	10	15	0.1	3.9	1	0	78	28	29	0	1	-30	0	1	0.2	60	300	1	625	28	3	0	2	1	11	3
1	0.1	4.6	0	10	15	0.1	3.9	1	1	78	28	29	0	1	-28	0	1	0.2	60	300	1	625	28	3	0	2	1	1	3
0	0.2	4	0	10	13.2	0.1	3.9	1	0	78	28	29	1	1	-33	0	0	0.2	60	300	-9	-9	-9	3	0	2	1	3	3
0	0.6	4.4	0	10	13.6	0.1	3.9	1	0	78	28	29	1	1	-29	0	0	0.2	60	300	-9	-9	-9	3	0	2	1	9	3
0	0.3	4.4	0	10	13.6	0.1	3.9	1	0	78	28	29	-1	1	-29	0	0	0.2	60	300	-9	-9	-9	3	0	2	1	3	3
0	0.3	4.5	0	10	15	0.1	3.9	1	0	78	28	29	-1	1	-29	0	0	0.2	60	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	4.6	0	10	14.4	0.1	3.9	1	0	78	28	29	-1	1	-28	0	0	0.2	60	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	4.7	0	10	14.4	0.1	3.9	1	0	78	28	29	1	1	-28	0	0	0.2	60	300	-9	-9	-9	3	0	2	1	9	3
0	0.6	4.7	0	10	14.4	0.1	3.9	1	0	78	28	29	1	1	-28	0	0	0.2	60	300	-9	-9	-9	3	0	2	1	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0	0.3	0	14	9.9	0.2	1.3	0	0	80	28.1	28	0	1	-36	0	0	0	60	300	1	637	300	3	0	0	0	12	3
1	0	0.9	0	14	8.9	0.2	1.6	0	1	82	27.7	28	0	1	-42	0	0	0	60	300	2	636	6	3	0	0	0	12	3
0	0.2	0	0	14	9.1	0.2	1.3	0	0	80	28.1	28	1	1	-34	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.1	0.1	0	14	9.1	0.2	1.3	0	0	80	28.1	28	1	1	-34	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	0.2	0	14	9.1	0.2	1.3	0	0	80	28.1	28	1	1	-35	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	0.2	0	14	9.9	0.2	1.3	0	0	80	28.1	28	1	1	-35	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.4	0.2	0	14	9.9	0.2	1.3	0	0	80	28.1	28	-1	1	-36	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	0.3	0	14	9.9	0.2	1.3	0	0	80	28.1	28	-1	1	-36	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	0.4	0	14	9.9	0.2	1.3	0	0	80	28.1	28	-1	1	-37	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	0.4	0	14	9.9	0.2	1.3	0	0	80	28.1	28	1	1	-37	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	0.4	0	14	9.9	0.2	1.3	0	0	80	28.1	28	-1	1	-38	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	0.5	0	14	9.9	0.2	1.3	0	0	80	28.1	28	-1	1	-38	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	0.6	0	14	9.7	0.2	1.3	0	0	80	28.1	28	-1	1	-39	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.1	0.7	0	14	9.7	0.2	1.3	0	0	80	28.1	28	1	1	-40	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	0.8	0	14	9.7	0.2	1.6	0	0	82	27.7	28	-1	1	-41	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
1	0.1	1.3	0	14	9.5	0.2	1.6	0	0	82	27.7	27.9	0	1	-47	0	0	0	60	300	2	636	6	3	0	0	0	1	3
0	0.1	1.1	0	14	8.9	0.2	1.3	0	0	82	27.7	27.9	-1	1	-46	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0	1.2	0	14	8.9	0.2	1.3	0	0	82	27.7	27.9	0	1	-46	0	1	0	60	300	-9	-9	-9	3	0	0	0	12	3
0	0.4	1.2	0	14	9.5	0.2	1.6	0	0	82	27.7	27.9	1	1	-46	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.1	1.3	0	14	9.5	0.2	1.6	0	0	82	27.7	27.9	1	1	-46	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	1.4	0	14	9.5	0.2	1.6	0	0	82	27.7	27.9	-1	1	-47	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	1.4	0	14	8.9	0.2	1.6	0	0	82	27.7	27.9	1	1	-48	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.5	1.4	0	14	8.9	0.2	1.6	0	0	82	27.7	27.9	-1	1	-48	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0	1.5	0	14	9.3	0.2	1.6	0	0	82	27.7	27.9	0	1	-48	0	1	0	60	300	-9	-9	-9	3	0	0	0	12	3
0	0.4	1.6	0	14	9.3	0.2	1.6	0	0	82	27.6	27.9	-1	1	-49	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.5	1.6	0	14	9.3	0.2	1.6	0	0	82	27.6	27.9	1	1	-50	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.1	1.7	0	14	9.3	0.2	1.6	0	0	82	27.6	27.9	1	1	-50	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	1.9	0	14	9.7	0.2	1.6	0	0	82	27.6	27.9	1	1	-52	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	2	0	14	9.5	0.2	1.6	0	0	82	27.6	27.9	-1	1	-53	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0	2	0	14	9.5	0.2	1.6	0	0	82	27.7	27.9	-1	1	-53	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
1	0	3.1	0	14	10.9	0.3	1.6	0	1	84	27.2	27.3	0	1	-58	0	0	0	60	300	1	637	302	3	0	0	0	11	3
0	0.1	3.1	0	14	10.9	0.3	1.6	0	0	84	27.2	27.3	1	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	3.2	0	14	10.7	0.3	1.6	0	0	84	27.2	27.3	-1	1	-59	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3

0	0.2	3.4	0	14	11.5	0.3	1.6	0	0	84	27.2	27.3	1	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.5	3.5	0	14	11.5	0.3	1.6	0	0	84	27.2	27.3	-1	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.1	3.5	0	14	12.1	0.3	1.6	0	0	84	27.2	27.3	-1	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	3.6	0	14	12.1	0.3	1.6	0	0	84	27.2	27.3	-1	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	3.6	0	14	12.1	0.3	1.6	0	-1	84	27.2	27.3	0	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	3.7	0	14	12.1	0.3	1.6	0	0	84	27.2	27.3	-1	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	3.7	0	14	11.5	0.3	1.6	0	0	88	26.8	27.3	-1	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.5	3.8	0	14	11.5	0.3	1.6	0	0	88	26.8	27.3	1	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	3.8	0	14	11.5	0.3	1.6	0	0	88	26.8	27.3	1	1	-57	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.4	3.8	0	14	11.5	0.3	1.6	0	0	88	26.8	27.3	-1	1	-57	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	3.9	0	14	11.5	0.3	1.6	0	0	88	26.8	27.3	-1	1	-57	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	3.9	0	14	11.1	0.3	1.6	0	0	88	26.8	27.3	1	1	-57	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.1	3.9	0	14	11.1	0.3	1.6	0	0	88	26.8	27.3	1	1	-57	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	3.7	0	14	12.1	0.3	1.6	0	0	88	27.2	27.3	1	1	-58	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
1	0.1	4.7	0	14	12.1	0.3	2	0	-1	88	26.8	27.4	0	1	-53	0	0	0	60	300	2	636	8	3	0	0	0	12	3
1	0.1	5	0	14	12.1	0.3	2	0	-1	88	26.8	27.4	0	1	-52	0	0	0	60	300	1	637	302	3	0	0	0	11	3
0	0.1	4.1	0	14	12.2	0.3	2	0	0	88	26.8	27.4	-1	1	-57	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.4	4.3	0	14	11.7	0.3	2	0	0	88	26.8	27.4	1	1	-56	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.5	4.3	0	14	11.7	0.3	2	0	0	88	26.8	27.4	-1	1	-56	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	4.4	0	14	11.7	0.3	2	0	0	88	26.8	27.4	1	1	-55	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.4	4.5	0	14	12.2	0.3	2	0	0	88	26.8	27.4	-1	1	-55	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.3	4.6	0	14	11.5	0.3	2	0	0	88	26.8	27.4	-1	1	-54	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.2	4.6	0	14	11.5	0.3	2	0	0	88	26.8	27.4	-1	1	-54	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.3	4.7	0	14	11.5	0.3	2	0	0	88	26.8	27.4	1	1	-54	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.4	4.7	0	14	11.5	0.3	2	0	0	88	26.8	27.4	-1	1	-54	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.5	4.8	0	14	12.1	0.3	2	0	0	88	26.8	27.4	-1	1	-53	0	0	0	60	300	-9	-9	-9	3	0	0	0	9	3
0	0.1	4.8	0	14	12.1	0.3	2	0	0	88	26.8	27.4	1	1	-52	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0.2	4.9	0	14	12.1	0.3	2	0	0	88	26.8	27.4	1	1	-52	0	0	0	60	300	-9	-9	-9	3	0	0	0	3	3
0	0	5	0	14	12.4	0.3	2	0	0	88	26.8	27.4	0	1	-51	0	0	0	60	300	-9	-9	-9	3	0	0	0	12	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.3	0.3	0	14	6.8	0.2	1.3	0	0	75	26.8	27.6	0	1	-21	0	0	0	90	300	2	635	22	2	-1	1	1	1	3
1	0.5	0.4	0	14	6.8	0.2	1.3	0	0	75	26.8	27.6	-1	1	-22	0	-1	0	90	300	1	625	32	2	-1	1	1	9	3
1	0.2	0.6	0	14	6	0.2	1.3	0	0	75	26.8	27.6	1	1	-24	0	-1	0	90	300	3	628	20	2	-1	1	1	2	3
1	0.4	0.8	0	14	6	0.2	1.3	0	1	75	26.8	27.6	-1	1	-26	0	-1	0	90	300	1	625	32	2	-1	1	1	10	3
0	0.8	0.3	0	14	6.6	0.2	1.3	0	0	74	27	27.6	1	1	-22	0	0	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.8	0.5	0	14	6.6	0.2	1.3	0	0	75	26.8	27.6	-1	1	-22	0	0	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.4	0.5	0	14	6.6	0.2	1.3	0	0	75	26.8	27.6	1	1	-23	0	0	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.7	0.6	0	14	6.6	0.2	1.3	0	0	75	26.8	27.6	-1	1	-24	0	0	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.2	0.7	0	14	6	0.2	1.3	0	0	75	26.8	27.6	1	1	-25	0	0	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.4	0.9	0	14	6.2	0.2	1.3	0	0	74	27	27.6	1	1	-28	0	0	0	90	300	-9	-9	-9	2	-1	1	1	9	3
1	0	1.3	0	14	6.4	0.2	1.3	0	0	74	27	28	0	1	-33	0	0	0	90	300	3	627	20	2	-1	1	1	12	3
1	0.6	1.6	0	14	6.2	0.2	1.3	0	1	74	27	28	-1	1	-36	0	-1	0	90	300	1	635	20	2	-1	1	1	10	3
1	0.4	1.6	0	14	6.2	0.2	1.3	0	-1	74	27	28	1	1	-37	0	1	0	90	300	1	635	20	2	-1	1	1	10	3
0	0.5	1.5	0	14	6	0.2	1.3	0	0	74	27	28	-1	1	-35	0	0	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.6	1.5	0	14	6	0.2	1.3	0	0	74	27	28	1	1	-36	0	0	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.6	1.7	0	14	6.2	0.2	1.3	0	0	74	27	28	-1	1	-37	0	0	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.5	1.7	0	14	6.2	0.2	1.3	0	0	74	27	28	1	1	-39	0	0	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.3	1.9	0	14	5.2	0.2	1.3	0	0	74	27	28	-1	1	-41	0	0	0	90	300	-9	-9	-9	2	-1	1	1	3	3

0	0.7	1.9	0	14	5.2	0.2	1.3	0	0	74	27	28	1	1	-41	0	0	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.9	1.4	0	14	6	0.2	1.3	0	0	74	27	28	1	1	-35	0	0	0	90	300	-9	-9	-9	2	-1	1	1	9	3
1	0.2	3.3	0	14	7.6	0.1	1.6	0	0	76	26.9	27.4	0	1	-57	0	1	0	90	300	3	628	20	2	-1	1	1	9	3
1	0.2	3.5	0	14	7	0.1	1.6	0	0	76	26.9	27.4	0	1	-58	0	-1	0	90	300	3	628	20	2	-1	1	1	9	3
0	0.7	3.2	0	14	7.6	0.1	1.3	0	0	76	26.9	27.4	0	1	-55	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.4	3.2	0	14	7.6	0.1	1.3	0	0	76	26.9	27.4	0	1	-56	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.6	3.3	0	14	7.6	0.1	1.6	0	0	76	26.9	27.4	0	1	-56	0	1	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.7	3.4	0	14	7.6	0.1	1.6	0	0	76	26.9	27.4	0	1	-57	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.6	3.5	0	14	7	0.1	1.6	0	0	76	26.9	27.4	0	1	-58	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.4	3.6	0	14	5.8	0.1	1.6	0	0	76	26.9	27.4	0	1	-59	0	1	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.6	3.7	0	14	5.8	0.1	1.6	0	0	76	26.9	27.4	0	1	-59	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.4	3.7	0	14	5.8	0.1	1.6	0	0	76	26.9	27.4	0	1	-60	0	1	0	90	300	-9	-9	-9	2	-1	1	1	3	3
1	0.1	4.3	0	14	6	0	1.6	0	-1	78	26.5	27.4	0	1	-64	0	0	0	90	300	2	625	32	2	-1	1	1	2	3
1	0.1	4.5	0	14	6.4	0	1.3	0	-1	78	26.5	27.4	0	1	-65	0	0	0	90	300	2	625	32	2	-1	1	1	1	3
1	0.1	4.6	0	14	7.8	0	1.3	0	0	78	26.5	27.4	-1	1	-65	0	0	0	90	300	1	635	22	2	-1	1	1	11	3
1	0.2	4.8	0	14	9.3	0	1.3	0	0	78	26.5	27.4	0	1	-65	0	0	0	90	300	1	635	22	2	-1	1	1	11	3
0	0.6	4.2	0	14	6.4	0	1.6	0	0	78	26.5	27.4	0	1	-64	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	1	4.3	0	14	6	0	1.6	0	-1	78	26.5	27.4	0	1	-64	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.4	4.3	0	14	6	0	1.6	0	0	73	26.5	27.4	0	1	-65	0	1	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	1	4.4	0	14	6.4	0	1.3	0	0	78	26.5	27.4	0	1	-65	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	1	4.5	0	14	6.4	0	1.3	0	0	78	26.5	27.4	0	1	-65	0	1	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.8	4.5	0	14	6.4	0	1.3	0	0	78	26.5	27.4	0	1	-65	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	1	4.6	0	14	7.8	0	1.3	0	0	78	26.5	27.4	0	1	-65	0	1	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.8	4.7	0	14	7.8	0	1.3	0	0	78	26.5	27.4	0	1	-65	0	-1	0	90	300	-9	-9	-9	2	-1	1	1	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.5	0.3	0	14	5.6	0.2	1.3	0	0	75	26.8	27.6	1	1	-13	0	1	0	90	300	3	638	7	2	-1	0	0	2	3
1	0.2	0.6	0	14	6.2	0.2	1.3	0	0	74	27	27.6	-1	1	-16	0	1	0	90	300	1	636	10	2	-1	0	0	3	3
1	0.3	0.7	0	14	6.2	0.2	1.3	0	0	74	27	27.6	1	1	-20	0	1	0	90	300	3	638	7	2	-1	0	0	9	3
0	0.4	0.2	0	14	5.6	0.2	1.3	0	0	74	27	27.6	-1	1	-12	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.7	0.3	0	14	5.6	0.2	1.3	0	0	74	27	27.6	-1	1	-13	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.5	0.4	0	14	5.8	0.2	1.3	0	0	74	27	27.6	-1	1	-16	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.5	0.4	0	14	5.8	0.2	1.3	0	0	74	27	27.6	1	1	-16	0	1	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.8	0.5	0	14	5.8	0.2	1.3	0	0	74	27	27.6	-1	1	-18	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.7	0.7	0	14	6.8	0.2	1.3	0	0	74	27	27.6	-1	1	-22	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.5	1	0	14	6.6	0.2	1.3	0	0	74	27	27.6	1	1	-22	0	1	0	90	300	-9	-9	-9	2	-1	0	0	9	3
1	0.1	1.5	0	14	6.2	0.2	1.3	0	0	74	27	27.6	1	1	-28	0	0	0	90	300	1	636	10	2	-1	0	0	11	3
1	0.4	1.6	0	14	6.2	0.2	1.3	0	0	74	27	27.6	1	1	-29	0	0	0	90	300	2	637	300	2	-1	0	0	2	3
1	0.5	1.7	0	14	6.2	0.2	1.3	0	0	74	27	27.6	1	1	-32	0	0	0	90	300	3	638	7	2	-1	0	0	9	3
1	0.4	1.8	0	14	6.4	0.2	1.3	0	0	74	27	27.6	1	1	-34	0	0	0	90	300	3	638	7	2	-1	0	0	3	3
0	0.3	1.3	0	14	6	0.2	1.3	0	0	74	27	27.6	-1	1	-37	0	0	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.6	1.6	0	14	6.2	0.2	1.3	0	0	74	27	27.6	-1	1	-30	0	0	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.5	1.7	0	14	6.4	0.2	1.3	0	0	74	27	27.6	-1	1	-32	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.3	2	0	14	6	0.2	1.3	0	0	74	27	27.6	-1	1	-35	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.6	2	0	14	6	0.2	1.3	0	0	74	27	27.6	1	1	-35	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.9	0	0	14	5.8	0.2	1.3	0	0	74	27	27.5	0	1	-47	0	0	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.5	3	0	14	5.8	0.2	1.3	0	0	74	27	27.5	0	1	-47	0	0	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.8	3.1	0	14	6.6	0.2	1.3	0	0	74	27	27.5	0	1	-47	0	0	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.5	3.2	0	14	6.6	0.2	1.3	0	0	74	27	27.5	0	1	-47	0	0	0	90	300	-9	-9	-9	2	-1	0	0	9	3

0	0.8	3.2	0	14	6.6	0.2	1.3	0	0	74	27	27.5	0	1	-50	0	0	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.5	3.3	0	14	7.4	0.2	1.3	0	0	74	27	27.5	0	1	-51	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.5	3.4	0	14	7.4	0.2	1.3	0	0	74	27	27.5	0	1	-51	0	0	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.3	3.4	0	14	7.4	0.2	1.3	0	0	74	27	27.5	0	1	-51	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.5	3.5	0	14	7.4	0.1	1.3	0	0	76	26.9	27.5	0	1	-52	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.4	3.6	0	14	7.6	0.1	1.3	0	0	76	26.9	27.5	0	1	-52	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
1	0	4.1	0	14	7	0.1	1.6	0	0	76	26.9	27.4	1	1	-58	0	0	0	90	300	1	636	10	2	-1	0	0	12	3
1	0	4.3	0	14	5.4	0.1	1.6	0	0	76	26.9	27.4	1	1	-60	0	0	0	90	300	2	637	300	2	-1	0	0	12	3
0	0.5	4	0	14	7	0.1	1.6	0	0	76	26.9	27.4	0	1	-58	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	1	4.1	0	14	7	0.1	1.6	0	0	76	26.9	27.4	0	1	-58	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.4	4.2	0	14	5.8	0.1	1.6	0	0	76	26.9	27.4	0	1	-59	0	1	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.9	4.3	0	14	5.8	0.1	1.6	0	0	76	26.9	27.4	0	1	-59	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.8	4.4	0	14	5.4	0.1	1.6	0	0	76	26.9	27.4	0	1	-60	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.3	4.5	0	14	6.4	0.1	1.6	0	0	76	26.9	27.4	0	1	-61	0	1	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.9	4.5	0	14	6.4	0.1	1.6	0	0	76	26.9	27.4	0	1	-61	0	-1	0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.3	4.7	0	14	6.4	0	1.6	0	0	78	26.5	27.4	0	1	-62	0	1	0	90	300	-9	-9	-9	2	-1	0	0	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.2	0	0	12	8.7	0.3	2.6	1	0	76	27.2	27.7	-1	1	-6	0	0	0.1	90	300	2	625	40	2	-1	1	1	2	3
1	0	0.7	0	12	7.4	0.3	2.6	1	0	76	27.2	27.6	0	1	-16	0	0	0.1	90	300	2	625	40	2	-1	1	1	1	3
1	0	0.8	0	12	7.4	0.3	2.6	1	0	76	27.2	27.6	0	1	-16	0	0	0.1	90	300	1	635	20	2	-1	1	1	11	3
0	0.6	0.1	0	12	7.8	0.3	2.6	1	1	76	27.2	27.7	-1	1	-7	0	-1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.6	0.2	0	12	7.8	0.3	2.6	1	1	76	27.2	27.7	-1	1	-8	0	-1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.9	0.2	0	12	8.4	0.3	3	1	-1	76	27.2	27.7	1	1	-8	0	1	0.1	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.4	0.2	0	12	8.4	0.3	3	1	-1	76	27.2	27.7	1	1	-8	0	1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.3	0.3	0	12	8.4	0.3	3	1	-1	76	27.2	27.7	1	1	-9	0	1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.6	0.5	0	12	7.8	0.3	2.3	1	1	76	27.2	27.7	-1	1	-12	0	-1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	1	0.6	0	12	7.6	0.3	2.6	1	1	76	27.2	27.7	-1	1	-14	0	-1	0.1	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.5	0.7	0	12	7.4	0.3	2.6	1	-1	76	27.2	27.6	1	1	-15	0	1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.9	0.8	0	12	7.4	0.3	2.6	1	1	76	27.2	27.6	-1	1	-16	0	-1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	1	0.8	0	12	7.4	0.3	2.6	1	-1	76	27.2	27.6	1	1	-17	0	1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
1	0.1	1.1	0	12	6.4	0.3	3	1	0	76	27.3	27.6	0	1	-20	0	0	0.1	90	300	2	625	40	2	-1	1	1	3	3
1	0.4	1.1	0	12	6.4	0.3	3	1	0	76	27.3	27.6	-1	1	-20	0	0	0.1	90	300	3	627	20	2	-1	1	1	2	3
1	0.5	1.2	0	12	6.4	0.3	3	1	1	76	27.3	27.6	-1	1	-21	0	-1	0.1	90	300	3	627	20	2	-1	1	1	3	3
1	0.5	1.6	0	12	6.6	0.3	2.6	1	0	76	27.2	27.6	-1	1	-26	0	0	0.1	90	300	3	627	20	2	-1	1	1	2	3
1	0.2	1.9	0	12	6.4	0.3	3	1	0	76	27.2	27.6	0	1	-30	0	0	0.1	90	300	3	627	20	2	-1	1	1	2	3
0	0.5	1.2	0	12	6.8	0.3	2.6	1	-1	76	27.3	27.6	1	1	-22	0	1	0.1	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.6	1.2	0	12	6.8	0.3	2.6	1	-1	76	27.3	27.6	1	1	-22	0	1	0.1	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.6	1.6	0	12	6.6	0.3	2.6	1	-1	76	27.2	27.6	1	1	-26	0	1	0.1	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.8	1.6	0	12	6.6	0.3	2.6	1	1	76	27.2	27.6	-1	1	-27	0	-1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.8	1.7	0	12	6.4	0.3	2.6	1	1	76	27.2	27.6	-1	1	-28	0	-1	0.1	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.2	1.7	0	12	6.4	0.3	2.6	1	-1	76	27.2	27.6	1	1	-28	0	1	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.3	0.3	0	12	7.4	0.3	2.6	1	-1	76	27.1	27.6	1	1	4	1	1	0.1	90	300	3	638	12	2	-1	0	0	9	3
1	0.1	0.8	0	12	8.7	0.3	2.6	1	1	76	27.2	27.7	1	1	-6	0	1	0.1	90	300	3	638	12	2	-1	0	0	0	3
1	0.1	0.8	0	12	7.8	0.3	2.6	1	0	76	27.2	27.7	0	1	-6	0	1	0.1	90	300	3	638	12	2	-1	0	0	10	3

0	0.8	0.1	0	12	7.6	0.3	2.3	1	1	76	27.1	27.6	-1	1	2	1	-1	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.6	0.2	0	12	7.4	0.3	2.6	1	1	76	27.1	27.6	-1	1	2	1	-1	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.5	0.3	0	12	7.4	0.3	2.6	1	-1	76	27.1	27.6	1	1	1	1	1	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.7	0.3	0	12	8.2	0.3	2.3	1	-1	76	27.2	27.6	1	1	0	0	1	0.1	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.8	0.5	0	12	9.1	0.3	2.6	1	1	76	27.2	27.7	-1	1	-2	0	-1	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.4	0.6	0	12	8.7	0.3	2.6	1	1	76	27.2	27.7	-1	1	-4	0	-1	0.1	90	300	-9	-9	-9	2	-1	0	0	3	3
0	1	0.8	0	12	7.8	0.3	2.6	1	-1	76	27.2	27.7	1	1	-7	0	1	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.8	0.2	0	12	7.4	0.3	2.6	1	-1	76	27.1	27.6	1	1	2	1	1	0.1	90	300	-9	-9	-9	2	-1	0	0	3	3
1	**0.1**	**1.1**	**0**	**12**	**8.4**	**0.3**	**3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-9**	**0**	**0**	**0.1**	**90**	**300**	**2**	**636**	**16**	**2**	**-1**	**0**	**0**	**3**	**3**
1	**0.1**	**1.1**	**0**	**12**	**7.8**	**0.3**	**2.3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-11**	**0**	**0**	**0.1**	**90**	**300**	**3**	**638**	**12**	**2**	**-1**	**0**	**0**	**0.5**	**3**
1	**0.3**	**1.2**	**0**	**12**	**7.8**	**0.3**	**2.3**	**1**	**-1**	**76**	**27.2**	**27.7**	**1**	**1**	**-11**	**0**	**1**	**0.1**	**90**	**300**	**3**	**638**	**12**	**2**	**-1**	**0**	**0**	**3**	**3**
1	**0.1**	**2**	**0**	**12**	**6.8**	**0.3**	**2.6**	**1**	**0**	**76**	**27.3**	**27.6**	**0**	**1**	**-21**	**0**	**0**	**0.1**	**90**	**300**	**2**	**636**	**16**	**2**	**-1**	**0**	**0**	**2**	**3**
0	**0.3**	**1.2**	**0**	**12**	**7.8**	**0.3**	**2.3**	**1**	**1**	**76**	**27.2**	**27.7**	**-1**	**1**	**-11**	**0**	**-1**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
0	**0.4**	**1.2**	**0**	**12**	**7.8**	**0.3**	**2.3**	**1**	**-1**	**76**	**27.2**	**27.7**	**1**	**1**	**-12**	**0**	**1**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
0	**0.3**	**1.6**	**0**	**12**	**7.2**	**0.3**	**2.6**	**1**	**1**	**76**	**27.2**	**27.6**	**-1**	**1**	**-17**	**0**	**-1**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
0	**0.4**	**1.6**	**0**	**12**	**7.2**	**0.3**	**2.6**	**1**	**-1**	**76**	**27.2**	**27.6**	**1**	**1**	**-18**	**0**	**1**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
0	**0.7**	**1.8**	**0**	**12**	**7.2**	**0.3**	**2.6**	**1**	**1**	**76**	**27.2**	**27.6**	**-1**	**1**	**-18**	**0**	**-1**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
0	**0.3**	**1.8**	**0**	**12**	**6.4**	**0.3**	**3**	**1**	**-1**	**76**	**27.3**	**27.6**	**1**	**1**	**-20**	**0**	**1**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**1**	**1.9**	**0**	**12**	**6.4**	**0.3**	**3**	**1**	**-1**	**76**	**27.3**	**27.6**	**1**	**1**	**-21**	**0**	**1**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
1	0.2	3.1	0	12	7	0.3	2.6	1	0	76	27.3	27.6	0	1	-35	0	0	0.1	90	300	1	637	300	2	-1	0	0	10	3
1	0.1	3.5	0	12	7	0.3	2.6	1	0	76	27.2	27.6	0	1	-42	0	0	0.1	90	300	2	636	16	2	-1	0	0	2	3
1	0	3.8	0	12	6.8	0.3	3	1	0	76	27.2	27.7	0	1	-45	0	0	0.1	90	300	1	637	300	2	-1	0	0	12	3
0	0.6	3	0	12	7	0.3	2.6	1	0	76	27.3	27.6	0	1	-34	0	0	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.7	3.1	0	12	7	0.3	2.6	1	0	76	27.3	27.6	0	1	-37	0	0	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
0	1	3.2	0	12	6.2	0.3	3	1	0	76	27.3	27.6	0	1	-37	0	0	0.1	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.9	3.4	0	12	6.8	0.3	2.6	1	0	76	27.2	27.6	0	1	-40	0	0	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.5	3.5	0	12	6.8	0.3	2.6	1	0	76	27.2	27.6	0	1	-41	0	0	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.8	3.5	0	12	7	0.3	2.6	1	0	76	27.2	27.6	0	1	-42	0	0	0.1	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.5	3.7	0	12	6.8	0.3	3	1	0	76	27.2	27.6	0	1	-44	0	0	0.1	90	300	-9	-9	-9	2	-1	0	0	9	3
1	**0.1**	**4.1**	**0**	**12**	**7.2**	**0.3**	**3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-49**	**0**	**0**	**0.1**	**90**	**300**	**3**	**638**	**12**	**2**	**-1**	**0**	**0**	**2**	**3**
1	**0.2**	**4.5**	**0**	**12**	**7.2**	**0.3**	**3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-54**	**0**	**0**	**0.1**	**90**	**300**	**1**	**637**	**300**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**0.6**	**4**	**0**	**12**	**7.2**	**0.3**	**3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-48**	**0**	**0**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
0	**0.4**	**4.1**	**0**	**12**	**7.2**	**0.3**	**3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-49**	**0**	**0**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**0.9**	**4.2**	**0**	**12**	**7.2**	**0.3**	**3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-50**	**0**	**0**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**0.8**	**4.4**	**0**	**12**	**7.2**	**0.3**	**3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-52**	**0**	**0**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**
0	**0.4**	**4.5**	**0**	**12**	**7.2**	**0.3**	**3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-53**	**0**	**0**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**0.8**	**4.6**	**0**	**12**	**6.4**	**0.3**	**3**	**1**	**0**	**76**	**27.2**	**27.7**	**0**	**1**	**-56**	**0**	**0**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**9**	**3**
0	**0.2**	**4.8**	**0**	**12**	**6.4**	**0.3**	**2.6**	**1**	**-1**	**76**	**27.2**	**27.7**	**0**	**1**	**-58**	**0**	**0**	**0.1**	**90**	**300**	**-9**	**-9**	**-9**	**2**	**-1**	**0**	**0**	**3**	**3**

CG-6506 **26 APR 98 SEARCHES 1-4**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0.2	0	15	16.9	0	3.3	2	0	70	4.5	4.5	1	0	-20	0	1	0	90	300	3	639	15	2	-1	0	0	4	3
0	0.4	0.4	0	15	16.9	0	3.3	2	0	70	4.5	4.5	-1	0	-22	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.4	0.4	0	15	16.9	0	3.3	2	0	70	4.5	4.5	1	0	-22	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.4	0.5	0	15	16.9	0	3.3	2	0	70	4.5	4.5	1	0	-23	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.4	0.7	0	15	16.9	0	3.3	2	0	70	4.5	4.5	1	0	-24	0	0	0	90	300	-9	-9	-9	2	-1	0	0	3	3
1	**0.3**	**1.3**	**0**	**15**	**17.1**	**0**	**3.3**	**2**	**0**	**70**	**4.5**	**4.5**	**0**	**0**	**-28**	**0**	**0**	**0.0**	**90**	**300**	**1**	**640**	**240**	**2**	**-1**	**0**	**0**	**10**	**3**
1	0.1	4.2	0	15	13.8	0	3.3	2	0	70	4	4.6	1	0	-35	0	0	0.02	90	300	1	641	24	2	-1	0	0	10	3
0	0.3	3.2	0	15	13.8	0	3.3	2	-1	70	4	4.6	1	2	-35	0	-1	0.02	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.4	3.5	0	15	14.4	0	3.6	2	1	70	4	4.6	0	0	-35	0	1	0.02	90	300	-9	-9	-9	2	-1	0	0	3	3

0	0.1	3.6	0	15	14.4	0	3.6	2	-1	70	4	4.6	1	0	-35	0	-1	0.02	90	300	-9	-9	-9	2	-1	0	0	3	3
1	0	3.9	0	15	14.4	0	3.6	2	0	70	3.5	4.6	0	0	-35	0	0	0.0	90	300	1	640	240	2	-1	0	0	11	3
1	0.1	4.3	0	15	15.2	0	3.9	2	0	70	3.2	4.6	1	0	-34	0	0	0.0	90	300	1	640	240	2	-1	0	0	11	3
0	0.4	3.9	0	15	14.4	0	3.6	2	-1	70	3.5	4.6	1	0	-35	0	-1	0.0	90	300	-9	-9	-9	2	-1	0	0	3	3
0	0.4	4	0	15	15.2	0	3.6	2	-1	70	3.5	4.6	1	0	-34	0	-1	0.0	90	300	-9	-9	-9	2	-1	0	0	9	3
0	0.3	4.4	0	15	15.2	0	3.9	2	-1	70	3.2	4.6	1	0	-34	0	-1	0.0	90	300	-9	-9	-9	2	-1	0	0	3	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.5	0.2	0	15	15	0	3.6	2	0	70	3.5	4.6	1	0	-17	0	0	0	90	300	2	642	21	2	-1	1	1	3	3
1	0.3	0.4	0	15	16.9	0	3.9	2	0	70	3.2	4.6	-1	0	-19	0	0	0	90	300	2	642	21	2	-1	1	1	2	3
1	0.4	0.5	0	15	16.9	0	3.9	2	0	70	3.2	4.6	1	0	-20	0	0	0	90	300	2	642	21	2	-1	1	1	2	3
1	0.4	0.5	0	15	16.9	0	3.9	2	0	70	3.2	4.6	1	0	-20	0	0	0	90	300	3	644	0	2	-1	1	1	3	3
1	0.5	0.6	0	15	16.9	0	3.6	2	0	70	3.2	4.6	-1	0	-21	0	0	0	90	300	3	644	0	2	-1	1	1	2	3
1	0.5	0.6	0	15	16.9	0	3.6	2	0	70	3.2	4.6	-1	0	-21	0	0	0	90	300	3	644	0	2	-1	1	1	2	3
1	0.5	0.7	0	15	16.9	0	3.6	2	0	70	3.2	4.6	1	0	-22	0	0	0	90	300	3	644	0	2	-1	1	1	2	3
1	0.4	0.9	0	15	17.1	0	3.6	2	0	70	3.2	4.6	-1	0	-23	0	0	0	90	300	2	642	21	2	-1	1	1	1	3
0	0	0.2	0	15	13	0	3.9	2	-1	70	4.5	4.6	1	2	-18	0	0	0	90	300	-9	-9	-9	2	-1	1	1	12	3
0	0.9	0.3	0	15	13	0	3.9	2	0	70	4.5	4.6	-1	0	-18	0	0	0	90	300	-9	-9	-9	2	-1	1	1	3	3
1	0.4	1.1	0	15	12.4	0	3.6	2	0	70	4.4	4.5	0	0	-25	0	1	0	90	300	1	643	10	2	-1	1	1	10	3
1	0.3	1.3	0	15	12.1	0	3.3	2	0	70	4.5	4.5	-1	0	-26	0	-1	0	90	300	1	643	10	2	-1	1	1	10	3
1	0.4	1.6	0	15	12.1	0	3.3	2	0	70	4.5	4.5	-1	0	-28	0	0	0	90	300	1	643	10	2	-1	1	1	9	3
1	0.4	1.6	0	15	12.1	0	3.3	2	0	70	4.5	4.5	-1	0	-28	0	-1	0	90	300	1	643	10	2	-1	1	1	10	3
0	0.9	1.3	0	15	12.1	0	3.3	2	0	70	4.5	4.5	1	0	-26	0	0	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.7	1.4	0	15	12.1	0	3.3	2	0	70	4.5	4.5	-1	0	-27	0	0	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.7	1.4	0	15	12.1	0	3.3	2	0	70	4.5	4.5	1	0	-27	0	0	0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.8	1.5	0	15	12.1	0	3.3	2	0	70	4.5	4.5	1	0	-27	0	0	0	90	300	-9	-9	-9	2	-1	1	1	9	3
1	0.3	3.3	0	15	16.9	0	3.3	2	0	70	4	4.6	0	0	-34	0	0	0.02	90	300	3	644	0	2	-1	1	1	2	3
1	0.1	3.5	0	15	16.9	0	3.3	2	0	70	4	4.6	1	0	-35	0	0	0.02	90	300	1	643	10	2	-1	1	1	11	3
1	0.6	3.6	0	15	16.9	0	3.3	2	1	70	4	4.6	0	0	-35	0	1	0.02	90	300	1	643	10	2	-1	1	1	10	3
1	0.4	3.7	0	15	16.9	0	3.3	2	0	70	4	4.6	0	0	-35	0	0	0.02	90	300	2	642	20	2	-1	1	1	1	3
1	0.4	3.7	0	15	16.9	0	3.3	2	0	70	4	4.6	-1	0	-35	0	0	0.02	90	300	3	644	0	2	-1	1	1	2	3
1	0.4	3.8	0	15	16.9	0	3.3	2	0	70	4	4.6	-1	0	-35	0	0	0.02	90	300	2	642	20	2	-1	1	1	1	3
0	0.6	3.2	0	15	16.9	0	3.3	2	1	70	4	4.6	-1	2	-34	0	1	0.02	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.9	3.4	0	15	16.9	0	3.3	2	-1	70	4	4.6	1	2	-35	0	-1	0.02	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.5	3.7	0	15	16.9	0	3.3	2	-1	70	4	4.6	0	0	-35	0	-1	0.02	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.8	3.7	0	15	16.9	0	3.3	2	1	70	4	4.6	0	0	-35	0	1	0.02	90	300	-9	-9	-9	2	-1	1	1	3	3
1	0.3	4.3	0	15	16.9	0	3.9	2	1	70	3.2	4.6	0	0	-34	0	0	0.0	90	300	1	643	10	2	-1	1	1	12	3
1	0.4	4.4	0	15	16.9	0	3.9	2	0	70	3.2	4.6	-1	0	-34	0	0	0.0	90	300	2	642	20	2	-1	1	1	1	3
1	0.5	4.4	0	15	16.9	0	3.9	2	0	70	3.2	4.6	0	0	-34	0	0	0.0	90	300	2	642	20	2	-1	1	1	1	3
0	0.5	4.4	0	15	16.9	0	3.9	2	-1	70	3.2	4.6	0	0	-34	0	-1	0.0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.8	4.5	0	15	16.9	0	3.9	2	1	70	3.2	4.6	0	0	-34	0	1	0.0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.7	4.5	0	15	16.9	0	3.9	2	1	70	3.2	4.6	0	0	-34	0	1	0.0	90	300	-9	-9	-9	2	-1	1	1	9	3

CG-6506 **28 APR 98 SEARCHES 1-4**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0.1	0	15	4.5	0.2	0.7	0	0	70	5.9	5.1	-1	2	14	1	0	0.06	90	300	1	641	30	2	-1	2	0	11	3
1	0.1	0.2	0	15	4.5	0.2	0.7	0	-1	70	5.9	5.1	0	0	13	1	0	0.06	90	300	2	640	245	2	-1	2	0	3	3
1	0.2	0.2	0	15	4.5	0.2	0.7	0	-1	70	5.9	5.1	1	0	12	1	1	0.06	90	300	1	641	30	2	-1	2	0	11	3

1	0.1	0.5	0	15	4.7	0.2	0.7	0	0	70	6	5	-1	0	9	1	-1	0.06	90	300	2	640	245	2	-1	2	0	11.5	3
1	0.1	0.6	0	15	4.7	0.2	0.7	0	0	70	6	5	1	0	8	1	1	0.06	90	300	2	640	245	2	-1	2	0	11.5	3
1	0.2	0.6	0	15	4.7	0.2	0.7	0	0	70	6	5	-1	0	8	1	0	0.06	90	300	1	641	30	2	-1	2	0	11.5	3
0	0.9	0.1	0	15	4.5	0.2	0.7	0	1	70	5.9	5.1	1	2	13	1	0	0.06	90	300	-9	-9	-9	2	-1	2	0	3	3
0	0.7	0.7	0	15	4.7	0.2	0.7	0	1	70	6	5	0	0	7	1	0	0.06	90	300	-9	-9	-9	2	-1	2	0	9	3
1	0.1	1.1	0	15	7.4	0.2	0.7	0	0	70	5.9	5	1	0	3	1	0	0.0	90	300	1	641	30	2	-1	2	0	12	3
1	0	1.2	0	15	7.4	0.2	0.7	0	0	70	5.9	5	-1	0	2	1	0	0.0	90	300	1	641	30	2	-1	2	0	11.5	3
1	0.1	1.3	0	15	7.4	0.2	0.7	0	0	70	5.9	5	0	0	1	1	0	0.0	90	300	2	640	245	2	-1	2	0	2	3
1	0.3	1.5	0	15	7.4	0.2	0.7	0	0	70	5.9	5	0	2	-1	1	1	0.0	90	300	2	640	245	2	-1	2	0	2	3
1	0.2	1.6	0	15	4.9	0.2	0.7	0	-1	70	6	5	0	2	-2	1	0	0.0	90	300	1	641	30	2	-1	2	0	10	3
0	0.7	1	0	15	7.4	0.2	0.7	0	1	70	5.9	5	0	0	-5	1	0	0.0	90	300	-9	-9	-9	2	-1	2	0	9	3
0	0.3	1	0	15	7.4	0.2	0.7	0	-1	70	5.9	5	0	0	-5	1	0	0.0	90	300	-9	-9	-9	2	-1	2	0	9	3
0	0.8	1.5	0	15	4.9	0.2	0.7	0	1	70	6	5	1	2	0	1	0	0.0	90	300	-9	-9	-9	2	-1	2	0	3	3
0	0.7	1.5	0	15	4.9	0.2	0.7	0	1	70	6	5	1	2	-1	1	0	0.0	90	300	-9	-9	-9	2	-1	2	0	9	3
1	0.2	3.5	0	15	4.5	0.2	0.7	0	0	70	5.8	4.9	-1	0	-17	0	0	0.13	90	300	1	640	247	2	-1	2	0	3	3
1	0.4	3.6	0	15	4.5	0.2	0.7	0	0	70	5.8	4.9	0	2	-18	0	0	0.13	90	300	2	641	32	2	-1	2	0	3	3
1	0.6	3.7	0	15	4.5	0.2	0.7	0	0	70	5.8	4.9	0	2	-18	0	0	0.13	90	300	3	645	2	2	-1	2	0	3	3
1	0.1	3.8	0	15	4.5	0.2	0.7	0	0	70	5.8	4.9	0	0	-19	0	-1	0.13	90	300	2	641	32	2	-1	2	0	11	3
1	0.1	4	0	15	8.6	0.2	0.3	0	-1	70	6.2	5	0	2	-20	0	0	0.13	90	300	2	641	32	2	-1	2	0	2	3
1	0.3	4.1	0	15	8.6	0.2	0.3	0	0	70	6.2	5	1	0	-21	0	0	0.13	90	300	3	645	2	2	-1	2	0	3	3
1	0.1	4.2	0	15	8.6	0.2	0.3	0	0	70	6.2	5	0	2	-22	0	1	0.13	90	300	2	641	32	2	-1	2	0	11	3
1	0.6	4.3	0	15	8.6	0.2	0.3	0	-1	70	6.2	5	-1	0	-23	0	0	0.13	90	300	2	641	32	2	-1	2	0	2.5	3
0	0.5	3.5	0	15	4.5	0.2	0.7	0	0	70	5.8	4.9	1	0	-18	0	0	0.13	90	300	-9	-9	-9	2	-1	2	0	9	3
0	0.6	3.6	0	15	4.5	0.2	0.7	0	0	70	5.8	4.9	-1	0	-19	0	0	0.13	90	300	-9	-9	-9	2	-1	2	0	9	3
0	0.8	3.8	0	15	4.5	0.2	0.7	0	0	70	5.8	4.9	1	0	-19	0	0	0.13	90	300	-9	-9	-9	2	-1	2	0	9	3
0	0.9	3.9	0	15	8.6	0.2	0.3	0	0	70	6.2	5	0	2	-20	0	0	0.13	90	300	-9	-9	-9	2	-1	2	0	3	3
1	0.6	4.4	0	15	4.7	0.2	0.7	0	0	70	6.1	5	1	0	-23	0	0	0.1	90	300	3	645	2	2	-1	2	0	3	3
1	0	4.4	0	15	4.7	0.2	0.7	0	0	70	6.1	5	0	0	-23	0	0	0.1	90	300	2	641	32	2	-1	2	0	11	3
1	0.4	4.6	0	15	4.7	0.2	0.7	0	0	70	6.1	5	0	0	-24	0	0	0.1	90	300	2	641	32	2	-1	2	0	3	3
1	0.3	4.7	0	15	4.7	0.2	0.7	0	0	70	6.1	5	0	2	-24	0	0	0.1	90	300	1	640	247	2	-1	2	0	10	3
1	0.1	4.8	0	15	4.7	0.2	0.7	0	0	70	6.1	5	0	0	-25	0	0	0.1	90	300	1	640	247	2	-1	2	0	10.5	3
1	0	4.9	0	15	3.7	0.2	0.3	0	0	70	6	5	1	2	-26	0	0	0.1	90	300	1	640	247	2	-1	2	0	12.5	3
1	0.3	5.2	0	15	3.7	0.2	0.3	0	1	70	6	5	0	2	-26	0	0	0.1	90	300	2	641	32	2	-1	2	0	2	3
0	0.6	4.5	0	15	4.7	0.2	0.7	0	0	70	6.1	5	0	2	-24	0	0	0.1	90	300	-9	-9	-9	2	-1	2	0	9	3
0	0.5	5.1	0	15	3.7	0.2	0.3	0	0	70	6	5	1	0	-26	0	0	0.1	90	300	-9	-9	-9	2	-1	2	0	9	3
0	0.4	5.1	0	15	3.7	0.2	0.3	0	0	70	6	5	-1	0	-26	0	0	0.1	90	300	-9	-9	-9	2	-1	2	0	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.2	0.1	0	15	4.5	0.2	0.7	0	0	70	5.9	5.1	0	2	12	1	0	0.06	90	300	1	642	24	2	-1	1	1	11	3
1	0.2	0.2	0	15	4.5	0.2	0.7	0	-1	70	5.9	5.1	-1	2	12	1	0	0.06	90	300	2	643	14	2	-1	1	1	3	3
1	0	0.5	0	15	4.7	0.2	0.7	0	0	70	6	5	-1	0	8	1	0	0.06	90	300	1	642	24	2	-1	1	1	11	3
1	0.2	0.6	0	15	4.7	0.2	0.7	0	0	70	6	5	0	0	7	1	0	0.06	90	300	1	642	24	2	-1	1	1	11	3
0	0.7	0.2	0	15	4.5	0.2	0.7	0	1	70	5.9	5.1	1	2	10	1	0	0.06	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.2	0.6	0	15	4.7	0.2	0.7	0	-1	70	6	5	0	0	7	1	0	0.06	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.8	0.8	0	15	7.4	0.2	0.7	0	1	70	5.9	5	0	0	5	1	0	0.06	90	300	-9	-9	-9	2	-1	1	1	9	3
1	0.1	1.2	0	15	7.4	0.2	0.7	0	0	70	5.9	5	1	0	1	0	0	0.0	90	300	1	642	24	2	-1	1	1	12	3
1	0	1.3	0	15	7.4	0.2	0.7	0	0	70	5.9	5	-1	0	0	0	0	0.0	90	300	1	642	24	2	-1	1	1	11	3
1	0.1	1.3	0	15	4.9	0.2	0.7	0	0	70	6	5	0	0	-2	0	-1	0.0	90	300	1	642	24	2	-1	1	1	11	3
1	0.2	1.7	0	15	4.9	0.2	0.7	0	0	70	6	5	0	2	-3	0	1	0.0	90	300	2	643	14	2	-1	1	1	1	3

1	0.2	1.8	0	15	3.9	0.2	0.7	0	0	70	5.6	4.9	0	2	-4	0	0	0.0	90	300	1	642	24	2	-1	1	1	11	3
0	0.7	1.1	0	15	7.4	0.2	0.7	0	1	70	5.9	5	0	0	2	0	0	0.0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.4	1.1	0	15	7.4	0.2	0.7	0	-1	70	5.9	5	0	0	2	0	0	0.0	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.7	1.6	0	15	4.9	0.2	0.7	0	1	70	6	5	1	2	-2	0	0	0.0	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.9	1.7	0	15	4.9	0.2	0.7	0	-1	70	6	5	1	2	-3	0	0	0.0	90	300	-9	-9	-9	2	-1	1	1	9	3
1	0.2	3.1	0	15	3.7	0.2	0.7	0	0	70	5.8	4.9	-1	0	-16	0	0	0.13	90	300	3	639	25	2	-1	1	1	3	3
1	0.5	3.2	0	15	3.7	0.2	0.7	0	0	70	5.8	4.9	0	0	-16	0	1	0.13	90	300	1	642	24	2	-1	1	1	11	3
1	0.4	3.3	0	15	3.7	0.2	0.7	0	1	70	5.8	4.9	0	2	-17	0	0	0.13	90	300	2	643	14	2	-1	1	1	1	3
1	0.4	3.4	0	15	3.7	0.2	0.7	0	-1	70	5.8	4.9	0	2	-17	0	0	0.13	90	300	2	643	14	2	-1	1	1	2	3
1	0.1	3.5	0	15	4.5	0.2	0.7	0	0	70	5.8	4.9	0	0	-18	0	-1	0.13	90	300	1	642	24	2	-1	1	1	11	3
1	0.1	3.6	0	15	4.5	0.2	0.7	0	-1	70	5.8	4.9	-1	2	-19	0	0	0.13	90	300	1	642	24	2	-1	1	1	1	3
1	0.2	3.9	0	15	8.6	0.2	0.3	0	0	70	6.2	5	0	2	-21	1	0	0.13	90	300	1	642	24	2	-1	1	1	10	3
0	0.6	3.2	0	15	3.7	0.2	0.7	0	0	70	5.8	4.9	-1	0	-16	0	0	0.13	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.8	3.6	0	15	4.5	0.2	0.7	0	0	70	5.8	4.9	0	2	-18	0	0	0.13	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.4	3.7	0	15	8.6	0.2	0.3	0	0	70	6.2	5	1	0	-20	0	0	0.13	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.6	4	0	15	8.6	0.2	0.3	0	0	70	6.2	5	-1	0	-21	1	0	0.13	90	300	-9	-9	-9	2	-1	1	1	3	3
1	0.6	4.1	0	15	8.6	0.2	0.3	0	0	70	6.2	5	1	0	-22	0	0	0.1	90	300	3	639	25	2	-1	1	1	3	3
1	0.1	4.1	0	15	8.6	0.2	0.3	0	0	70	6.2	5	-1	0	-22	0	0	0.1	90	300	1	642	24	2	-1	1	1	9	3
1	0.4	4.2	0	15	8.6	0.2	0.3	0	0	70	6.2	5	-1	0	-23	0	0	0.1	90	300	2	643	14	2	-1	1	1	3	3
1	0.1	4.5	0	15	4.7	0.2	0.7	0	0	70	6.1	5	0	0	-24	0	1	0.1	90	300	1	642	24	2	-1	1	1	11	3
1	0	4.6	0	15	4.7	0.2	0.7	0	0	70	6.1	5	1	2	-24	0	-1	0.1	90	300	1	642	24	2	-1	1	1	12	3
1	0.3	4.8	0	15	3.7	0.2	0.3	0	1	70	6	5	0	2	-26	0	0	0.1	90	300	1	642	24	2	-1	1	1	1	3
0	0.7	4.2	0	15	8.6	0.2	0.3	0	0	70	6.2	5	0	2	-22	0	0	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.3	4.4	0	15	4.7	0.2	0.7	0	0	70	6.1	5	0	2	-24	0	0	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.9	4.7	0	15	4.7	0.2	0.7	0	0	70	6.1	5	0	2	-25	0	0	0.1	90	300	-9	-9	-9	2	-1	1	1	3	3
0	0.6	4.7	0	15	3.7	0.2	0.3	0	0	70	6	5	1	0	-25	0	0	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3
0	0.5	4.8	0	15	3.7	0.2	0.3	0	0	70	6	5	-1	0	-25	0	0	0.1	90	300	-9	-9	-9	2	-1	1	1	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
0	0.5	0.1	0	5	2.9	0.3	0.7	0	0	81	7.6	6.4	-1	0	30	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.2	0.1	0	5	2.9	0.3	0.7	0	0	81	7.6	6.4	1	0	30	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.3	0.2	0	5	3.5	0.3	1	0	0	81	7.6	6.4	1	0	29	1	1	0.21	90	300	-9	-9	-9	3	0	0	0	9	4
0	0	0.2	0	5	3.5	0.3	1	0	0	81	8.2	6.4	0	0	29	1	0	0.21	90	300	-9	-9	-9	3	0	0	0	12	4
0	0.2	0.2	0	5	3.5	0.3	1	0	0	81	8.2	6.4	-1	0	29	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.5	0.3	0	5	3.5	0.3	1	0	0	81	8.2	6.4	1	0	29	1	1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.3	0.3	0	5	3.5	0.3	1	0	0	81	8.2	6.4	-1	0	28	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.5	0.3	0	5	3.5	0.3	1	0	0	81	8.2	6.4	1	0	28	1	1	0.21	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.2	0.4	0	5	3.5	0.3	1	0	0	81	8.2	6.4	-1	0	28	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.2	0.4	0	5	3.5	0.3	1	0	0	81	8.2	6.4	1	0	27	1	1	0.21	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.3	0.5	0	5	3.5	0.3	1	0	0	81	8.2	6.4	1	0	27	1	1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.4	0.5	0	5	3.5	0.3	1	0	0	81	8.2	6.4	1	0	27	1	1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.4	0.5	0	5	3.5	0.3	1	0	0	81	8.2	6.4	-1	0	26	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.6	0.5	0	5	3.5	0.3	1	0	0	81	8.2	6.4	-1	0	26	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.3	0.5	0	5	3.5	0.3	1	0	0	81	8.2	6.4	-1	0	26	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.3	0.5	0	5	3.5	0.3	1	0	0	81	8.2	6.4	-1	0	25	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.3	0.6	0	5	3.5	0.3	1	0	0	81	8.2	6.4	1	0	25	1	1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.3	0.6	0	5	3.5	0.3	1	0	0	81	8.2	6.4	1	0	25	1	1	0.21	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.1	0.6	0	5	3.5	0.3	1	0	0	81	8.2	6.4	-1	0	24	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	9	4
0	0	0.6	0	5	3.5	0.3	1	0	0	81	8.2	6.4	-1	0	24	1	-1	0.21	90	300	-9	-9	-9	3	0	0	0	9	4

1	0.2	0.9	0	5	1.7	0.2	1	0	1	90	7.9	6.4	0	0	21	1	0	0.2	90	300	2	641	26	3	0	0	0	2.5	4
1	0.1	1.1	0	5	1.7	0.2	1	0	0	90	7.9	6.4	0	0	19	1	0	0.2	90	300	2	641	26	3	0	0	0	2	4
1	0	1.6	0	5	4.1	0.2	0.7	0	0	90	9	6.4	1	0	16	1	1	0.2	90	300	1	640	244	3	0	0	0	10	4
1	0.4	1.3	0	5	1.7	0.2	1	0	0	90	7.9	6.4	1	0	19	1	0	0.2	90	300	2	641	26	3	0	0	0	3	4
0	0	0.9	0	5	1.7	0.2	1	0	1	90	7.9	6.4	0	0	22	1	0	0.2	90	300	-9	-9	-9	3	0	0	0	12	4
0	0	0.9	0	5	1.7	0.2	1	0	0	90	7.9	6.4	0	0	21	1	0	0.2	90	300	-9	-9	-9	3	0	0	0	12	4
0	0.2	1	0	5	1.7	0.2	1	0	0	90	7.9	6.4	1	0	21	1	1	0.2	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.4	1	0	5	1.7	0.2	1	0	0	90	7.9	6.4	1	0	21	1	1	0.2	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.5	1.1	0	5	1.7	0.2	1	0	0	90	7.9	6.4	-1	0	19	1	-1	0.2	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.6	1.1	0	5	1.7	0.2	1	0	0	90	7.9	6.4	-1	0	18	1	-1	0.2	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.1	1.2	0	5	4.1	0.2	0.7	0	0	90	9	6.4	-1	0	18	1	-1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0	1.2	0	5	4.1	0.2	0.7	0	-1	90	9	6.4	0	0	18	1	0	0.2	90	300	-9	-9	-9	3	0	0	0	12	4
0	0.5	1.2	0	5	4.1	0.2	0.7	0	0	90	9	6.4	1	0	18	1	1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.4	1.2	0	5	4.1	0.2	0.7	0	0	90	9	6.4	1	0	18	1	1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.1	1.3	0	5	4.1	0.2	0.7	0	0	90	9	6.4	-1	0	17	1	-1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.1	1.3	0	5	4.1	0.2	0.7	0	0	90	9	6.4	-1	0	17	1	-1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.4	1.3	0	5	4.1	0.2	0.7	0	0	90	9	6.4	-1	0	17	1	-1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.4	1.3	0	5	4.1	0.2	0.7	0	0	90	9	6.4	-1	0	17	1	-1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.2	1.4	0	5	4.1	0.2	0.7	0	0	90	9	6.4	1	0	16	1	1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.4	1.4	0	5	4.1	0.2	0.7	0	0	90	9	6.4	1	0	16	1	1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.4	1.4	0	5	4.1	0.2	0.7	0	0	90	9	6.4	1	0	16	1	1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.5	0.8	0	5	1.7	0.2	1	0	0	90	7.9	6.4	-1	0	21	1	-1	0.2	90	300	-9	-9	-9	3	0	0	0	9	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.5	0.1	0	5	2.9	0.3	0.7	0	-1	81	7.9	6.4	-1	0	33	1	-1	0.21	90	300	1	643	20	3	0	1	1	10	3
1	0.4	0.2	0	5	2.9	0.3	0.7	0	1	81	7.9	6.4	1	0	32	1	1	0.21	90	300	1	643	20	3	0	1	1	10	3
1	0.1	0.2	0	5	2.9	0.3	0.7	0	1	81	7.9	6.4	0	0	32	1	0	0.21	90	300	1	643	20	3	0	1	1	11.5	3
1	0.5	0.2	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	1	0	32	1	1	0.21	90	300	2	642	30	3	0	1	1	2	3
1	0.3	0.4	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	0	0	29	1	0	0.21	90	300	2	642	30	3	0	1	1	11	3
1	0.2	0.4	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	1	0	29	1	1	0.21	90	300	1	643	20	3	0	1	1	2	3
1	0.3	0.5	0	5	2.9	0.3	0.7	0	0	81	8	6.4	1	0	29	1	1	0.21	90	300	1	643	20	3	0	2	1	2	3
1	0.1	0.5	0	5	2.9	0.3	0.7	0	-1	81	8	6.4	1	2	29	1	0	0.21	90	300	1	643	20	3	0	2	1	3	3
1	0.2	0.5	0	5	2.9	0.3	0.7	0	0	81	8	6.4	0	0	28	1	0	0.21	90	300	1	643	20	3	0	2	1	1	3
1	0.3	0.5	0	5	2.9	0.3	0.7	0	0	81	8	6.4	0	0	28	1	0	0.21	90	300	1	643	20	3	0	2	1	1	3
1	0.2	0.6	0	5	2.9	0.3	0.7	0	0	81	8	6.4	0	0	27	1	0	0.21	90	300	1	643	20	3	0	2	1	1	3
1	0.2	0.6	0	5	2.9	0.3	0.7	0	0	81	8	6.4	0	0	27	1	0	0.21	90	300	1	643	20	3	0	2	1	1	3
1	0.1	0.6	0	5	2.9	0.3	0.7	0	-1	81	8	6.4	0	0	27	1	0	0.21	90	300	2	642	30	3	0	2	1	11.5	3
1	0.1	0.6	0	5	2.9	0.3	0.7	0	-1	81	8	6.4	0	0	27	1	0	0.21	90	300	2	642	30	3	0	2	1	11.5	3
0	0.7	0	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	-1	0	34	1	-1	0.21	90	300	-9	-9	-9	3	0	1	1	3	3
0	0.3	0.1	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	-1	0	32	1	-1	0.21	90	300	-9	-9	-9	3	0	1	1	9	3
0	0.7	0.2	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	-1	0	32	1	-1	0.21	90	300	-9	-9	-9	3	0	1	1	3	3
0	0.3	0.3	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	-1	0	31	1	-1	0.21	90	300	-9	-9	-9	3	0	1	1	9	3
0	0.8	0.3	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	-1	0	30	1	-1	0.21	90	300	-9	-9	-9	3	0	1	1	9	3
0	0.7	0.3	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	-1	0	30	1	-1	0.21	90	300	-9	-9	-9	3	0	1	1	9	3
0	0.3	0.3	0	5	2.9	0.3	0.7	0	0	81	7.9	6.4	1	0	29	1	1	0.21	90	300	-9	-9	-9	3	0	1	1	9	3
0	0.7	0.4	0	5	2.9	0.3	0.7	0	0	81	8	6.4	1	0	29	1	1	0.21	90	300	-9	-9	-9	3	0	1	1	3	3
0	0.3	0.6	0	5	2.9	0.3	0.7	0	0	81	8	6.4	-1	0	18	1	-1	0.21	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	0.6	0	5	2.9	0.3	0.7	0	0	81	8	6.4	-1	0	18	1	-1	0.21	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.7	0.3	0	5	2.9	0.3	0.7	0	0	81	8	6.4	1	0	30	1	1	0.21	90	300	-9	-9	-9	3	0	2	1	3	3

1	0.1	0.8	0	5	2.9	0.2	0.7	0	1	90	8	6.4	0	0	26	1	0	0.2	90	300	1	643	20	3	0	2	1	11	3
1	0.3	0.9	0	5	2.9	0.2	0.7	0	0	90	8	6.4	-1	0	25	1	0	0.2	90	300	2	642	30	3	0	2	1	2	3
1	0.3	0.9	0	5	2.9	0.2	0.7	0	0	90	8	6.4	0	0	25	1	0	0.2	90	300	1	643	20	3	0	2	1	2	3
1	0.1	0.9	0	5	2.9	0.2	0.7	0	0	90	8	6.4	0	0	25	1	0	0.2	90	300	2	642	30	3	0	2	1	1	3
1	0	1	0	5	2.9	0.2	1	0	0	90	8.3	6.4	0	2	24	1	0	0.2	90	300	1	643	20	3	0	2	1	12	3
1	0	1	0	5	2.9	0.2	1	0	0	90	8.3	6.4	-1	0	23	1	-1	0.2	90	300	1	643	20	3	0	2	1	3	3
1	0.4	1.1	0	5	2.9	0.2	1	0	0	90	8.3	6.4	0	0	22	1	0	0.2	90	300	2	642	30	3	0	2	1	1	3
1	0.1	1.1	0	5	2.9	0.2	1	0	-1	90	8.3	6.4	0	0	22	1	0	0.2	90	300	1	643	20	3	0	2	1	11	3
1	0	1.1	0	5	2.9	0.2	1	0	-1	90	8.3	6.4	0	0	22	1	0	0.2	90	300	2	642	30	3	0	2	1	11.5	3
1	0.1	1.2	0	5	2.9	0.2	1	0	0	90	8.3	6.4	0	2	21	1	-1	0.2	90	300	1	643	20	3	0	2	1	11	3
1	0.2	1.2	0	5	2.9	0.2	1	0	1	90	8.3	6.4	0	0	19	1	0	0.2	90	300	1	643	20	3	0	2	1	9	3
1	0.2	1.3	0	5	2.9	0.2	1	0	-1	90	8.3	6.4	0	0	19	1	0	0.2	90	300	1	643	20	3	0	2	1	11	3
1	0.2	1.3	0	5	2.9	0.2	1	0	-1	90	8.3	6.4	0	0	19	1	0	0.2	90	300	1	643	20	3	0	2	1	11	3
1	0.2	1.4	0	5	2.9	0.2	1	0	0	90	8.3	6.4	1	0	18	1	1	0.2	90	300	1	643	20	3	0	2	1	10	3
1	0.1	1.4	0	5	2.9	0.2	1	0	1	90	8.3	6.4	0	0	18	1	0	0.2	90	300	1	643	20	3	0	2	1	11	3
1	0.4	1.4	0	5	2.9	0.2	1	0	0	90	8.3	6.4	1	0	18	1	1	0.2	90	300	1	643	20	3	0	2	1	10	3
0	0.6	0.8	0	5	2.9	0.2	0.7	0	0	90	8	6.4	-1	0	26	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.7	0.9	0	5	2.9	0.2	0.7	0	0	90	8	6.4	-1	0	25	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.4	1	0	5	2.9	0.2	1	0	0	90	8.3	6.4	1	0	24	1	1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.3	1	0	5	2.9	0.2	1	0	0	90	8.3	6.4	-1	0	23	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	1	0	5	2.9	0.2	1	0	0	90	8.3	6.4	-1	0	23	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.7	1.1	0	5	2.9	0.2	1	0	0	90	8.3	6.4	1	0	23	1	1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.5	1.1	0	5	2.9	0.2	1	0	0	90	8.3	6.4	1	0	23	1	1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.7	1.2	0	5	2.9	0.2	1	0	0	90	8.3	6.4	-1	0	22	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.6	1.2	0	5	2.9	0.2	1	0	0	90	8.3	6.4	1	0	21	1	1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.5	1.2	0	5	2.9	0.2	1	0	0	90	8.3	6.4	1	0	21	1	1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.6	1.2	0	5	2.9	0.2	1	0	0	90	8.3	6.4	-1	0	21	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.6	1.2	0	5	2.9	0.2	1	0	0	90	8.3	6.4	-1	0	21	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	3	3
0	0.5	1.3	0	5	2.9	0.2	1	0	0	90	8.3	6.4	-1	0	20	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.5	1.3	0	5	2.9	0.2	1	0	0	90	8.3	6.4	-1	0	20	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3
0	0.4	1.4	0	5	2.9	0.2	1	0	0	90	8.3	6.4	-1	0	19	1	-1	0.2	90	300	-9	-9	-9	3	0	2	1	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.3	0.3	1	12	3.3	1	1	0	0	90	7	6.1	1	0	49	0	1	0.51	90	300	4	649	10	1	0	0	0	9	3
1	0.1	0.3	1	12	3.3	1	1	0	0	90	7	6.1	1	0	48	0	1	0.51	90	300	4	649	10	1	1	0	0	9	3
1	0.1	0.4	1	12	3.3	1	1	0	-1	90	7	6.1	0	0	48	0	0	0.51	90	300	2	647	100	1	1	0	0	1	3
1	0.1	0.7	1	12	2.9	1	1	0	0	90	7	6.1	0	2	46	0	0	0.51	90	300	1	646	30	1	0	0	0	11	3
0	0.5	0	1	12	7.6	1	1.3	0	0	90	7.3	6.1	0	2	51	0	1	0.51	90	300	-9	-9	-9	1	0	0	0	9	3
0	0.4	0.2	1	12	3.3	1	1	0	0	90	7	6.1	0	2	50	0	-1	0.51	90	300	-9	-9	-9	1	0	0	0	9	3
0	0.6	0.4	1	12	3.3	1	1	0	0	90	7	6.1	-1	0	48	0	-1	0.51	90	300	-9	-9	-9	1	0	0	0	9	3
0	0.7	0.6	1	12	3.3	1	1	0	0	90	7	6.1	-1	0	46	0	-1	0.51	90	300	-9	-9	-9	1	1	0	0	3	3
1	0.2	1.2	1	12	5.4	1	1	0	0	90	7.1	6.1	1	0	40	1	1	0.5	90	300	2	647	30	1	1	0	0	3	3
1	0.4	1.3	1	12	5.4	1	1	0	0	90	7.1	6.1	1	0	39	0	-1	0.5	90	300	3	648	10	1	0	0	0	2	3
1	0.5	1.4	1	12	5.4	1	1	0	0	90	7.1	6.1	1	0	39	1	-1	0.5	90	300	4	649	10	1	1	0	0	8	3
1	0.1	1.5	1	12	5.4	1	1	0	1	90	7.1	6.1	0	2	37	1	0	0.5	90	300	1	646	30	1	0	0	0	11	3
0	0.2	1.1	1	12	5.4	1	1	0	0	90	7.1	6.1	0	2	42	1	-1	0.5	90	300	-9	-9	-9	1	0	0	0	3	3
0	0.5	1.2	1	12	5.4	1	1	0	0	90	7.1	6.1	1	0	40	1	1	0.5	90	300	-9	-9	-9	1	0	0	0	3	3
0	0.7	1.4	1	12	5.4	1	1	0	0	90	7.1	6.1	-1	0	39	0	-1	0.5	90	300	-9	-9	-9	1	1	0	0	3	3
0	0.5	1.4	1	12	5.4	1	1	0	0	90	7.1	6.1	1	0	39	0	1	0.5	90	300	-9	-9	-9	1	1	0	0	9	3

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.4	0.1	1	12	3.3	1	1	0	0	90	7	6.1	0	2	50	1	0	0.51	90	300	1	650	30	1	0	1	1	10.5	4
1	0.2	0.3	3	5	2.9	1	1	0	0	90	7	6.1	1	0	48	0	0	0.51	90	300	1	650	30	1	0	1	1	10	4
1	0	0.4	3	5	2.9	1	1	0	0	90	7	6.1	0	0	48	0	0	0.51	90	300	1	650	30	1	1	1	1	11.5	4
1	0.3	0.7	2	8	2.9	1	1	0	-1	90	7	6.1	0	2	44	0	0	0.51	90	300	4	652	0	1	0	1	1	9	4
0	0.9	0.2	1	12	3.3	1	1	0	0	90	7	6.1	1	0	49	1	1	0.51	90	300	-9	-9	-9	1	1	1	1	3	4
0	0.6	0.2	1	12	3.3	1	1	0	0	90	7	6.1	0	2	48	0	-1	0.51	90	300	-9	-9	-9	1	0	1	1	9	4
0	0.8	0.4	3	5	2.9	1	1	0	0	90	7	6.1	-1	0	46	0	0	0.51	90	300	-9	-9	-9	1	0	1	1	9	4
0	0.8	0.5	3	5	2.9	1	1	0	1	90	7	6.1	0	2	45	0	1	0.51	90	300	-9	-9	-9	1	0	1	1	9	4
0	0.8	0.6	3	5	2.9	1	1	0	0	90	7	6.1	-1	0	44	0	-1	0.51	90	300	-9	-9	-9	1	1	1	1	3	4
1	**0.1**	**1.2**	**1**	**12**	**5.4**	**1**	**1**	**0**	**0**	**90**	**7.1**	**6.1**	**0**	**2**	**38**	**1**	**0**	**0.5**	**90**	**300**	**2**	**651**	**30**	**1**	**0**	**1**	**1**	**1.5**	**4**
1	**0.3**	**1.3**	**1**	**12**	**5.4**	**1**	**1**	**0**	**0**	**90**	**7.1**	**6.1**	**0**	**0**	**37**	**0**	**1**	**0.5**	**90**	**300**	**2**	**651**	**30**	**1**	**1**	**1**	**1**	**2**	**4**
0	**0.7**	**1.1**	**1**	**12**	**5.4**	**1**	**1**	**0**	**0**	**90**	**7.1**	**6.1**	**0**	**2**	**39**	**1**	**0**	**0.5**	**90**	**300**	**-9**	**-9**	**-9**	**1**	**0**	**1**	**1**	**3**	**4**
0	**0.5**	**1.3**	**1**	**12**	**5.4**	**1**	**1**	**0**	**0**	**90**	**7.1**	**6.1**	**1**	**0**	**37**	**1**	**0**	**0.5**	**90**	**300**	**-9**	**-9**	**-9**	**1**	**0**	**1**	**1**	**3**	**4**
1	0.5	3.2	0	12	7.6	0.9	1	0	0	90	7.4	6	0	2	18	0	1	0.61	90	300	2	651	30	1	0	1	1	10	4
1	0.2	3.3	0	12	7.6	0.9	1	0	-1	90	7.4	6	1	2	17	0	0	0.61	90	300	4	652	0	1	0	1	1	9	4
1	0.1	3.5	0	12	7.2	0.9	1	0	0	90	7.2	6	0	0	15	0	0	0.61	90	300	2	651	30	1	0	1	1	2	4
1	0.6	3.8	0	12	7.2	0.9	1	0	1	90	7.2	6	0	0	12	0	0	0.61	90	300	4	652	0	1	1	1	1	9	4
0	0.9	3.2	0	12	7.6	0.9	1	0	1	90	7.4	6	-1	2	18	0	0	0.61	90	300	-9	-9	-9	1	0	1	1	9	4
0	0.8	3.4	0	12	7.6	0.9	1	0	1	90	7.4	6	0	0	16	0	0	0.61	90	300	-9	-9	-9	1	0	1	1	3	4
0	0.4	3.6	0	12	7.2	0.9	1	0	1	90	7.2	6	0	0	13	0	0	0.61	90	300	-9	-9	-9	1	1	1	1	9	4
0	0.6	3.7	0	12	7.2	0.9	1	0	-1	90	7.2	6	0	0	12	0	0	0.61	90	300	-9	-9	-9	1	1	1	1	9	4
0	0.5	3.9	0	12	7.2	0.9	1	0	-1	90	7.2	6	0	0	10	0	0	0.61	90	300	-9	-9	-9	1	1	1	1	9	4
1	**0.5**	**4**	**0**	**12**	**4.9**	**1**	**1.3**	**0**	**0**	**90**	**7.2**	**6**	**0**	**0**	**9**	**0**	**0**	**0.6**	**90**	**300**	**1**	**650**	**30**	**1**	**1**	**0**	**1**	**10**	**4**
1	**0.6**	**4.1**	**0**	**12**	**4.9**	**1**	**1.3**	**0**	**0**	**90**	**7.2**	**6**	**0**	**0**	**8**	**0**	**0**	**0.6**	**90**	**300**	**2**	**651**	**30**	**1**	**1**	**0**	**1**	**10**	**4**
1	**0.5**	**4.2**	**0**	**12**	**4.9**	**1**	**1.3**	**0**	**0**	**90**	**7.2**	**6**	**-1**	**0**	**7**	**0**	**0**	**0.6**	**90**	**300**	**2**	**651**	**30**	**1**	**1**	**0**	**1**	**11.5**	**4**
1	**0.1**	**4.4**	**0**	**12**	**4.9**	**1**	**1.3**	**0**	**0**	**90**	**7.2**	**6**	**-1**	**0**	**5**	**0**	**-1**	**0.6**	**90**	**300**	**2**	**651**	**30**	**1**	**0**	**0**	**1**	**1**	**4**
1	**0**	**4.6**	**0**	**12**	**5.1**	**1**	**1**	**0**	**0**	**90**	**7.1**	**6**	**0**	**2**	**4**	**0**	**1**	**0.6**	**90**	**300**	**1**	**650**	**30**	**1**	**0**	**0**	**1**	**12**	**4**
1	**0.2**	**4.6**	**0**	**12**	**5.1**	**1**	**1**	**0**	**0**	**90**	**7.1**	**6**	**1**	**2**	**3**	**0**	**0**	**0.6**	**90**	**300**	**4**	**652**	**0**	**1**	**0**	**0**	**1**	**10**	**4**
0	**0.6**	**4.1**	**0**	**12**	**4.9**	**1**	**1.3**	**0**	**-1**	**90**	**7.2**	**6**	**0**	**0**	**8**	**0**	**0**	**0.6**	**90**	**300**	**-9**	**-9**	**-9**	**1**	**1**	**0**	**1**	**9**	**4**
0	**0.8**	**4.4**	**0**	**12**	**4.9**	**1**	**1.3**	**0**	**1**	**90**	**7.2**	**6**	**0**	**0**	**4**	**0**	**0**	**0.6**	**90**	**300**	**-9**	**-9**	**-9**	**1**	**0**	**0**	**1**	**3**	**4**

CG-6506 5 MAY 98 SEARCHES 1-4

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.2	0.2	0	5	6.2	0.8	0.7	0	0	59	9.1	7.1	0	0	52	1	1	0.7	90	300	3	648	14	1	0	0	0	2.5	4
1	0.6	0.2	0	5	5.8	0.8	0.7	0	0	59	9.2	7.1	0	2	52	1	0	0.7	90	300	4	649	14	1	0	0	0	10	4
1	0.5	0.3	0	5	5.8	0.8	0.7	0	0	59	9.2	7.1	0	0	52	1	-1	0.7	90	300	2	650	34	1	0	0	0	2	4
1	0.5	0.5	0	5	5.8	0.8	0.7	0	0	59	9.2	7.1	0	2	51	1	1	0.7	90	300	2	650	34	1	0	0	0	2	4
1	0.1	0.6	0	5	7	0.8	0.7	0	0	59	9	7.1	0	0	51	1	0	0.7	90	300	2	650	34	1	1	0	0	2	4
1	0.2	0.7	0	5	7	0.6	0.7	0	0	67	9	7.1	0	0	50	1	-1	0.7	90	300	2	650	34	1	1	0	0	1	4
0	1	0.3	0	5	5.8	0.8	0.7	0	0	59	9.2	7.1	0	2	52	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	9	4
0	1.2	0.4	0	5	5.8	0.8	0.7	0	0	59	9.2	7.1	1	0	52	1	0	0.7	90	300	-9	-9	-9	1	1	0	0	3	4
0	1.3	0.4	0	5	5.8	0.8	0.7	0	0	59	9.2	7.1	-1	0	52	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	9	4
0	1.2	0.5	0	5	5.8	0.8	0.7	0	0	59	9.2	7.1	0	2	51	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	3	4
0	1.3	0.7	0	5	5.8	0.8	0.7	0	0	59	9.2	7.1	-1	0	50	1	0	0.7	90	300	-9	-9	-9	1	1	0	0	9	4
0	0.7	0.7	0	5	5.8	0.8	0.7	0	0	59	9.2	7.1	1	0	50	1	0	0.7	90	300	-9	-9	-9	1	1	0	0	3	4
0	0.7	0	0	5	6.2	0.8	0.7	0	0	59	9.1	7.1	0	2	52	1	0	0.7	90	300	-9	-9	-9	1	1	0	0	3	4

0	1	0.1	0	5	6.2	0.8	0.7	0	0	59	9.1	7.1	1	0	52	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	9	4
1	0.3	1.2	0	5	4.9	0.6	1	0	0	70	9.7	7.1	-1	0	48	1	0	0.7	90	300	4	649	14	1	0	0	0	10	4
1	0.1	1.3	0	5	5.1	0.6	0.7	0	0	70	9.3	7.1	0	2	48	1	0	0.7	90	300	1	654	30	1	0	0	0	11	4
1	1	1.4	0	5	5.1	0.6	0.7	0	0	70	9.3	7.1	1	0	47	1	0	0.7	90	300	4	649	14	1	1	0	0	9	4
1	0	1.4	0	5	5.1	0.6	0.7	0	1	70	9.3	7.1	0	0	47	1	0	0.7	90	300	2	650	34	1	1	0	0	12	4
1	0.8	1.5	0	5	5.1	0.6	0.7	0	0	70	9.3	7.1	0	2	46	1	0	0.7	90	300	4	649	14	1	0	0	0	10	4
0	0.7	1	0	5	4.9	0.6	1	0	0	70	9.7	7.1	0	2	49	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	3	4
0	0.7	1.1	0	5	4.9	0.6	1	0	0	70	9.7	7.1	0	2	49	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	3	4
0	0.5	1.1	0	5	4.9	0.6	1	0	0	70	9.7	7.1	1	0	48	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	9	4
0	1.4	1.3	0	5	5.1	0.6	0.7	0	0	70	9.3	7.1	0	2	48	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	9	4
0	1.2	1.3	0	5	5.1	0.6	0.7	0	0	70	9.3	7.1	0	2	48	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	3	4
0	1.4	1.4	0	5	5.1	0.6	0.7	0	0	70	9.3	7.1	-1	0	47	1	0	0.7	90	300	-9	-9	-9	1	0	0	0	3	4
1	0.3	3	0	2	6.2	0.6	0.7	0	0	100	8.9	7.1	0	2	35	1	0	0.78	90	300	1	650	36	1	0	2	0	2	4
1	0.2	3.4	0	2	5.4	0.6	0.7	0	1	100	9.1	7.1	0	0	31	1	0	0.78	90	300	3	648	16	1	1	2	0	3	4
0	0.3	2.9	0	2	6.2	0.6	0.7	0	-1	100	8.9	7.1	-1	2	35	1	0	0.78	90	300	-9	-9	-9	1	0	2	0	3	4
0	0.7	3	0	2	5.4	0.6	0.7	0	1	100	8.9	7.1	1	2	35	1	0	0.78	90	300	-9	-9	-9	1	0	2	0	3	4
0	0.5	3.3	0	2	5.4	0.6	0.7	0	-1	100	9.1	7.1	0	0	32	1	0	0.78	90	300	-9	-9	-9	1	0	2	0	9	4
0	0.6	3.4	0	2	5.4	0.6	0.7	0	1	100	9.1	7.1	0	0	32	1	0	0.78	90	300	-9	-9	-9	1	0	2	0	9	4
0	0.7	3.4	0	2	5.4	0.6	0.7	0	-1	100	9.1	7.1	0	0	31	1	0	0.78	90	300	-9	-9	-9	1	1	2	0	3	4
0	0.6	3.5	0	0.5	5.4	0.7	0.7	0	-1	100	9.1	7.1	0	0	31	1	0	0.78	90	300	-9	-9	-9	1	1	2	0	9	4
0	0.4	3.6	0	0.5	5.4	0.7	0.7	0	1	100	9.1	7.1	0	0	30	0	0	0.78	90	300	-9	-9	-9	1	1	2	0	9	4
1	0.3	3.8	0	0.5	6.2	0.7	0.7	0	0	100	9.1	7.1	1	0	28	1	0	0.7	90	300	1	650	38	1	1	2	0	10.5	4
1	0.2	3.8	0	0.5	6.2	0.7	0.7	0	1	100	9.1	7.1	0	0	28	0	0	0.7	90	300	3	648	19	1	1	2	0	4	4
0	0.7	3.9	0	0.5	6.2	0.7	0.7	0	-1	100	9.1	7.1	0	0	27	0	0	0.7	90	300	-9	-9	-9	1	1	2	0	9	4
0	0.5	3.9	0	0.5	6.2	0.7	0.7	0	1	100	9.1	7.1	0	0	26	1	0	0.7	90	300	-9	-9	-9	1	0	2	0	9	4
0	0.5	4	0	0.5	6.2	0.7	0.7	0	-1	100	9.1	7.1	0	0	25	1	0	0.7	90	300	-9	-9	-9	1	0	2	0	9	4
0	0.7	4	0	0.5	6.2	0.7	0.7	0	-1	100	9.1	7.1	0	0	26	1	0	0.7	90	300	-9	-9	-9	1	0	2	0	3	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.2	0.1	0	5	6.8	0.8	1	0	0	59	9.7	7.1	0	0	53	1	0	0.7	90	300	2	651	32	1	0	1	1	2	4
1	0	0.5	0	5	5.4	0.8	1	0	1	59	10.2	7.1	1	2	53	1	1	0.7	90	300	2	651	32	1	0	1	1	12	4
1	0.3	0.6	0	5	5.4	0.8	1	0	0	59	11.2	7.1	0	0	52	1	0	0.7	90	300	2	651	32	1	1	1	1	2	4
1	0.3	0.9	0	5	6	0.8	1	0	0	59	10.2	7.1	0	0	52	1	0	0.7	90	300	2	651	32	1	1	1	1	2	4
0	0.5	1	0	5	6.8	0.8	1	0	0	59	9.7	7.1	0	2	53	1	0	0.7	90	300	-9	-9	-9	1	0	1	1	9	4
0	0.6	1.2	0	5	6.8	0.8	1	0	0	59	9.7	7.1	0	2	53	1	0	0.7	90	300	-9	-9	-9	1	0	1	1	9	4
0	0.7	1.3	0	5	5.4	0.8	1	0	0	59	10.2	7.1	-1	0	53	1	0	0.7	90	300	-9	-9	-9	1	0	1	1	3	4
0	0.6	1.4	0	5	5.4	0.8	1	0	0	59	10.2	7.1	1	0	53	1	0	0.7	90	300	-9	-9	-9	1	1	1	1	3	4
0	0.6	1.6	0	5	5.4	0.8	1	0	0	59	10.2	7.1	1	0	52	1	0	0.7	90	300	-9	-9	-9	1	1	1	1	3	4
1	0.3	1.2	0	5	6	0.8	1	0	0	59	11.2	7.1	0	2	51	1	-1	0.7	90	300	3	653	10	1	0	1	1	2	4
0	0.5	1.1	0	5	6	0.8	1	0	0	67	11.2	7.1	0	2	51	1	0	0.7	90	300	-9	-9	-9	1	0	1	1	3	4
0	0.5	1.2	0	5	6	0.8	1	0	0	67	11.2	7.1	0	0	50	1	0	0.7	90	300	-9	-9	-9	1	0	1	1	9	4
0	0.5	1.3	0	5	4.9	0.6	1	0	0	67	11.2	7.1	0	0	50	1	0	0.7	90	300	-9	-9	-9	1	0	1	1	9	4
1	0.3	3.3	0	2	6.2	0.6	0.7	0	0	100	8.9	7.1	0	2	37	1	0	0.78	90	300	2	651	34	1	0	2	1	1	4
1	0.3	3.7	0	2	6.2	0.6	0.7	0	0	100	8.9	7.1	0	0	34	1	-1	0.78	90	300	1	646	34	1	1	2	1	2	4
1	0.5	3.8	0	2	5.4	0.7	0.7	0	0	100	9.1	7.1	0	0	33	1	1	0.78	90	300	2	651	34	1	1	2	1	11	4
0	0.3	3.3	0	2	6.2	0.6	0.7	0	-1	100	8.9	7.1	-1	2	37	1	0	0.78	90	300	-9	-9	-9	1	0	2	1	3	4
0	0.6	3.3	0	2	6.2	0.6	0.7	0	1	100	8.9	7.1	1	2	37	1	0	0.78	90	300	-9	-9	-9	1	0	2	1	3	4
0	0.5	3.6	0	2	6.2	0.6	0.7	0	-1	100	8.9	7.1	0	0	35	1	0	0.78	90	300	-9	-9	-9	1	0	2	1	9	4
0	0.6	3.6	0	2	6.2	0.6	0.7	0	1	100	8.9	7.1	0	0	35	1	0	0.78	90	300	-9	-9	-9	1	0	2	1	9	4

0	0.7	3.7	0	2	6.2	0.6	0.7	0	-1	100	8.9	7.1	0	0	34	1	0	0.78	90	300	-9	-9	-9	1	1	2	1	3	4
0	0.7	3.7	0	2	6.2	0.7	0.7	0	-1	100	8.9	7.1	0	0	34	1	0	0.78	90	300	-9	-9	-9	1	1	2	1	9	4
1	0.2	4.1	0	0.5	5.4	0.7	0.7	0	0	100	9.1	7.1	0	0	29	0	0	0.7	90	300	3	653	6	1	1	2	1	3	4
0	0.4	4.2	0	0.5	5.4	0.7	0.7	0	1	100	9.1	7.1	0	0	28	0	0	0.7	90	300	-9	-9	-9	1	1	2	1	9	4
0	0.7	4.2	0	0.5	5.4	0.7	0.7	0	-1	100	9.1	7.1	0	0	28	0	0	0.7	90	300	-9	-9	-9	1	1	2	1	9	4
0	0.5	4.3	0	0.5	6.2	0.7	0.7	0	1	100	9.1	7.1	0	0	28	0	0	0.7	90	300	-9	-9	-9	1	0	2	1	9	4
0	0.5	4.4	0	0.5	6.2	0.7	0.7	0	-1	100	9.1	7.1	0	0	27	0	0	0.7	90	300	-9	-9	-9	1	0	2	1	9	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.2	0.2	0	15	8.4	1	1.6	1	0	80	11.5	7.6	-1	2	43	0	-1	0.85	90	300	2	651	100	1	0	0	0	1	4
1	0	0.4	0	15	8.4	1	1.6	1	0	80	11.5	7.6	1	2	44	0	1	0.85	90	300	1	646	290	2	-1	0	0	12	4
1	0.1	0.6	0	15	8.2	1	1.6	1	1	80	11.8	7.8	0	0	45	0	0	0.85	90	300	2	651	100	1	1	0	0	0.5	4
1	0.2	0.6	0	15	8.2	1	1.6	1	0	80	11.8	7.8	0	0	45	0	0	0.85	90	300	1	646	290	1	1	0	0	2	4
1	0.5	0.7	0	15	8.2	1	1.6	1	0	80	11.8	7.8	0	2	46	0	0	0.85	90	300	3	655	20	1	0	0	0	4	4
0	0.4	0	0	15	8.4	1	1.6	1	-1	80	11.5	7.6	1	0	45	0	0	0.85	90	300	-9	-9	-9	1	0	0	0	9	4
0	0.6	0.2	0	15	8.4	1	1.6	1	1	80	11.5	7.6	-1	0	43	0	0	0.85	90	300	-9	-9	-9	1	0	0	0	9	4
0	0.9	0.3	0	15	8.4	1	1.6	1	-1	80	11.5	7.6	1	0	44	0	0	0.85	90	300	-9	-9	-9	2	-1	0	0	9	4
0	0.8	0.3	0	15	8.4	1	1.6	1	-1	80	11.5	7.6	1	0	44	0	0	0.85	90	300	-9	-9	-9	1	1	0	0	3	4
0	0.6	0.7	0	15	8.2	1	1.6	1	-1	80	11.8	7.8	0	2	45	0	0	0.85	90	300	-9	-9	-9	1	0	0	0	3	4
0	0.7	0.8	0	15	8.2	1	1.6	1	1	80	11.8	7.8	-1	0	45	0	0	0.85	90	300	-9	-9	-9	1	1	0	0	3	4
0	0.9	0.5	0	15	8.4	1	1.6	1	1	80	11.5	7.6	0	2	45	0	0	0.85	90	300	-9	-9	-9	1	0	0	0	9	4
1	0.4	1.1	0	15	8.9	1	1.6	1	1	90	12.1	7.8	-1	0	45	0	0	0.8	90	300	1	646	290	1	0	0	0	3	4
1	0.2	1.2	0	15	8.9	1	1.6	1	-1	90	12.1	7.8	0	2	45	0	0	0.8	90	300	2	651	100	1	0	0	0	2	4
1	0	1.3	0	15	8.9	1	1.6	1	0	90	12.1	7.8	-1	2	45	0	-1	0.8	90	300	1	646	290	3	0	0	0	12	4
0	0.6	1	0	15	8.2	1	1.6	1	-1	90	11.8	7.8	1	0	45	0	0	0.8	90	300	-9	-9	-9	1	0	0	0	3	4
0	0.1	1.3	0	15	8.9	1	1.6	1	-1	90	12.1	7.8	0	2	45	0	0	0.8	90	300	-9	-9	-9	2	-1	0	0	9	4
0	0.1	1.3	0	15	8.9	1	1.6	1	-1	90	12.1	7.8	1	0	45	0	0	0.8	90	300	-9	-9	-9	3	0	0	0	9	4
1	0.3	3.1	0	15	9.5	1	1.6	1	-1	90	10.1	7.8	0	2	40	0	1	0.91	90	300	1	646	290	1	0	3	0	3	4
1	0.1	3.1	0	15	9.5	1	1.6	1	-1	90	10.1	7.8	1	0	39	0	0	0.91	90	300	4	655	20	3	0	3	0	9	4
1	0.2	3.2	0	15	9.5	1	1.6	1	1	90	10.1	7.8	-1	0	39	0	0	0.91	90	300	2	651	100	1	1	3	0	10	4
1	0.6	3.5	0	15	9.5	1	1.6	1	0	90	10.1	7.8	0	0	37	0	-1	0.91	90	300	4	655	20	1	1	3	0	8	4
0	0.5	2.8	0	15	9.1	1	2	1	-1	90	10	7.8	1	0	41	0	1	0.91	90	300	-9	-9	-9	1	0	3	0	3	4
0	0.5	2.9	0	15	9.1	1	2	1	1	90	10	7.8	-1	0	40	0	0	0.91	90	300	-9	-9	-9	1	0	3	0	3	4
0	0.1	3.1	0	15	9.5	1	1.6	1	-1	90	10.1	7.8	0	2	40	0	0	0.91	90	300	-9	-9	-9	2	-1	3	0	9	4
0	0.1	3.1	0	15	9.5	1	1.6	1	-1	90	10.1	7.8	0	2	39	0	0	0.91	90	300	-9	-9	-9	3	0	3	0	9	4
0	0.8	3.3	0	15	9.5	1	1.6	1	1	90	10.1	7.8	0	2	38	0	-1	0.91	90	300	-9	-9	-9	2	-1	3	0	9	4
0	0.6	3.3	0	15	9.5	1	1.6	1	-1	90	10.1	7.8	0	2	38	0	0	0.91	90	300	-9	-9	-9	1	0	3	0	9	4
0	0.5	3.4	0	15	9.5	1	1.6	1	-1	90	10.1	7.8	1	0	38	0	0	0.91	90	300	-9	-9	-9	1	1	3	0	9	4
0	0.9	3.4	0	15	9.5	1	1.6	1	1	90	10.1	7.8	-1	0	37	0	0	0.91	90	300	-9	-9	-9	1	1	3	0	3	4
1	0.3	3.7	0	15	8.6	1	1.6	1	0	80	10.2	7.8	1	2	36	0	0	0.9	90	300	1	646	290	1	0	3	0	2	4
1	0	3.8	0	15	8.6	1	1.6	1	0	80	10.2	7.8	0	2	35	0	0	0.9	90	300	2	651	100	2	-1	3	0	12	4
1	0.1	3.9	0	15	8.6	1	1.6	1	1	80	10.2	7.8	0	2	34	0	-1	0.9	90	300	2	651	100	3	0	3	0	11	4
1	0.1	4	0	15	9.9	1	2	1	0	80	10.4	7.8	-1	0	33	0	-1	0.9	90	300	1	646	290	1	0	3	0	11.5	4
0	0.2	3.6	0	15	8.6	1	1.6	1	1	80	10.2	7.8	-1	2	36	0	0	0.9	90	300	-9	-9	-9	1	0	3	0	3	4
0	1	3.7	0	15	8.6	1	1.6	1	1	80	10.2	7.8	-1	2	35	0	0	0.9	90	300	-9	-9	-9	2	-1	3	0	9	4
0	0.7	3.7	0	15	8.6	1	1.6	1	-1	80	10.2	7.8	1	2	35	0	0	0.9	90	300	-9	-9	-9	1	0	3	0	3	4
0	1	3.9	0	15	8.6	1	1.6	1	0	80	10.2	7.8	1	2	34	0	0	0.9	90	300	-9	-9	-9	2	-1	3	0	3	4
0	0	3.9	0	15	8.6	1	1.6	1	0	80	10.2	7.8	0	2	33	0	0	0.9	90	300	-9	-9	-9	3	0	3	0	12	4
0	0.5	4.1	0	15	9.9	1	2	1	0	80	10.4	7.8	0	0	32	0	0	0.9	90	300	-9	-9	-9	1	1	3	0	9	4

0	0.5	4.2	0	15	9.9	1	2	1	0	80	10.4	7.8	0	0	31	0	0	0.9	90	300	-9	-9	-9	1	1	3	0	9	4
0	0.5	4.3	0	15	9.9	1	2	1	0	80	10.4	7.8	0	0	30	0	0	0.9	90	300	-9	-9	-9	1	1	3	0	9	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0.2	0	15	8.4	1	1.6	1	0	90	11.5	7.6	-1	2	44	0	1	0.85	90	300	3	656	6	1	0	1	1	1	4
1	0.1	0.4	0	15	8.2	1	1.6	1	0	90	11.8	7.8	1	2	44	0	1	0.85	90	300	1	654	34	3	0	1	1	10.5	4
1	0.1	0.4	0	15	8.2	1	1.6	1	0	90	11.8	7.8	0	2	44	0	1	0.85	90	300	1	654	34	3	0	1	1	10.5	4
1	0.1	0.4	0	15	8.2	1	1.6	1	0	90	11.8	7.8	0	2	44	0	1	0.85	90	300	1	654	34	2	-1	1	1	11	4
1	0.1	0.6	0	15	8.2	1	1.6	1	1	90	11.8	7.8	0	0	45	0	0	0.85	90	300	2	650	38	1	1	1	1	2	4
1	0.3	0.6	0	15	8.2	1	1.6	1	-1	90	11.8	7.8	1	0	45	0	0	0.85	90	300	3	656	6	1	1	1	1	2.5	4
1	0.5	0.7	0	15	8.2	1	1.6	1	1	90	11.8	7.8	0	2	45	0	0	0.85	90	300	3	656	6	1	0	1	1	3	4
0	0.4	0	0	15	8.4	0.9	1.6	1	-1	90	11.5	7.6	1	0	43	0	0	0.85	90	300	-9	-9	-9	1	0	1	1	9	4
0	0.6	0.2	0	15	8.4	1	1.6	1	1	90	11.5	7.6	-1	0	43	0	0	0.85	90	300	-9	-9	-9	1	0	1	1	9	4
0	1	0.2	0	15	8.4	1	1.6	1	-1	90	11.5	7.6	0	2	44	0	0	0.85	90	300	-9	-9	-9	2	-1	1	1	9	4
0	0.7	0.4	0	15	8.4	1	1.6	1	-1	90	11.5	7.6	1	0	44	0	0	0.85	90	300	-9	-9	-9	1	1	1	1	3	4
0	0.9	0.5	0	15	8.2	1	1.6	1	1	90	11.8	7.8	0	2	45	0	0	0.85	90	300	-9	-9	-9	1	0	1	1	9	4
0	0.6	0.7	0	15	8.2	1	1.6	1	-1	90	11.8	7.8	0	2	45	0	0	0.85	90	300	-9	-9	-9	1	0	1	1	3	4
0	0.7	0.8	0	15	8.2	1	1.6	1	1	90	11.8	7.8	-1	0	47	0	0	0.85	90	300	-9	-9	-9	1	1	1	1	3	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0.6	0	1	6.8	1	1.3	1	0	100	8.3	6.8	-1	0	22	1	0	0.99	90	300	4	658	20	3	0	0	0	9	4
0	0.3	0.3	0	1	6.6	1	1.3	1	0	100	8.3	6.8	-1	0	20	0	0	0.99	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.4	0.3	0	1	6.6	1	1.3	1	0	100	8.3	6.8	-1	0	20	0	0	0.99	90	300	-9	-9	-9	3	0	0	0	3	4
0	0	0.3	0	1	6.6	1	1.3	1	0	100	8.3	6.8	-1	0	20	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	9	4
0	0	0.4	0	1	6.6	1	1.3	1	0	100	8.3	6.8	0	0	20	1	1	0.99	90	300	-9	-9	-9	3	0	0	0	12	4
0	0.3	0.4	0	1	6.6	1	1.3	1	0	100	8.3	6.8	1	0	21	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.3	0.4	0	1	6.6	1	1.3	1	0	100	8.3	6.8	-1	0	21	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.2	0.5	0	1	6.6	1	1.3	1	0	100	8.3	6.8	1	0	21	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	9	4
0	0	0.6	0	1	6.8	1	1.3	1	0	100	8.3	6.8	0	0	22	1	1	0.99	90	300	-9	-9	-9	3	0	0	0	12	4
0	0	0.7	0	1	6.8	1	1.3	1	1	100	8.3	6.8	-1	2	22	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	12	4
0	0.3	0.7	0	1	6.8	1	1.3	1	0	100	8.3	6.8	-1	0	23	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.5	0.7	0	1	6.8	1	1.3	1	0	100	8.3	6.8	1	0	23	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.5	0.7	0	1	6.8	1	1.3	1	0	100	8.3	6.8	1	0	24	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.2	0.8	0	1	6.8	1	1.3	1	0	100	8.3	6.8	-1	0	26	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	9	4
0	0.2	0.8	0	1	6.8	1	1.3	1	0	100	8.3	6.8	1	0	26	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.5	0.8	0	1	6.8	1	1.3	1	0	100	8.3	6.8	0	2	26	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.5	0.3	0	1	6.6	1	1.3	1	0	100	8.3	6.8	-1	0	20	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	3	4
0	0.5	0.6	0	1	6.6	1	1.3	1	0	100	8.3	6.8	-1	0	21	1	0	0.99	90	300	-9	-9	-9	3	0	0	0	3	4
1	0.1	0	0	1	7	1	1.3	1	0	100	8.2	6.8	0	0	26	1	-1	0.9	90	300	2	658	20	3	0	2	0	12	4
1	0.3	0.2	0	1	7	1	1.3	1	0	100	8.2	6.8	-1	0	27	1	1	0.9	90	300	2	658	20	3	0	2	0	12	4
1	0.3	0.2	0	1	7	1	1.3	1	0	100	8.2	6.8	0	0	27	1	1	0.9	90	300	1	657	24	3	0	2	0	11	4
1	0.1	0.3	0	1	7	1	1.3	1	0	100	8.2	6.8	0	0	27	1	1	0.9	90	300	1	657	24	3	0	2	0	12	4
1	0.1	0.3	0	1	7	1	1.3	1	1	100	8.2	6.8	0	0	28	1	0	0.9	90	300	2	658	20	3	0	2	0	0.5	4
1	0.2	0.4	0	1	7	1	1.3	1	0	100	8.2	6.8	0	0	28	1	-1	0.9	90	300	1	657	24	3	0	2	0	11	4
1	0.4	0.5	0	1	7	1	1.3	1	0	100	8.2	6.8	-1	0	29	1	1	0.9	90	300	4	659	5	3	0	2	0	10	4
1	0	0.5	0	1	7	1	1.3	1	0	100	8.2	6.8	1	2	29	1	1	0.9	90	300	2	658	20	3	0	2	0	12	4
0	0.6	0.2	0	1	7	1	1.3	1	0	100	8.2	6.8	-1	0	27	1	0	0.9	90	300	-9	-9	-9	3	0	2	0	3	4

0	0.4	0.4	0	1	7	1	1.3	1	0	100	8.2	6.8	1	0	28	1	0	0.9	90	300	-9	-9	-9	3	0	2	0	9	4
0	0.3	0.4	0	1	7	1	1.3	1	0	100	8.2	6.8	1	0	28	1	0	0.9	90	300	-9	-9	-9	3	0	2	0	9	4
0	0.4	0.5	0	1	7	1	1.3	1	0	100	8.2	6.8	-1	0	29	1	0	0.9	90	300	-9	-9	-9	3	0	2	0	9	4
0	0.4	0.5	0	1	7	1	1.3	1	0	100	8.2	6.8	1	0	29	1	0	0.9	90	300	-9	-9	-9	3	0	2	0	3	4
0	0.3	0.5	0	1	6.8	1	1.3	1	0	100	8.5	6.7	0	2	29	1	0	0.9	90	300	-9	-9	-9	3	0	2	0	3	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	#CREW
1	0.1	0	0	5	6.2	0.5	1	0	0	96	10.1	7.6	0	0	-2	0	0	0.99	90	300	2	657	24	1	1	0	0	12	4
1	0.2	0.3	0	5	5.2	0.5	0.7	0	-1	96	9.8	7.6	0	0	0	0	0	0.99	90	300	2	657	24	1	1	0	0	11	4
1	0.1	0.5	0	5	5.2	0.5	0.7	0	-1	96	9.8	7.6	0	0	2	1	0	0.99	90	300	2	657	24	1	0	0	0	11	4
1	0.1	0.6	0	5	5.2	0.5	0.7	0	0	96	9.8	7.6	1	0	3	1	-1	0.99	90	300	2	657	24	1	0	0	0	3	4
0	1	0.1	0	5	6.2	0.5	1	0	0	96	10.1	7.6	-1	0	-2	0	0	0.99	90	300	-9	-9	-9	1	1	0	0	9	4
0	0.5	0.2	0	5	6.2	0.5	1	0	0	96	10.1	7.6	0	2	-1	0	0	0.99	90	300	-9	-9	-9	1	1	0	0	3	4
0	0.5	0.3	0	5	5.2	0.5	1	0	0	96	9.8	7.6	0	2	0	0	1	0.99	90	300	-9	-9	-9	1	1	0	0	3	4
0	0.9	0.3	0	5	5.2	0.5	0.7	0	0	96	9.8	7.6	-1	0	0	1	0	0.99	90	300	-9	-9	-9	1	1	0	0	9	4
0	0.9	0.6	0	5	5.2	0.5	0.7	0	0	96	9.8	7.6	0	2	3	1	0	0.99	90	300	-9	-9	-9	1	1	0	0	9	4
0	0.9	0.8	0	5	5.2	0.5	0.7	0	0	96	9.8	7.6	-1	0	4	1	1	0.99	90	300	-9	-9	-9	1	1	0	0	3	4
1	0.1	0.9	0	1	7.2	0	0.7	0	0	97	10	7.6	0	0	6	1	0	0.9	90	300	1	658	20	1	1	2	0	1	4
1	0.3	1.1	0	1	7.2	0	0.7	0	0	97	10	7.6	1	0	7	1	0	0.9	90	300	3	661	100	1	1	2	0	3	4
1	0.3	1.2	0	1	7.2	0	0.7	0	1	97	10	7.6	0	2	7	1	1	0.9	90	300	2	657	24	1	0	2	0	1	4
1	0.2	1.4	0	1	6.4	0	1	0	0	97	10	7.6	0	2	10	1	0	0.9	90	300	2	657	24	1	0	2	0	3	4
1	0.4	1.5	0	1	6.4	0	1	0	0	97	10	7.6	1	0	10	1	0	0.9	90	300	4	660	100	1	0	2	0	9	4
0	0.7	1	0	1	7.2	0	0.7	0	0	97	10	7.6	0	2	7	1	0	0.9	90	300	-9	-9	-9	1	0	2	0	9	4
0	0.8	1.1	0	1	7.2	0	0.7	0	0	97	10	7.6	0	0	7	1	0	0.9	90	300	-9	-9	-9	1	1	2	0	3	4
0	1.3	1.3	0	1	7.2	0	0.7	0	0	97	10	7.6	0	2	8	1	0	0.9	90	300	-9	-9	-9	1	0	2	0	9	4
0	1.3	1.3	0	1	7.2	0	0.7	0	0	97	10	7.6	0	2	8	1	0	0.9	90	300	-9	-9	-9	1	0	2	0	3	4
0	0.6	1.3	0	1	7.2	0	0.7	0	0	97	10	7.6	-1	0	9	1	0	0.9	90	300	-9	-9	-9	1	1	2	0	3	4
0	1.3	1.4	0	1	6.4	0	1	0	0	97	10	7.6	1	0	9	1	0	0.9	90	300	-9	-9	-9	1	0	2	0	3	4
0	0.7	1.5	0	1	6.4	0	1	0	0	97	10	7.6	0	2	10	1	0	0.9	90	300	-9	-9	-9	1	0	2	0	3	4
0	0.7	1.5	0	1	6.4	0	1	0	0	97	10	7.6	-1	0	11	1	0	0.9	90	300	-9	-9	-9	1	0	2	0	9	4
1	0.2	2	0	0.5	4.7	5	0.7	0	0	97	9.5	7.5	-1	2	34	1	-1	0.96	90	300	4	660	100	1	0	0	0	9	4
1	0.7	2.1	0	0.5	4.7	5	0.7	0	0	97	9.5	7.5	-1	2	34	1	-1	0.96	90	300	4	660	100	1	0	0	0	9	4
1	0.5	2.1	0	0.5	4.7	5	0.7	0	0	97	9.5	7.5	1	2	34	1	-1	0.96	90	300	4	660	100	1	0	0	0	9	4
1	0	2.2	0	0.5	4.7	5	0.7	0	0	97	9.5	7.5	0	0	34	1	-1	0.96	90	300	1	657	28	1	1	0	0	12	4
1	0.5	2.5	0	0.5	4.5	5	0.7	0	0	97	9.3	7.5	0	0	34	1	-1	0.96	90	300	4	660	100	1	1	0	0	9	4
1	0.6	2.5	0	0.5	4.5	5	0.7	0	0	97	9.3	7.5	0	0	34	1	0	0.96	90	300	4	660	100	1	1	0	0	10	4
0	0.9	2.1	0	0.5	4.7	5	0.7	0	0	97	9.5	7.5	1	2	34	1	1	0.96	90	300	-9	-9	-9	1	0	0	0	9	4
0	0.6	2.3	0	0.5	4.7	5	0.7	0	0	97	9.5	7.5	0	0	34	1	-1	0.96	90	300	-9	-9	-9	1	0	0	0	3	4
0	0.4	2.3	0	0.5	4.7	5	0.7	0	0	97	9.5	7.5	0	0	34	1	1	0.96	90	300	-9	-9	-9	1	0	0	0	3	4
1	0.6	3.7	0	0.5	4.5	5	0.7	0	0	96	9.3	7.5	0	0	25	1	1	0.9	90	300	2	658	24	1	1	2	0	10	4
1	0.5	3.7	0	0.5	4.5	5	0.7	0	0	96	9.3	7.5	0	0	26	1	-1	0.9	90	300	4	660	100	1	1	2	0	9	4
1	0.3	3.8	0	0.5	4.7	5	0.7	0	1	96	9.2	7.5	0	0	26	1	0	0.9	90	300	2	658	24	1	0	2	0	2	4
1	0.9	3.9	0	0.5	4.7	5	0.7	0	1	96	9.2	7.5	0	0	26	0	0	0.9	90	300	2	658	24	1	1	2	0	1	4
1	0.6	4	0	0.5	4.5	5	0.7	0	-1	96	9.2	7.5	0	0	27	1	-1	0.9	90	300	3	661	100	1	0	2	0	3	4
1	0.4	4.1	0	0.5	4.5	5	0.7	0	0	96	9.2	7.5	1	2	27	1	1	0.9	90	300	4	660	100	1	0	2	0	10	4
1	0.3	4.1	0	0.5	4.7	5	0.7	0	0	96	9.2	7.5	0	2	27	1	-1	0.9	90	300	1	657	28	1	0	2	0	10	4
1	0.7	4.1	0	0.5	4.7	5	0.7	0	0	96	9.2	7.5	-1	2	28	1	-1	0.9	90	300	4	660	100	1	0	2	0	9	4
0	1.3	4	0	0.5	4.7	5	0.7	0	0	96	9.2	7.5	0	0	27	0	1	0.9	90	300	-9	-9	-9	1	0	2	0	3	4
0	0.9	4.1	0	0.5	4.7	5	0.7	0	0	96	9.2	7.5	1	2	27	0	1	0.9	90	300	-9	-9	-9	1	0	2	0	9	4

0	1.1	4.2	0	0.5	4.7	5	0.7	0	0	96	9.2	7.5	-1	2	28	0	-1	0.9	90	300	-9	-9	-9	1	0	2	0	3		4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG		#CREW
1	0.1	0.1	0	0.25	2.1	0	1.3	0	0	97	9.4	9.1	0	0	-20	1	0	0.92	90	300	1	657	28	2	-1	0	0	12		4
0	0.2	0.3	0	0.25	2.9	0	1.3	0	0	97	9.2	9	0	2	-18	1	1	0.92	90	300	-9	-9	-9	2	-1	0	0	3		4
0	0.3	0.3	0	0.25	2.9	0	1.3	0	0	97	9.2	9	-1	0	-18	1	1	0.92	90	300	-9	-9	-9	2	-1	0	0	3		4
0	0.2	0.3	0	0.25	2.9	0	1.3	0	0	97	9.2	9	-1	0	-17	1	1	0.92	90	300	-9	-9	-9	2	-1	0	0	3		4
1	0.2	0.6	0	0.2	2.9	0	1	0	1	97	9.2	9	-1	2	-14	1	0	0.9	90	300	4	660	100	2	-1	2	0	9		4
0	0.2	0.7	0	0.2	2.1	0	0.7	0	1	97	9.1	8.8	0	0	-12	1	0	0.9	90	300	-9	-9	-9	2	-1	2	0	3		4
1	0.2	1.1	0	0.25	2.1	0	0.7	0	0	97	9.1	8.8	-1	2	-10	1	0	0.92	90	300	4	660	100	2	-1	2	0	9		4
0	0.3	1	0	0.25	2.1	0	0.7	0	0	97	9.1	8.8	1	2	-11	1	0	0.92	90	300	-9	-9	-9	2	-1	2	0	9		4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0.2	0.1	0	10	10.1	1	2.3	1	-1	77	18.7	18.6	-1	1	-20	0	0	0.07	90	300	3	665	3	1	0	0	1	3	7	4
1	0.4	0.7	0	10	10.1	0.8	2.3	1	1	77	18.7	18.6	0	1	-23	0	0	0.07	90	300	3	665	3	1	1	0	1	3	1	4
1	0.2	0.9	0	10	10.1	0.8	2.3	1	1	77	18.7	18.6	1	1	-24	0	0	0.07	90	300	3	665	3	1	0	0	1	2	12	4
0	0.4	0.6	0	10	10.1	0.6	2.3	1	1	77	18.7	18.6	1	1	-21	0	0	0.07	90	300	-9	-9	-9	1	1	0	1	3	12	4
0	0.5	0.7	0	10	10.1	0.4	2.3	1	-1	77	18.7	18.6	-1	1	-22	0	0	0.07	90	300	-9	-9	-9	1	1	0	1	3	7	4
0	0.6	1	0	10	9.7	0.8	2.3	1	-1	77	18.5	18.6	0	1	-25	0	0	0.07	90	300	-9	-9	-9	1	1	0	1	3	7	4
0	0.2	1.1	0	10	9.7	0.3	2.3	1	0	74	18.5	18.6	1	1	-27	0	0	0.0	90	300	-9	-9	-9	1	0	0	1	3	1	4
0	0.2	1.3	0	10	9.7	0.3	2.3	1	-1	74	18.5	18.6	-1	1	-28	0	0	0.0	90	300	-9	-9	-9	1	0	0	1	9	1	4
0	0.4	1.4	0	10	9.7	0.3	2.3	1	1	74	18.5	18.6	1	1	-30	0	0	0.0	90	300	-9	-9	-9	1	1	0	1	3	8	4
0	0.6	1.5	0	10	11.3	0.3	2.3	1	-1	74	18.3	18.6	-1	1	-31	0	0	0.0	90	300	-9	-9	-9	1	1	0	1	3	1	4
0	0.4	1.7	0	10	11.3	0.3	2.3	1	1	74	18.3	18.6	0	1	-33	0	0	0.0	90	300	-9	-9	-9	1	1	0	1	9	8	4
1	0	3.2	0	10	15.2	0.4	2.6	1	0	71	17.2	18.5	1	1	-46	0	0	0.07	90	300	2	663	27	1	0	0	1	3	8	4
1	0.1	3.2	0	10	15.2	0.3	2.6	1	0	68	17.2	18.5	-1	1	-47	0	0	0.07	90	300	4	665	5	1	1	0	1	7	10	4
1	0	3.7	0	10	14.2	0.3	2.6	1	1	68	16.3	18.6	1	1	-50	0	0	0.07	90	300	1	662	27	1	1	0	1	1	11	4
0	0.4	2.9	0	10	14	0.3	2.6	1	0	68	16.7	18.5	0	1	-45	0	0	0.07	90	300	-9	-9	-9	1	0	0	1	3	1	4
0	0.3	3	0	10	14	0.3	2.6	1	0	68	16.7	18.5	0	1	-45	0	0	0.07	90	300	-9	-9	-9	1	0	0	1	3	11	4
0	0.2	3.5	0	10	14.2	0.3	2.6	1	0	68	16.3	18.6	0	1	-49	0	0	0.07	90	300	-9	-9	-9	1	0	0	1	3	11	4
1	0	4	0	10	14.6	0.3	2.6	1	1	68	15.9	18.6	1	1	-52	0	1	0.0	90	300	1	662	27	1	1	0	1	12	12	4
1	0.1	4.4	0	10	14.6	0.3	2.6	1	0	68	15.9	18.6	0	1	-54	0	0	0.0	90	300	1	662	27	1	1	0	1	9	12	4
1	0.3	4.7	0	10	15.2	0.3	2.6	1	0	68	15.6	18.6	0	1	-55	0	0	0.0	90	300	2	663	27	1	0	0	1	9	12	4
0	0.2	4.1	0	10	14.6	0.3	2.6	1	0	68	15.9	18.6	0	1	-53	0	0	0.0	90	300	-9	-9	-9	1	0	0	1	3	1	4
0	0.5	4.6	0	10	15.2	0.3	2.6	1	0	68	15.6	18.6	0	1	-55	0	0	0.0	90	300	-9	-9	-9	1	0	0	1	3	5	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0.1	0.4	1	10	10.5	1	2.3	1	-1	77	18.6	18.7	-1	1	-15	0	0	0.07	90	300	3	672	100	1	0	0	0	3	7	4
1	0.3	0.7	1	10	10.5	0.8	2.3	1	1	77	18.6	18.7	1	1	-19	0	0	0.07	90	300	2	671	50	1	1	0	0	2	1	4
1	0.2	0.8	1	10	10.1	0.8	2.3	1	1	77	18.7	18.6	1	1	-21	0	0	0.07	90	300	1	670	70	1	0	0	0	2	10	4
1	0.6	0.9	1	10	10.1	0.8	2.3	1	-1	77	18.7	18.6	0	1	-22	0	0	0.07	90	300	3	672	100	1	1	0	0	3	7	4
0	0.1	0	0	10	10.1	1	2.3	1	1	77	18.7	18.6	0	1	-11	0	0	0.07	90	300	-9	-9	-9	1	0	0	0	9	7	4
0	0.8	0.2	0	10	10.1	1	2.3	1	1	77	18.7	18.6	0	1	-13	0	0	0.07	90	300	-9	-9	-9	1	0	0	0	3	1	4
0	0.9	0.2	0	10	9.7	1	2.3	1	-1	77	18.5	18.6	0	1	-14	0	0	0.07	90	300	-9	-9	-9	1	0	0	0	9	1	4
0	0.4	0.5	1	10	9.7	0.8	2.3	1	1	77	18.5	18.6	1	1	-16	0	0	0.07	90	300	-9	-9	-9	1	1	0	0	3	1	4

0	0.5	0.6	1	10	9.7	0.8	2.3	1	-1	77	18.5	18.6	-1	1	-18	0	0	0.07	90	300	-9	-9	-9	1	1	0	0	3	7	4
1	0.1	1.1	0	10	10.1	0.8	2.3	1	1	77	18.7	18.6	-1	1	-24	0	0	0.0	90	300	2	671	50	1	0	0	0	3	1	4
0	0.8	1.1	0	10	10.1	0.8	2.3	1	-1	77	18.7	18.6	1	1	-24	0	0	0.0	90	300	-9	-9	-9	1	0	0	0	3	7	4
0	0.9	1.2	0	10	10.1	0.8	2.3	1	1	77	18.7	18.6	1	1	-24	0	0	0.0	90	300	-9	-9	-9	1	0	0	0	9	7	4
0	0.2	1.3	0	10	9.7	0.8	2.3	1	-1	77	18.5	18.6	-1	1	-25	0	0	0.0	90	300	-9	-9	-9	1	0	0	0	9	1	4
0	0.5	1.4	1	10	9.7	0.8	2.3	1	1	77	18.5	18.6	1	1	-27	0	0	0.0	90	300	-9	-9	-9	1	1	0	0	9	7	4
0	0.6	1.6	1	10	9.7	0.6	2.3	1	-1	77	18.5	18.6	-1	1	-28	0	0	0.0	90	300	-9	-9	-9	1	1	0	0	9	1	4
0	0.5	1.7	1	10	11.3	0.6	2.3	1	1	77	18.3	18.6	0	1	-29	0	0	0.0	90	300	-9	-9	-9	1	1	0	0	9	7	4
0	0.7	1.8	1	10	11.3	0.6	2.3	1	-1	77	18.3	18.6	0	1	-30	0	0	0.0	90	300	-9	-9	-9	1	1	0	0	9	1	4
0	0.7	1.9	1	10	11.3	0.6	2.3	1	-1	77	18.3	18.6	-1	1	-31	0	0	0.0	90	300	-9	-9	-9	1	0	0	0	9	1	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0	0.6	0	15	8.6	0	2.3	2	0	53	15.2	18.3	0	1	-8	0	1	0.13	90	300	1	662	30	1	1	2	1	11	12	4
1	0.1	0.7	0	15	8.6	0	2.3	2	0	53	15.2	18.3	0	1	-9	0	1	0.13	90	300	1	662	30	1	1	2	1	11	12	4
0	0.2	0.1	0	15	10.3	0	2.3	2	0	53	15.4	18.3	-1	1	-3	0	0	0.13	90	300	-9	-9	-9	1	0	2	1	9	12	4
0	0	0.3	0	15	10.3	0	2.3	2	0	53	15.4	18.3	-1	1	-5	0	0	0.13	90	300	-9	-9	-9	1	0	2	1	3	6	4
1	0	1.2	0	15	7.4	0	1.6	2	1	51	15.8	18.3	0	1	-15	0	0	0.1	90	300	1	662	30	1	0	2	1	12	2	4
1	0.1	1.6	0	15	7.4	0	1.6	2	-1	51	15.8	18.3	0	1	-19	0	-1	0.1	90	300	2	665	10	1	1	2	1	2	9	4
1	0.1	1.6	0	15	7.4	0	1.6	2	-1	51	15.8	18.3	-1	1	-20	0	-1	0.1	90	300	2	665	10	1	1	2	1	2	9	4
0	0.3	1.1	0	15	7.4	0	1.6	2	0	51	15.8	18.3	-1	1	-15	0	-1	0.1	90	300	-9	-9	-9	1	0	2	1	3	9	4
1	0	3.6	0	15	13	0	2.3	2	0	60	14.1	18.2	1	1	-41	0	0	0.13	90	300	2	662	30	1	1	2	1	1	10	4
1	0.1	3.7	0	15	13	0	2	2	0	60	13.7	18.2	0	1	-42	0	0	0.13	90	300	2	662	30	1	0	2	1	2	10	4
1	0.1	3.9	0	15	13	0	2	2	0	60	13.7	18.2	-1	1	-43	0	-1	0.13	90	300	1	663	30	1	1	2	1	11	4	4
0	0.2	4	0	15	13	0	2	2	1	60	13.7	18.2	0	1	-43	0	0	0.13	90	300	-9	-9	-9	1	0	2	1	9	10	4
1	0.1	4.2	0	15	14.2	0	2.3	2	1	55	13.2	18.2	1	1	-47	0	1	0.1	90	300	1	663	30	1	0	2	1	10	11	4
1	0.2	4.3	0	15	14.2	0	2.3	2	0	55	13.2	18.2	-1	1	-47	0	-1	0.1	90	300	1	663	30	1	1	2	1	10	5	4
1	0.2	4.5	0	15	14.2	0	2.3	2	0	55	13.2	18.2	0	1	-49	0	0	0.1	90	300	2	662	30	1	0	2	1	1	11	4
1	0.1	4.7	0	15	14.2	0	2.3	2	0	55	13.2	18.2	1	1	-50	0	0	0.1	90	300	2	662	30	1	1	2	1	1	11	4

CG-6580 **23 SEP 98 SEARCHES 1-2**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0	0.3	0	15	11.9	0	2.3	2	0	47	15.6	18.3	0	1	2	1	-1	0.13	90	300	1	666	20	1	0	0.5	0	1	6	4
1	0.2	0.7	0	15	11.7	0	2.3	2	0	47	15.5	18.3	0	1	0	0	0	0.13	90	300	4	668	10	1	1	0.5	0	9	12	4
1	0.1	0.7	0	15	11.7	0	2.3	2	0	53	15.5	18.3	0	1	-1	0	0	0.13	90	300	4	668	10	1	1	0.5	0	10	11	4
1	0.1	1.2	0	15	10.3	0	2.3	2	0	53	15.4	18.3	0	1	-7	0	0	0.0	90	300	1	666	20	1	0	0	0	10	12	4
1	0.2	1.3	0	15	10.3	0	2.3	2	-1	53	15.4	18.3	-1	1	-8	0	0	0.0	90	300	3	669	200	1	0	0	0	3	6	4
1	0	1.6	0	15	8.6	0	2.3	2	0	53	15.2	18.3	0	1	-11	0	-1	0.0	90	300	2	667	20	1	1	0	0	1	6	4
1	0.1	1.7	0	15	8.6	0	2.3	2	-1	51	15.2	18.3	-1	1	-12	0	0	0.0	90	300	3	669	200	1	1	0	0	2	6	4
0	0.3	1.2	0	15	10.3	0	2.3	2	-1	53	15.4	18.3	0	1	-7	0	0	0.0	90	300	-9	-9	-9	1	0	0	0	3	6	4

CG-6501 **25 SEP 98 SEARCHES 1-4**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0.2	0.2	0	12	11.7	1	2.6	1	1	84	19.2	18.2	0	1	18	0	1	0.2	90	300	1	663	36	3	0	2	1	11	11	4
1	0	0.2	0	12	11.7	1	2.6	1	1	84	19.2	18.2	0	1	18	0	1	0.2	90	300	1	663	36	3	0	2	1	12	11	4
1	0.2	0.4	0	12	12.2	1	3	1	0	79	19.3	18.3	-1	1	17	0	0	0.2	90	300	1	663	36	3	0	2	1	2	5	4
1	0.3	0.4	0	12	12.2	1	3	1	0	79	19.3	18.3	1	1	16	0	0	0.2	90	300	3	665	16	3	0	2	1	2	11	4
1	0.2	0.5	0	12	12.2	1	3	1	0	79	19.3	18.3	-1	1	15	0	0	0.2	90	300	1	663	36	3	0	2	1	9	11	4

1	0.2	0.5	0	12	12.2	1	3	1	0	79	19.3	18.3	-1	1	15	0	0	0.2	90	300	4	664	240	3	0	2	1	9	11	4
1	0	0.6	0	12	12.2	1	3	1	0	79	19.3	18.3	-1	1	15	0	0	0.2	90	300	2	662	36	3	0	2	1	1	5	4
1	0.2	0.7	0	12	12.2	1	3	1	1	79	19.3	18.3	0	1	14	0	1	0.2	90	300	1	663	36	3	0	2	1	11	11	4
1	0.1	0.8	0	12	12.6	1	3	1	0	79	19.3	18.3	1	1	13	0	0	0.2	90	300	4	664	240	3	0	2	1	8	5	4
0	0	0	0	12	11.7	1	2.6	1	0	84	19.2	18.2	-1	1	19	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	5	4
0	0.5	0	0	12	11.7	1	2.6	1	0	84	19.2	18.2	1	1	19	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	5	4
0	0.4	0.1	0	12	11.7	1	2.6	1	0	84	19.2	18.2	1	1	19	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	5	4
0	0.3	0.1	0	12	11.7	1	2.6	1	0	84	19.2	18.2	1	1	18	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	11	4
0	0.6	0.2	0	12	12.2	1	3	1	0	84	19.3	18.3	-1	1	17	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	11	4
0	0.3	0.3	0	12	12.2	1	3	1	0	79	19.3	18.3	1	1	17	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	4	4
0	0.3	0.3	0	12	12.2	1	3	1	0	79	19.3	18.3	1	1	16	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	5	4
0	0.5	0.3	0	12	12.2	1	3	1	0	79	19.3	18.3	-1	1	16	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	5	4
0	0.5	0.5	0	12	12.2	1	3	1	0	79	19.3	18.3	1	1	15	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	11	4
0	0.3	0.6	0	12	12.2	1	3	1	0	79	19.3	18.3	1	1	14	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	5	4
0	0.2	0.6	0	12	12.2	1	3	1	0	79	19.3	18.3	1	1	14	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	5	4
0	0.6	0.6	0	12	12.2	1	3	1	0	79	19.3	18.3	-1	1	14	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	12	4
0	0.6	0.7	0	12	12.2	1	3	1	0	79	19.3	18.3	-1	1	13	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	11	4
1	0.1	1.1	0	12	12.6	1	3	1	-1	84	19.1	18.3	0	1	10	0	-1	0.28	90	300	1	663	36	3	0	2	1	11	5	4
1	0	1.1	0	12	12.6	1	3	1	0	84	19.1	18.3	-1	1	10	0	0	0.28	90	300	2	662	36	3	0	2	1	1	5	4
1	0.1	1.2	0	12	12.6	1	3	1	0	84	19.1	18.3	0	1	8	0	0	0.28	90	300	1	663	36	3	0	2	1	10	11	4
1	0.1	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	8	0	0	0.28	90	300	1	663	36	3	0	2	1	0.5	5	4
1	0.2	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	0	1	7	0	0	0.28	90	300	3	665	6	3	0	2	1	2	12	4
1	0.1	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	6	0	0	0.28	90	300	2	662	36	3	0	2	1	1	11	4
1	0.1	1.6	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	5	0	0	0.28	90	300	2	662	36	3	0	2	1	1	5	4
1	0.2	1.6	0	12	12.1	1	2.6	1	0	84	19.1	18.4	0	1	4	0	0	0.28	90	300	3	665	6	3	0	2	1	3	5	4
0	0.5	1	0	12	11.7	1	2.6	1	0	84	19.2	18.2	1	1	10	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	11	4
0	0.5	1.1	0	12	11.7	1	3	1	0	84	19.2	18.2	1	1	9	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	5	4
0	0.5	1.2	0	12	11.7	1	3	1	0	84	19.2	18.2	-1	1	8	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	11	4
0	0.4	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	8	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	11	4
0	0.4	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	8	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	11	4
0	0.5	1.3	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	8	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	11	4
0	0.6	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	7	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	5	4
0	0.4	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	6	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	11	4
0	0.5	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	5	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	11	4
0	0.4	1.6	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	5	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	5	4
0	0.6	1.7	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	3	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	11	4
0	0.3	1.8	0	12	12.1	1	2.6	1	0	84	19.1	18.4	1	1	2	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	11	4
0	0.6	1.5	0	12	12.1	1	2.6	1	0	84	19.1	18.4	-1	1	6	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	11	4
1	0	3	0	12	11.1	1	3	1	-1	84	19.3	18.4	0	1	-10	0	-1	0.2	90	300	1	662	30	3	0	2	1	11	6	4
1	0.1	3.1	0	12	11.1	1	3	1	1	84	19.3	18.4	0	1	-11	0	0	0.2	90	300	1	662	30	3	0	2	1	11	12	4
1	0	3.2	0	12	11.1	1	3	1	1	84	19.3	18.4	0	1	-12	0	1	0.2	90	300	2	663	30	3	0	2	1	12	12	4
1	0.3	3.3	0	12	8.7	1	3	1	0	84	19.2	18.4	1	1	-13	0	0	0.2	90	300	4	664	240	3	0	2	1	9	6	4
1	0.2	3.3	0	12	8.7	1	3	1	0	84	19.2	18.4	0	1	-15	0	0	0.2	90	300	4	664	240	3	0	2	1	10	12	4
1	0.1	3.5	0	12	8.7	1	3	1	0	84	19.2	18.4	0	1	-15	0	0	0.2	90	300	1	662	30	3	0	2	1	10	12	4
1	0	3.5	0	12	8.7	1	3	1	0	84	19.2	18.4	0	1	-16	0	-1	0.2	90	300	2	663	30	3	0	2	1	12	6	4
1	0.2	3.6	0	12	8.7	1	3	1	0	84	19.2	18.4	1	1	-17	0	0	0.2	90	300	4	664	240	3	0	2	1	9	6	4
0	0.5	3	0	12	11.1	1	3	1	0	84	19.3	18.4	1	1	-11	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	6	4
0	0.4	3.1	0	12	11.1	1	3	1	0	84	19.3	18.4	1	1	-11	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	6	4
0	0.2	3.1	0	12	11.1	1	3	1	0	84	19.3	18.4	-1	1	-12	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	12	4
0	0.5	3.2	0	12	8.7	1	3	1	0	84	19.2	18.4	-1	1	-13	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	12	4
0	0.3	3.3	0	12	8.7	1	3	1	0	84	19.2	18.4	1	1	-13	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	6	4
0	0.5	3.3	0	12	8.7	1	3	1	0	84	19.2	18.4	-1	1	-13	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	6	4

0	0.3	3.4	0	12	8.7	1	3	1	0	84	19.2	18.4	0	1	-14	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	12	4
0	0.5	3.4	0	12	8.7	1	3	1	0	84	19.2	18.4	-1	1	-14	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	12	4
0	0.3	3.6	0	12	8.7	1	3	1	0	84	19.2	18.4	-1	1	-16	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	6	4
0	0.6	3.6	0	12	8.7	1	3	1	0	84	19.2	18.4	0	1	-17	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	12	4
0	0.2	3.7	0	12	8.7	1	3	1	0	84	19.2	18.4	-1	1	-18	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	12	4
0	0.5	3.7	0	12	8.7	1	3	1	0	84	19.2	18.4	-1	1	-18	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	12	4
0	0.2	3.8	0	12	11.5	1	3	1	0	84	19.2	18.4	1	1	-19	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	6	4
0	0.2	3.3	0	12	8.7	1	3	1	0	84	19.2	18.4	-1	1	-14	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	6	4
1	0.4	4	0	12	11.5	1	3	1	1	79	19.2	18.4	1	1	-21	0	0	0.2	90	300	1	662	30	3	0	2	1	9	1	4
1	0.1	4.1	0	12	11.5	1	3	1	-1	79	19.2	18.4	0	1	-22	0	0	0.2	90	300	1	662	30	3	0	2	1	10	7	4
1	0	4.1	0	12	11.5	1	3	1	0	79	19.2	18.4	-1	1	-22	0	-1	0.2	90	300	2	663	30	3	0	2	1	1	7	4
1	0	4.5	0	12	10.7	1	2.6	1	0	79	19.1	18.4	0	1	-26	0	0	0.28	90	300	1	662	30	3	0	2	1	12	7	4
1	0	4.6	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-28	0	1	0.28	90	300	2	663	30	3	0	2	1	2	1	4
1	0.3	4.7	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-29	0	0	0.28	90	300	4	665	10	3	0	2	1	9	7	4
0	0.5	4	0	12	11.5	1	3	1	0	79	19.2	18.4	1	1	-21	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	1	4
0	0.4	4.1	0	12	11.5	1	3	1	0	79	19.2	18.4	1	1	-22	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	7	4
0	0.4	4.4	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-25	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	1	4
0	0.3	4.4	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-25	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	1	4
0	0.2	4.4	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-26	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	9	1	4
0	0.5	4.4	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-26	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	1	4
0	0.5	4.5	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-26	0	0	0.2	90	300	-9	-9	-9	3	0	2	1	3	1	4
0	0.6	4.5	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-27	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	7	4
0	0.4	4.6	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-27	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	1	4
0	0.1	4.6	0	12	10.7	1	2.6	1	0	79	19.1	18.4	1	1	-28	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	1	4
0	0.6	4.7	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-28	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	1	4
0	0.5	4.7	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-28	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	9	1	4
0	0.4	4.7	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-29	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	7	4
0	0.1	4.8	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-29	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	7	4
0	0.2	4.8	0	12	10.7	1	2.6	1	0	79	19.1	18.4	-1	1	-30	0	0	0.28	90	300	-9	-9	-9	3	0	2	1	3	7	4

CG-6580 **25 SEP 98 SEARCHES 1-2**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0	0.2	0	12	11.7	1	2.6	1	0	84	19.2	18.2	0	1	19	0	0	0.2	90	300	1	666	24	3	0	0	0	10	11	4
1	0.1	0.5	0	12	12.2	1	3	1	-1	84	19.3	18.3	0	1	15	0	-1	0.2	90	300	1	666	24	3	0	0	0	11	5	4
0	0	0	0	12	11.7	1	2.6	1	0	84	19.2	18.2	1	1	20	0	0	0.2	90	300	-9	-9	-9	3	0	0	0	9	5	4
0	0.2	0.1	0	12	11.7	1	2.6	1	0	84	19.2	18.2	1	1	19	0	0	0.2	90	300	-9	-9	-9	3	0	0	0	3	11	4
0	0.2	0.2	0	12	11.7	1	2.6	1	0	84	19.2	18.2	-1	1	18	0	0	0.2	90	300	-9	-9	-9	3	0	0	0	9	11	4
0	0.3	0.3	0	12	11.7	1	2.6	1	0	84	19.2	18.2	1	1	18	0	0	0.2	90	300	-9	-9	-9	3	0	0	0	9	5	4
0	0	0.3	0	12	11.7	1	2.6	1	0	84	19.2	18.2	0	1	17	0	0	0.2	90	300	-9	-9	-9	3	0	0	0	9	5	4
0	0.2	0.5	0	12	12.2	1	3	1	0	84	19.3	18.3	-1	1	17	0	0	0.2	90	300	-9	-9	-9	3	0	0	0	9	11	4
0	0.3	0.6	0	12	12.2	1	3	1	0	84	19.3	18.3	1	1	15	0	0	0.2	90	300	-9	-9	-9	3	0	0	0	9	5	4
0	0.1	0.8	0	12	12.2	1	3	1	0	84	19.3	18.3	1	1	13	0	0	0.2	90	300	-9	-9	-9	3	0	0	0	9	5	4
0	0.2	0.5	0	12	12.2	1	3	1	0	84	19.3	18.3	-1	1	16	0	0	0.2	90	300	-9	-9	-9	3	0	0	0	9	11	4
1	0.2	1.1	0	12	12.6	1	3	1	-1	79	193	18.3	1	1	10	0	-1	0.28	90	300	1	666	24	3	0	0	0	10	5	4
0	0.2	1.3	0	12	12.6	1	3	1	0	79	193	18.3	-1	1	8	0	0	0.28	90	300	-9	-9	-9	3	0	0	0	3	5	4
0	0	1.1	1	12	12.6	1	3	1	0	79	193	18.3	1	1	10	0	0	0.28	90	300	-9	-9	-9	3	0	0	0	9	5	4

CG-6501 **28 SEP 98 Searches 1-4**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW

1	0.1	0	0	15	14.8	0	2.6	1	-1	66	19.2	18.5	0	1	28	1	0	0.4	90	300	2	663	50	1	1	1	1	1	4	4
1	1.7	0.1	0	15	14.6	0	2.6	1	0	66	18.8	18.5	0	1	28	1	0	0.4	90	300	4	675	1	1	0	1	1	9	4	4
1	0.6	0.1	0	15	14.6	0	2.6	1	0	66	18.8	18.5	0	1	28	1	-1	0.4	90	300	3	665	20	1	0	1	1	3	10	4
1	0.9	0.2	0	15	14.6	0	2.6	1	0	66	18.8	18.5	-1	1	28	1	1	0.4	90	300	4	675	1	1	0	1	1	9	10	4
1	0.3	0.2	0	15	14.6	0	2.6	1	0	66	18.8	18.5	0	1	28	1	0	0.4	90	300	1	674	40	1	1	1	1	1	6	4
1	1.3	0.3	0	15	14.6	0	2.6	1	0	66	18.8	18.5	1	1	27	1	0	0.4	90	300	4	675	1	1	1	1	1	9	4	4
1	0.3	0.4	0	15	14.6	0	2.6	1	1	66	18.8	18.5	1	1	27	1	0	0.5	90	300	2	663	50	1	1	1	1	2	10	4
1	1.2	0.6	0	15	16.1	0	2.6	1	0	66	18.4	18.5	0	1	26	1	-1	0.5	90	300	4	675	1	1	1	1	1	10	4	4
1	0.1	0.6	0	15	16.1	0	2.6	1	1	66	18.4	18.5	1	1	26	1	0	0.5	90	300	2	663	50	1	1	1	1	2	10	4
0	1.4	0.2	0	15	14.6	0	2.6	1	0	66	18.8	18.5	1	1	28	1	-1	0.4	90	300	-9	-9	-9	1	1	1	1	3	10	4
0	1.8	0.3	0	15	14.6	0	2.6	1	0	66	18.8	18.5	-1	1	27	1	0	0.4	90	300	-9	-9	-9	1	1	1	1	3	4	4
0	0.3	0.3	0	15	14.6	0	2.6	1	0	66	18.8	18.5	0	1	27	1	0	0.5	90	300	-9	-9	-9	1	0	1	1	3	4	4
0	0.7	0.5	0	15	14.6	0	2.6	1	0	66	18.8	18.5	-1	1	26	1	-1	0.5	90	300	-9	-9	-9	1	1	1	1	9	10	4
0	1.5	0.5	0	15	14.6	0	2.6	1	0	66	18.8	18.5	-1	1	26	1	0	0.5	90	300	-9	-9	-9	1	1	1	1	3	4	4
0	0.7	0.5	0	15	14.6	0	2.6	1	0	66	18.8	18.5	-1	1	26	1	0	0.5	90	300	-9	-9	-9	1	0	1	1	3	4	4
0	1.7	0.7	0	15	16.1	0	2.6	1	0	66	18.4	18.5	-1	1	26	1	-1	0.5	90	300	-9	-9	-9	1	0	1	1	9	10	4
0	0.8	0.8	0	15	16.1	0	2.6	1	0	66	18.4	18.5	0	1	25	1	0	0.5	90	300	-9	-9	-9	1	0	1	1	3	4	4
1	0.1	1	0	15	16.1	0	2.6	1	1	61	18.4	18.5	0	1	24	1	0	0.46	90	300	2	663	50	1	1	3	1	1	10	4
1	1.4	1.1	0	15	16.1	0	2.6	1	0	61	18.4	18.5	1	1	24	1	-1	0.46	90	300	4	675	1	1	1	3	1	10	5	4
1	0.6	1.1	0	15	15.4	0	2.6	1	0	61	18.1	18.3	0	1	24	1	-1	0.46	90	300	4	675	1	1	0	3	1	10	5	4
1	0.4	1.3	0	15	15.4	0	2.6	1	1	61	18.1	18.3	1	1	23	1	0	0.46	90	300	2	663	50	1	1	3	1	2	10	4
1	0.3	1.4	0	15	15.4	0	2.6	1	0	61	18.1	18.3	0	1	22	1	0	0.46	90	300	1	674	40	1	0	3	1	12	5	4
1	1	1.4	0	15	15.4	0	2.6	1	0	61	18.1	18.3	1	1	22	1	0	0.46	90	300	3	665	20	1	0	3	1	3	10	4
1	0.1	1.7	0	15	15.4	0	2.6	1	0	61	18.1	18.3	0	1	20	1	0	0.46	90	300	2	663	50	1	0	3	1	12	5	4
0	1.6	0.9	0	15	16.1	0	2.6	1	0	61	18.4	18.5	0	1	25	1	0	0.46	90	300	-9	-9	-9	1	0	3	1	3	10	4
0	0.8	1.1	0	15	15.4	0	2.6	1	-1	61	18.1	18.3	-1	1	24	1	0	0.46	90	300	-9	-9	-9	1	1	3	1	3	5	4
0	1.3	1.2	0	15	15.4	0	2.6	1	0	61	18.1	18.3	1	1	23	1	0	0.46	90	300	-9	-9	-9	1	0	3	1	3	10	4
0	1.9	1.3	0	15	15.4	0	2.6	1	0	61	18.1	18.3	-1	1	23	1	0	0.46	90	300	-9	-9	-9	1	1	3	1	9	10	4
0	0.6	1.3	0	15	15.4	0	2.6	1	0	61	18.1	18.3	1	1	22	1	0	0.46	90	300	-9	-9	-9	1	1	3	1	3	5	4
0	1.4	1.4	0	15	15.4	0	2.6	1	0	61	18.1	18.3	-1	1	22	1	0	0.46	90	300	-9	-9	-9	1	0	3	1	3	5	4
0	0.7	1.5	0	15	15.4	0	2.6	1	0	61	18.1	18.3	-1	1	22	1	0	0.46	90	300	-9	-9	-9	1	0	3	1	9	10	4
0	1.7	1.6	0	15	15.4	0	2.6	1	0	61	18.1	18.3	-1	1	21	1	0	0.46	90	300	-9	-9	-9	1	0	3	1	3	5	4
0	1	1.7	0	15	15.4	0	2.6	1	0	61	18.1	18.3	-1	1	20	1	0	0.46	90	300	-9	-9	-9	1	0	3	1	9	10	4
0	1.6	1.5	0	15	15.4	0	2.6	1	0	61	18.1	18.3	-1	1	21	1	0	0.46	90	300	-9	-9	-9	1	0	3	1	9	10	4
1	0.9	3.2	0	15	16.9	0	2.6	1	0	60	16.5	18.3	-1	1	8	1	-1	0.5	90	300	3	675	1	1	1	3	1	2	9	4
1	0.1	3.3	0	15	16.9	0	2.6	1	-1	64	16.5	18.3	-1	1	7	1	0	0.5	90	300	2	674	40	1	1	3	1	11	3	4
1	0.4	3.5	0	15	16.9	0	2.6	1	0	64	16.5	18.3	0	1	5	1	-1	0.5	90	300	4	665	20	1	1	3	1	11	6	4
1	0	3.7	0	15	16.9	0	2.6	1	1	64	16	18.2	1	1	1	1	0	0.5	90	300	4	665	20	1	0	3	1	11	9	4
1	0.1	4	0	15	16.9	0	2.6	1	1	64	16	18.2	1	1	0	1	0	0.5	90	300	1	663	50	1	0	3	1	11	9	4
1	0.2	4	0	15	16.9	0	2.6	1	0	64	16	18.2	0	1	-1	1	-1	0.5	90	300	3	675	1	1	0	3	1	2	9	4
0	1.9	3.4	0	15	16.9	0	2.6	1	0	64	16.5	18.3	0	1	6	1	-1	0.5	90	300	-9	-9	-9	1	1	3	1	3	9	4
0	1.1	3.4	0	15	16.9	0	2.6	1	0	64	16.5	18.3	0	1	6	1	1	0.5	90	300	-9	-9	-9	1	1	3	1	9	9	4
0	2	3.5	0	15	16.9	0	2.6	1	0	64	16.5	18.3	0	1	5	1	1	0.5	90	300	-9	-9	-9	1	1	3	1	3	3	4
0	1.9	3.5	0	15	16.9	0	2.6	1	0	64	16.5	18.3	0	1	5	1	-1	0.5	90	300	-9	-9	-9	1	0	3	1	3	9	4
0	1.2	3.6	0	15	16.9	0	2.6	1	0	64	16	18.2	0	1	4	1	-1	0.5	90	300	-9	-9	-9	1	0	3	1	9	3	4
0	0.8	3.7	0	15	16.9	0	2.6	1	0	64	16	18.2	0	1	3	1	1	0.5	90	300	-9	-9	-9	1	0	3	1	3	3	4
0	1.8	3.8	0	15	16.9	0	2.6	1	0	64	16	18.2	0	1	2	1	-1	0.5	90	300	-9	-9	-9	1	0	3	1	3	9	4
0	1.2	3.9	0	15	16.9	0	2.6	1	0	64	16	18.2	0	1	1	1	-1	0.5	90	300	-9	-9	-9	1	0	3	1	9	3	4
0	1.1	3.9	0	15	16.9	0	2.6	1	0	64	16	18.2	0	1	1	1	-1	0.5	90	300	-9	-9	-9	1	0	3	1	9	3	4
0	0.8	4	0	15	16.9	0	2.6	1	0	64	16	18.2	0	1	0	1	1	0.5	90	300	-9	-9	-9	1	0	3	1	3	3	4
0	0.9	4.1	0	15	16.9	0	2.6	1	0	64	16	18.2	0	1	0	1	1	0.5	90	300	-9	-9	-9	1	0	3	1	3	3	4
1	0.2	4.3	0	15	19.2	0	3	1	1	64	16.2	18.2	1	1	-2	0	0	0.56	90	300	4	665	20	1	0	1	1	11	9	4

1	0.2	4.3	0	15	19.2	0	3	1	0	64	16.2	18.2	0	1	-3	0	-1	0.56	90	300	3	675	1	1	0	1	1	2	9	4
1	0	4.6	0	15	19.2	0	3	1	1	64	16.2	18.2	1	1	-6	0	0	0.56	90	300	1	663	50	1	0	1	1	11	9	4
1	0.2	4.9	0	15	18.5	0	3.3	1	-1	64	15.9	18.2	-1	1	-9	0	0	0.56	90	300	1	663	50	1	1	1	1	11	3	4
0	0.3	4.2	0	15	19.2	0	3	1	0	64	16.2	18.2	0	1	-2	0	1	0.56	90	300	-9	-9	-9	1	0	1	1	3	3	4
0	1	4.2	0	15	19.2	0	3	1	0	64	16.2	18.2	0	1	-2	0	1	0.56	90	300	-9	-9	-9	1	0	1	1	3	3	4
0	1.1	4.5	0	15	19.2	0	3	1	0	64	16.2	18.2	0	1	-3	0	-1	0.56	90	300	-9	-9	-9	1	0	1	1	9	3	4
0	0.8	4.6	0	15	19.2	0	3	1	0	64	16.2	18.2	0	1	-5	0	1	0.56	90	300	-9	-9	-9	1	0	1	1	3	3	4
0	1.1	4.6	0	15	18.5	0	3.3	1	0	64	15.9	18.2	0	1	-6	0	-1	0.56	90	300	-9	-9	-9	1	0	1	1	9	3	4
0	1.1	4.9	0	15	18.5	0	3.3	1	0	61	15.9	18.2	0	1	-8	0	1	0.56	90	300	-9	-9	-9	1	1	1	1	9	9	4
0	0.9	5	0	15	18.5	0	3.3	1	0	61	15.9	18.2	0	1	-10	0	-1	0.56	90	300	-9	-9	-9	1	1	1	1	3	9	4

CG-6580 **28 SEP 98 Searches 1-2**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0.2	0	0	15	14.8	0	2.6	1	0	66	19.2	18.5	0	1	29	1	0	0.4	90	300	1	677	30	1	1	0	0	0.5	4	4
1	0.3	0.4	0	15	14.6	0	2.6	1	1	64	18.8	18.5	1	1	27	1	0	0.4	90	300	2	676	30	1	0	0	0	2	10	4
1	0.1	0.7	0	15	14.6	0	2.6	1	1	64	18.8	18.5	1	1	27	1	0	0.5	90	300	3	679	40	1	0	0	0	2	10	4
0	0.5	0.2	0	15	14.8	0	2.6	1	0	64	19.2	18.5	0	1	29	1	-1	0.4	90	300	-9	-9	-9	1	0	0	0	3	10	4
0	0.9	0.2	0	15	14.8	0	2.6	1	0	64	19.2	18.5	-1	1	28	1	1	0.4	90	300	-9	-9	-9	1	0	0	0	9	10	4
0	1.3	0.2	0	15	14.8	0	2.6	1	0	64	19.2	18.5	1	1	28	1	-1	0.4	90	300	-9	-9	-9	1	1	0	0	3	10	4
0	1.4	0.3	0	15	14.6	0	2.6	1	-1	64	18.8	18.5	1	1	28	1	0	0.4	90	300	-9	-9	-9	1	0	0	0	9	4	4
0	0.3	0.4	0	15	14.6	0	2.6	1	-1	64	18.8	18.5	0	1	28	1	0	0.4	90	300	-9	-9	-9	1	0	0	0	3	4	4
0	1.4	0.4	0	15	14.6	0	2.6	1	0	64	18.8	18.5	0	1	28	1	1	0.4	90	300	-9	-9	-9	1	0	0	0	9	10	4
0	0.7	0.5	0	15	14.6	0	2.6	1	0	64	18.8	18.5	-1	1	27	1	1	0.4	90	300	-9	-9	-9	1	1	0	0	9	10	4
0	0.7	0.6	0	15	14.6	0	2.6	1	-1	64	18.8	18.5	-1	1	27	1	0	0.5	90	300	-9	-9	-9	1	0	0	0	3	4	4
0	1.2	0.6	0	15	14.6	0	2.6	1	-1	64	18.8	18.5	0	1	27	1	0	0.5	90	300	-9	-9	-9	1	0	0	0	9	4	4
0	0.8	0.9	0	15	16.1	0	2.6	1	-1	64	18.4	18.5	0	1	26	1	0	0.5	90	300	-9	-9	-9	1	0	0	0	3	4	4
0	1.8	0.3	0	15	14.6	0	2.6	1	0	64	18.8	18.5	-1	1	28	1	0	0.5	90	300	-9	-9	-9	1	1	0	0	3	4	4
0	1.6	0.5	0	15	14.6	0	2.6	1	0	64	18.8	18.5	-1	1	27	1	0	0.5	90	300	-9	-9	-9	1	1	0	0	3	4	4
0	1.7	0.7	0	15	14.6	0	2.6	1	0	64	18.8	18.5	-1	1	26	1	-1	0.5	90	300	-9	-9	-9	1	0	0	0	9	10	4
1	0.1	1	0	15	16.1	0	2.6	1	0	64	18.4	18.5	0	1	25	1	1	0.56	90	300	1	677	30	1	1	0	0	11	10	4
1	0.6	1.2	0	15	16.1	0	2.6	1	0	61	18.4	18.5	0	1	24	1	-1	0.56	90	300	1	677	30	1	0	0	0	10	5	4
1	0.3	1.3	0	15	15.4	0	2.6	1	1	61	18.1	18.3	1	1	24	1	0	0.56	90	300	2	676	30	1	1	0	0	1	10	4
1	0.4	1.4	0	15	15.4	0	2.6	1	0	61	18.1	18.3	0	1	24	1	-1	0.56	90	300	1	677	30	1	0	0	0	11	5	4
1	1	1.5	0	15	15.4	0	2.6	1	0	61	18.1	18.3	0	1	23	1	-1	0.56	90	300	3	679	40	1	0	0	0	3	10	4
1	0.1	1.6	0	15	15.4	0	2.6	1	0	61	18.1	18.3	0	1	21	1	0	0.56	90	300	2	676	30	1	0	0	0	12	5	4
1	1.5	1.1	0	15	16.1	0	2.6	1	1	61	18.4	18.5	1	1	25	1	0	0.56	90	300	4	678	200	1	1	0	0	9	5	4
0	1.5	1	0	15	16.1	0	2.6	1	0	64	18.4	18.5	0	1	25	1	0	0.56	90	300	-9	-9	-9	1	0	0	0	3	10	4
0	0.8	1.1	0	15	16.1	0	2.6	1	-1	61	18.4	18.5	-1	1	24	1	0	0.56	90	300	-9	-9	-9	1	1	0	0	3	5	4
0	0.5	1.2	0	15	16.1	0	2.6	1	0	64	18.4	18.5	-1	1	24	1	1	0.56	90	300	-9	-9	-9	1	0	0	0	9	10	4
0	1.2	1.3	0	15	15.4	0	2.6	1	0	64	18.1	18.3	1	1	24	1	-1	0.56	90	300	-9	-9	-9	1	0	0	0	3	10	4
0	1.9	1.3	0	15	15.4	0	2.6	1	0	64	18.1	18.3	-1	1	24	1	1	0.56	90	300	-9	-9	-9	1	1	0	0	9	10	4
0	0.6	1.4	0	15	15.4	0	2.6	1	0	64	18.1	18.3	-1	1	24	1	0	0.56	90	300	-9	-9	-9	1	1	0	0	3	5	4
0	1.4	1.5	0	15	15.4	0	2.6	1	0	64	18.1	18.3	0	1	23	1	0	0.56	90	300	-9	-9	-9	1	0	0	0	3	5	4
0	0.8	1.6	0	15	15.4	0	2.6	1	0	64	18.1	18.3	-1	1	23	1	1	0.56	90	300	-9	-9	-9	1	0	0	0	9	10	4
0	1.6	1.6	0	15	15.4	0	2.6	1	0	64	18.1	18.3	-1	1	22	1	1	0.56	90	300	-9	-9	-9	1	1	0	0	9	10	4
0	1.7	1.7	0	15	15.4	0	2.6	1	-1	64	18.1	18.3	-1	1	21	1	0	0.56	90	300	-9	-9	-9	1	0	0	0	3	5	4
0	1	1.8	0	15	15.4	0	2.6	1	0	64	18.1	18.3	0	1	20	1	1	0.56	90	300	-9	-9	-9	1	1	0	0	9	10	4

CG-6501 **30 SEP 98 SEARCHES 1-4**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0.2	0.1	0	10	9.7	0.8	2	0	0	80	19.2	18.6	1	1	30	1	-1	0.6	90	300	3	665	25	2	-1	1	1	3	9	4
1	0	0.3	2	10	9.7	0.8	2	0	-1	80	19.2	18.6	0	1	30	0	0	0.6	90	300	4	675	10	2	-1	1	1	11	3	4
1	0.5	0.3	2	10	9.7	0.8	2	0	1	80	19.2	18.6	-1	1	30	0	1	0.6	90	300	3	665	25	2	-1	1	1	3	3	4
1	0.2	0.5	1	10	9.1	0.8	2	0	1	80	19.3	18.7	-1	1	31	1	1	0.6	90	300	3	665	25	2	-1	1	1	3	3	4
1	0	0.5	1	10	9.1	0.8	2	0	-1	80	19.3	18.7	0	1	31	1	0	0.6	90	300	4	675	10	2	-1	1	1	11	3	4
1	0.4	0.6	1	10	9.1	0.8	2	0	0	80	19.3	18.7	0	1	31	1	1	0.6	90	300	4	675	10	2	-1	1	1	9	9	4
1	0.3	0.7	1	10	9.1	0.8	2	0	0	80	19.3	18.7	-1	1	31	0	1	0.7	90	300	3	665	25	2	-1	1	1	2	3	4
0	0.6	0.2	0	10	9.7	0.8	2	0	0	80	19.2	18.6	1	1	30	1	-1	0.6	90	300	-9	-9	-9	2	-1	1	1	3	9	4
0	0.6	0.4	1	10	9.1	0.8	2	0	0	80	19.3	18.7	1	1	31	1	-1	0.6	90	300	-9	-9	-9	2	-1	1	1	3	9	4
0	0.7	0.6	1	10	9.1	0.8	2	0	-1	80	19.3	18.7	1	1	31	1	-1	0.6	90	300	-9	-9	-9	2	-1	1	1	9	3	4
0	0.5	0.7	1	10	9.1	0.8	2	0	0	80	19.3	18.7	1	1	31	1	-1	0.7	90	300	-9	-9	-9	2	-1	1	1	3	9	4
1	0.1	1.4	1	10	7.4	0.8	2	1	0	80	19.3	18.6	0	1	32	0	0	0.76	90	300	3	665	25	2	-1	3	1	11	10	4
1	0.4	1.4	1	10	9.1	0.8	2	1	0	80	19.4	18.5	-1	1	32	0	0	0.76	90	300	4	675	10	2	-1	3	1	9	10	4
1	0.3	1.5	1	10	9.1	0.8	2	1	0	80	19.4	18.5	-1	1	32	0	0	0.76	90	300	4	675	10	2	-1	3	1	9	10	4
1	0.3	1.6	1	10	9.1	0.8	2	1	0	80	19.4	18.5	-1	1	31	0	0	0.76	90	300	3	665	25	2	-1	3	1	2	3	4
0	0.7	1	1	10	7.4	0.8	2	1	-1	80	19.3	18.6	1	1	32	0	-1	0.76	90	300	-9	-9	-9	2	-1	3	1	9	3	4
0	0.6	1.1	1	10	7.4	0.8	2	1	-1	80	19.3	18.6	1	1	32	0	-1	0.76	90	300	-9	-9	-9	2	-1	3	1	9	3	4
0	0.6	1.1	1	10	7.4	0.8	2	1	0	80	19.3	18.6	-1	1	32	0	0	0.76	90	300	-9	-9	-9	2	-1	3	1	9	10	4
0	0.5	1.2	1	10	7.4	0.8	2	1	0	80	19.3	18.6	-1	1	32	0	0	0.76	90	300	-9	-9	-9	2	-1	3	1	9	10	4
0	0.6	1.3	1	10	7.4	0.8	2	1	-1	80	19.3	18.6	1	1	32	0	-1	0.76	90	300	-9	-9	-9	2	-1	3	1	9	3	4
1	0.4	3.4	0	10	12.8	1	2.3	1	0	80	19.5	18.5	0	1	25	0	0	0.7	90	300	3	675	10	2	-1	3	1	3	8	4
1	0.2	3.4	0	10	11.9	1	2.6	1	0	80	19.4	18.4	1	1	24	0	0	0.7	90	300	1	663	50	2	-1	3	1	10	8	4
1	0.1	3.7	0	10	11.9	1	2.6	1	1	80	19.4	18.4	-1	1	22	1	0	0.7	90	300	2	674	40	2	-1	3	1	11	1	4
1	0.2	3.9	0	10	11.9	1	2.6	1	1	80	19.4	18.4	0	1	21	1	1	0.7	90	300	2	674	40	2	-1	3	1	2	1	4
1	0.5	3.9	0	10	13.4	1	2.6	1	0	80	19.5	18.5	0	1	20	0	-1	0.7	90	300	2	674	40	2	-1	3	1	3	8	4
0	0.6	3.4	0	10	11.9	1	2.6	1	0	80	19.4	18.4	0	1	24	0	0	0.7	90	300	-9	-9	-9	2	-1	3	1	3	1	4
0	0.1	3.6	0	10	11.9	1	2.6	1	0	80	19.4	18.4	0	1	23	1	0	0.7	90	300	-9	-9	-9	2	-1	3	1	3	1	4
0	0.5	4	0	10	13.4	1	2.6	1	0	80	19.5	18.5	0	1	21	0	0	0.7	90	300	-9	-9	-9	2	-1	3	1	3	1	4
1	0.5	4.2	0	10	13.4	0.8	2.6	1	0	80	19.5	18.5	0	1	18	1	-1	0.76	90	300	3	675	10	2	-1	3	1	3	8	4
1	0.2	4.3	0	10	13.4	0.8	2.6	1	1	80	19.5	18.5	0	1	18	0	1	0.76	90	300	3	675	10	2	-1	3	1	2	2	4
1	0.2	4.4	0	10	13.8	0.8	3	1	0	80	19.5	18.4	-1	1	17	0	0	0.76	90	300	4	665	25	2	-1	3	1	10	2	4
1	0.1	4.6	0	10	13.8	0.8	3	1	1	80	19.5	18.4	-1	1	16	1	0	0.76	90	300	1	674	40	2	-1	3	1	0.5	2	4
0	0.5	4.1	0	10	13.4	0.8	2.6	1	0	80	19.5	18.5	0	1	20	1	1	0.76	90	300	-9	-9	-9	2	-1	3	1	3	2	4
0	0.6	4.7	0	10	13.8	0.8	3	1	0	80	19.5	18.4	0	1	15	0	1	0.76	90	300	-9	-9	-9	2	-1	3	1	3	2	4

CG-6580 **30 SEP 98 SEARCHES 1-2**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0.2	0.1	1	10	9.7	0.8	2	0	0	80	19.2	18.6	1	1	30	1	0	0.6	90	300	3	678	300	2	-1	0	0	2	9	4
1	0.1	0.5	1	10	9.1	0.8	2	0	0	80	19.3	18.7	1	1	31	0	-1	0.6	90	300	3	678	300	2	-1	0	0	3	9	4
1	0.1	0.6	1	10	9.1	0.8	2	0	0	80	19.3	18.7	0	1	31	0	0	0.6	90	300	2	677	35	2	-1	0	0	12	3	4
1	0.4	0.8	1	10	9.1	0.8	2	0	0	80	19.3	18.7	-1	1	32	0	1	0.7	90	300	2	677	35	2	-1	0	0	2	3	4
0	0.4	0.2	1	10	9.7	0.8	2	0	0	80	19.2	18.6	1	1	30	1	-1	0.6	90	300	-9	-9	-9	2	-1	0	0	3	9	4
0	0.6	0.3	1	10	9.7	0.8	2	0	1	80	19.2	18.6	-1	1	31	0	1	0.6	90	300	-9	-9	-9	2	-1	0	0	3	3	4
0	0.6	0.3	1	10	9.7	0.8	2	0	1	80	19.2	18.6	0	1	31	0	1	0.6	90	300	-9	-9	-9	2	-1	0	0	3	3	4
0	0.7	0.4	1	10	9.1	0.8	2	0	0	80	19.3	18.7	1	1	31	0	-1	0.6	90	300	-9	-9	-9	2	-1	0	0	3	9	4
0	0.7	0.5	1	10	9.1	0.8	2	0	1	80	19.3	18.7	-1	1	31	0	1	0.6	90	300	-9	-9	-9	2	-1	0	0	3	3	4
0	0.7	0.6	1	10	9.1	0.8	2	0	-1	80	19.3	18.7	1	1	31	0	-1	0.7	90	300	-9	-9	-9	2	-1	0	0	3	3	4
0	0.5	0.6	1	10	9.1	0.8	2	0	1	80	19.3	18.7	0	1	31	0	1	0.7	90	300	-9	-9	-9	2	-1	0	0	9	3	4
0	0.5	0.7	1	10	9.1	0.8	2	0	-1	80	19.3	18.7	1	1	32	0	-1	0.7	90	300	-9	-9	-9	2	-1	0	0	3	9	4

1	0.3	1.2	1	10	7.4	0.8	2	1	0	80	19.3	18.6	1	1	32	0	0	0.76	90	300	4	679	40	2	-1	0	0	8	3	4
1	0.3	1.4	1	10	9.1	0.8	2	1	-1	80	19.4	18.5	1	1	32	0	-1	0.76	90	300	4	679	40	2	-1	0	0	9	3	4
1	0.3	1.5	1	10	9.1	0.8	2	1	0	80	19.4	18.5	-1	1	32	0	1	0.76	90	300	4	679	40	2	-1	0	0	9	10	4
1	0.6	1.6	1	10	9.1	0.8	2	1	-1	80	19.4	18.5	1	1	31	1	-1	0.76	90	300	4	679	40	2	-1	0	0	9	3	4
1	0.3	1.7	1	10	9.1	0.8	2	1	1	80	19.4	18.5	-1	1	31	1	1	0.76	90	300	3	678	300	2	-1	0	0	3	3	4
1	0.5	1.8	1	10	9.1	0.8	2	1	0	80	19.4	18.5	-1	1	31	1	1	0.76	90	300	4	679	40	2	-1	0	0	9	10	4
0	0.4	1.1	1	10	7.4	0.8	2	1	-1	80	19.3	18.6	1	1	32	0	-1	0.76	90	300	-9	-9	-9	2	-1	0	0	9	3	4
0	0.8	1.2	1	10	7.4	0.8	2	1	1	80	19.3	18.6	-1	1	32	0	1	0.76	90	300	-9	-9	-9	2	-1	0	0	9	10	4
0	0.6	1.3	1	10	7.4	0.8	2	1	1	80	19.3	18.6	-1	1	32	0	1	0.76	90	300	-9	-9	-9	2	-1	0	0	9	10	4
0	0.8	1.4	1	10	9.1	0.8	2	1	-1	80	19.4	18.5	1	1	32	0	-1	0.76	90	300	-9	-9	-9	2	-1	0	0	9	3	4
0	0.5	1.4	1	10	9.1	0.8	2	1	0	80	19.4	18.5	1	1	32	0	-1	0.76	90	300	-9	-9	-9	2	-1	0	0	3	10	4

CG-6501 **2 OCT 98 SEARCHES 1-4**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0.3	0	0	15	12.1	0	2	2	1	65	16.1	17.7	1	1	26	1	-1	0.8	90	300	4	675	8	3	0	3	1	9	2	4
1	0.2	0	0	15	12.1	0	2	2	0	65	16.1	17.7	1	1	26	1	0	0.8	90	300	1	663	40	3	0	3	1	10	2	4
1	0.4	0.1	0	15	12.1	0	2	2	0	65	16.1	17.7	0	1	27	1	0	0.8	90	300	4	675	8	3	0	3	1	10	2	4
1	0.2	0.2	0	15	12.1	0	2	2	1	65	16.1	17.7	1	1	27	1	-1	0.8	90	300	2	674	40	3	0	3	1	2	8	4
1	0.2	0.2	0	15	12.1	0	2	2	0	65	16.1	17.7	0	1	27	1	0	0.8	90	300	1	663	40	3	0	3	1	10	8	4
1	0.3	0.2	0	15	12.1	0	2	2	0	65	16.1	17.7	0	1	27	1	0	0.8	90	300	1	663	40	3	0	3	1	10	8	4
1	0.2	0.2	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	27	1	0	0.8	90	300	4	675	8	3	0	3	1	11	8	4
1	0.5	0.2	0	15	10.3	0	2	2	1	65	15.9	17.7	1	1	28	1	-1	0.8	90	300	4	675	8	3	0	3	1	9	2	4
1	0.3	0.3	0	15	10.3	0	2	2	-1	65	15.9	17.7	-1	1	28	1	1	0.8	90	300	3	665	30	3	0	3	1	3	2	4
1	0.1	0.3	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	28	1	0	0.8	90	300	2	674	40	3	0	3	1	11	2	4
1	0.1	0.4	0	15	10.3	0	2	2	1	65	15.9	17.7	1	1	29	1	-1	0.8	90	300	2	674	40	3	0	3	1	2	8	4
1	0.4	0.5	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	30	1	0	0.9	90	300	4	675	8	3	0	3	1	11	2	4
1	0.6	0.6	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	31	1	0	0.9	90	300	3	665	30	3	0	3	1	3	1	4
1	0.1	0.6	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	31	1	0	0.9	90	300	3	665	30	3	0	3	1	12	8	4
1	0.1	0.8	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	32	1	0	0.9	90	300	2	674	40	3	0	3	1	12	2	4
0	0.3	0	0	15	12.1	0	2	2	1	65	16.1	17.7	1	1	26	1	-1	0.8	90	300	-9	-9	-9	3	0	3	1	9	2	4
0	0.7	0.1	0	15	12.1	0	2	2	1	65	16.1	17.7	1	1	27	1	-1	0.8	90	300	-9	-9	-9	3	0	3	1	9	2	4
0	0.7	0.1	0	15	12.1	0	2	2	0	65	16.1	17.7	1	1	27	1	0	0.8	90	300	-9	-9	-9	3	0	3	1	3	2	4
0	0.8	0.3	0	15	10.3	0	2	2	-1	65	15.9	17.7	-1	1	28	1	1	0.8	90	300	-9	-9	-9	3	0	3	1	3	2	4
0	0.6	0.3	0	15	10.3	0	2	2	-1	65	15.9	17.7	-1	1	28	1	1	0.8	90	300	-9	-9	-9	3	0	3	1	3	2	4
0	0.4	0.4	0	15	10.3	0	2	2	0	65	15.9	17.7	-1	1	29	1	0	0.8	90	300	-9	-9	-9	3	0	3	1	9	8	4
0	0.8	0.4	0	15	10.3	0	2	2	0	65	15.9	17.7	-1	1	29	1	0	0.8	90	300	-9	-9	-9	3	0	3	1	9	8	4
0	0.3	0.5	0	15	10.3	0	2	2	-1	65	15.9	17.7	-1	1	29	1	1	0.9	90	300	-9	-9	-9	3	0	3	1	3	2	4
0	0.9	0.6	0	15	10.3	0	2	2	-1	65	15.9	17.7	-1	1	30	1	1	0.9	90	300	-9	-9	-9	3	0	3	1	3	2	4
0	0.9	0.7	0	15	10.3	0	2	2	0	65	15.9	17.7	-1	1	31	1	0	0.9	90	300	-9	-9	-9	3	0	3	1	9	2	4
0	0.6	0.8	0	15	11.3	0	2	2	-1	65	15.8	17.6	-1	1	32	1	1	0.9	90	300	-9	-9	-9	3	0	3	1	3	8	4
0	0.7	0.3	0	15	10.3	0	2	2	-1	65	15.9	17.7	-1	1	28	1	1	0.8	90	300	-9	-9	-9	3	0	3	1	3	8	4
0	0.2	0.1	0	15	12.1	0	2	2	0	65	16.1	17.7	0	1	27	1	0	0.8	90	300	-9	-9	-9	3	0	3	1	9	2	4
1	0.5	0.9	0	15	11.3	0	2	2	1	65	15.8	17.6	0	1	33	1	-1	0.92	90	300	3	665	30	3	0	3	1	2	8	4
1	0.4	1	0	15	11.3	0	2	2	1	65	15.8	17.6	1	1	33	1	-1	0.92	90	300	3	665	30	3	0	3	1	2	8	4
1	0	1	0	15	11.3	0	2	2	-1	65	15.8	17.6	-1	1	33	1	1	0.92	90	300	3	665	30	3	0	3	1	2	3	4
1	0	1	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	33	1	0	0.92	90	300	2	674	40	3	0	3	1	12	3	4
1	0.3	1.1	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	34	1	0	0.92	90	300	1	663	40	3	0	3	1	10	3	4
1	0.1	1.1	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	34	1	0	0.92	90	300	1	663	40	3	0	3	1	12	3	4
1	0.5	1.1	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	34	1	1	0.92	90	300	4	675	8	3	0	3	1	9	8	4
1	0.3	1.1	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	34	1	-1	0.92	90	300	3	665	30	3	0	3	1	3	8	4

1	0.2	1.2	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	34	1	0	0.92	90	300	1	663	40	3	0	3	1	10	8	4
1	0.1	1.2	0	15	9.5	0	2	2	0	65	15.6	17.6	1	1	34	1	0	0.92	90	300	3	665	30	3	0	3	1	2	5	4
1	0.3	1.3	0	15	9.5	0	2	2	-1	65	15.6	17.6	-1	1	34	1	1	0.92	90	300	2	674	40	3	0	3	1	2	3	4
1	0.3	1.6	0	15	9.5	0	2	2	0	65	15.6	17.6	0	1	35	1	0	0.92	90	300	1	663	40	3	0	3	1	10	8	4
1	0	1.6	0	15	9.5	0	2	2	0	65	15.6	17.6	0	1	36	1	0	0.92	90	300	1	663	40	3	0	3	1	12	8	4
0	0.8	0.9	0	15	11.3	0	2	2	0	65	15.8	17.6	1	1	33	1	-1	0.92	90	300	-9	-9	-9	3	0	3	1	3	8	4
0	0.4	1	0	15	11.3	0	2	2	0	65	15.8	17.6	1	1	33	1	-1	0.92	90	300	-9	-9	-9	3	0	3	1	3	8	4
0	0.8	1.1	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	33	1	-1	0.92	90	300	-9	-9	-9	3	0	3	1	9	3	4
0	0.6	1.2	0	15	11.3	0	2	2	-1	65	15.8	17.6	-1	1	33	1	1	0.92	90	300	-9	-9	-9	3	0	3	1	3	8	4
0	0.7	1.3	0	15	9.5	0	2	2	-1	65	15.6	17.6	-1	1	34	1	1	0.92	90	300	-9	-9	-9	3	0	3	1	3	3	4
0	0.4	1.5	0	15	9.5	0	2	2	0	65	15.6	17.6	-1	1	35	1	1	0.92	90	300	-9	-9	-9	3	0	3	1	9	8	4
0	0.8	1.6	0	15	9.5	0	2	2	0	65	15.6	17.6	1	1	36	1	-1	0.92	90	300	-9	-9	-9	3	0	3	1	3	8	4
0	0.5	1.9	0	15	9.5	0	2	2	0	65	15.6	17.6	-1	1	37	1	1	0.92	90	300	-9	-9	-9	3	0	3	1	9	8	4
0	0.6	1.2	0	15	9.5	0	2	2	-1	65	15.6	17.6	-1	1	33	1	1	0.92	90	300	-9	-9	-9	3	0	3	1	9	8	4
0	0.7	1.2	0	15	9.5	0	2	2	0	65	15.6	17.6	1	1	33	1	-1	0.92	90	300	-9	-9	-9	3	0	3	1	3	8	4
1	0.4	3.4	0	15	12.6	0	2.3	2	0	65	14.6	17.6	0	1	37	1	-1	0.9	90	300	1	674	42	3	0	1.5	1	10	4	4
1	0.2	3.4	0	15	12.6	0	2.3	2	1	65	14.6	17.6	1	1	37	1	0	0.9	90	300	2	663	42	3	0	1.5	1	2	10	4
1	0.1	3.6	0	15	12.6	0	2.3	2	0	65	14.6	17.6	0	1	37	1	0	0.9	90	300	1	674	42	3	0	1.5	1	12	4	4
1	0.1	3.8	0	15	10.5	0	2.3	2	0	65	14.1	17.6	1	1	36	1	-1	0.9	90	300	2	663	42	3	0	1.5	1	3	10	4
1	0.4	3.8	0	15	10.5	0	2.3	2	1	65	14.1	17.6	1	1	36	1	0	0.9	90	300	3	675	10	3	0	1.5	1	9	4	4
1	0.1	3.9	0	15	10.5	0	2.3	2	0	65	14.1	17.6	0	1	35	1	1	0.9	90	300	1	674	42	3	0	1.5	1	10	10	4
0	0.3	3.3	0	15	12.6	0	2.3	2	1	65	14.6	17.6	1	1	37	1	0	0.9	90	300	-9	-9	-9	3	0	1.5	1	9	4	4
0	0.7	3.3	0	15	12.6	0	2.3	2	1	65	14.6	17.6	1	1	37	1	0	0.9	90	300	-9	-9	-9	3	0	1.5	1	9	4	4
0	0.6	3.4	0	15	12.6	0	2.3	2	0	65	14.6	17.6	0	1	37	1	1	0.9	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.6	3.4	0	15	12.6	0	2.3	2	0	65	14.6	17.6	0	1	37	1	-1	0.9	90	300	-9	-9	-9	3	0	1.5	1	3	10	4
0	0.2	3.5	0	15	12.6	0	2.3	2	0	65	14.6	17.6	-1	1	37	1	1	0.9	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.6	3.5	0	15	12.6	0	2.3	2	1	65	14.6	17.6	1	1	37	1	0	0.9	90	300	-9	-9	-9	3	0	1.5	1	9	4	4
0	0.7	3.5	0	15	12.6	0	2.3	2	-1	65	14.6	17.6	-1	1	37	1	0	0.9	90	300	-9	-9	-9	3	0	1.5	1	3	4	4
0	0.4	3.6	0	15	12.6	0	2.3	2	-1	65	14.6	17.6	-1	1	37	1	0	0.9	90	300	-9	-9	-9	3	0	1.5	1	3	4	4
0	0.6	3.6	0	15	12.6	0	2.3	2	-1	65	14.6	17.6	0	1	37	1	0	0.9	90	300	-9	-9	-9	3	0	1.5	1	3	4	4
0	0.4	3.6	0	15	12.6	0	2.3	2	0	65	14.6	17.6	0	1	36	1	1	0.9	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.8	3.7	0	15	12.6	0	2.3	2	0	65	14.6	17.6	-1	1	36	1	1	0.9	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.4	3.8	0	15	10.5	0	2.3	2	-1	65	14.1	17.6	-1	1	36	1	0	0.9	90	300	-9	-9	-9	3	0	1.5	1	3	4	4
0	0.9	3.9	0	15	10.5	0	2.3	2	-1	65	14.1	17.6	0	1	36	1	0	0.9	90	300	-9	-9	-9	3	0	1.5	1	3	4	4
0	0.9	4	0	15	10.5	0	2.3	2	0	65	14.1	17.6	-1	1	35	1	1	0.9	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.6	4.1	0	15	10.5	0	2.3	2	-1	65	14.1	17.6	0	1	35	1	0	0.9	90	300	-9	-9	-9	3	0	1.5	1	3	4	4
1	0.5	4.1	0	15	10.5	0	2.3	2	0	65	14.1	17.6	0	1	35	1	0	0.92	90	300	3	675	10	3	0	1.5	1	3	10	4
1	0.1	4.3	0	15	14.2	0	2.3	2	-1	65	14.4	17.5	-1	1	34	1	0	0.92	90	300	2	663	42	3	0	1.5	1	2	5	4
1	0.2	4.3	0	15	14.2	0	2.3	2	1	65	14.4	17.5	1	1	34	1	0	0.92	90	300	4	665	32	3	0	1.5	1	9	5	4
1	0	4.3	0	15	14.2	0	2.3	2	0	65	14.4	17.5	0	1	34	1	0	0.92	90	300	3	675	10	3	0	1.5	1	0.5	5	4
1	0.3	4.4	0	15	14.2	0	2.3	2	1	65	14.4	17.5	1	1	34	1	0	0.92	90	300	3	675	10	3	0	1.5	1	2	10	4
1	0.3	4.6	0	15	14.2	0	2.3	2	-1	65	14.4	17.5	-1	1	33	1	0	0.92	90	300	2	663	42	3	0	1.5	1	2	10	4
1	0	4.8	0	15	12.4	0	2	2	0	65	14.2	17.4	-1	1	32	1	0	0.92	90	300	2	663	42	3	0	1.5	1	1	10	4
1	0	4.8	0	15	12.4	0	2	2	1	65	14.2	17.4	1	1	31	1	0	0.92	90	300	1	674	42	3	0	1.5	1	1	9	4
0	0.9	4.2	0	15	14.2	0	2.3	2	0	65	14.4	17.5	1	1	35	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	3	10	4
0	0.5	4.2	0	15	14.2	0	2.3	2	0	65	14.4	17.5	1	1	35	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	3	10	4
0	0.7	4.3	0	15	14.2	0	2.3	2	1	65	14.4	17.5	0	1	34	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	9	5	4
0	0.6	4.4	0	15	14.2	0	2.3	2	0	65	14.4	17.5	0	1	34	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.2	4.4	0	15	14.2	0	2.3	2	0	65	14.4	17.5	-1	1	34	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.5	4.5	0	15	14.2	0	2.3	2	0	65	14.4	17.5	-1	1	34	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.7	4.5	0	15	14.2	0	2.3	2	0	65	14.4	17.5	1	1	33	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	3	5	4
0	0.7	4.6	0	15	14.2	0	2.3	2	-1	65	14.4	17.5	-1	1	33	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	3	5	4

0	0.8	4.6	0	15	14.2	0	2.3	2	0	65	14.4	17.5	0	1	32	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.5	4.7	0	15	14.2	0	2.3	2	0	65	14.4	17.5	1	1	32	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	3	10	4
0	0.2	4.7	0	15	14.2	0	2.3	2	0	65	14.4	17.5	-1	1	32	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.8	4.7	0	15	12.4	0	2	2	-1	65	14.2	17.4	-1	1	32	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	3	5	4
0	0.5	4.9	0	15	12.4	0	2	2	0	65	14.2	17.4	-1	1	31	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	9	10	4
0	0.1	4.5	0	15	14.2	0	2.3	2	1	65	14.4	17.5	1	1	33	1	0	0.92	90	300	-9	-9	-9	3	0	1.5	1	9	5	4

CG-6580 **2 OCT 98 SEARCHES 1-2**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0.5	0.1	0	15	10.3	0	2	2	1	65	15.9	17.7	0	1	29	1	-1	0.8	90	300	1	680	75	3	0	0.5	0	9	2	4
1	0.1	0.2	0	15	10.3	0	2	2	1	65	15.9	17.7	1	1	29	1	-1	0.8	90	300	2	676	40	3	0	0.5	0	2	8	4
1	0.2	0.2	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	29	1	0	0.9	90	300	1	680	75	3	0	0.5	0	11	8	4
1	0.3	0.3	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	30	1	0	0.9	90	300	2	676	40	3	0	0.5	0	1.5	3	4
1	0.2	0.4	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	30	1	0	0.9	90	300	1	680	75	3	0	0.5	0	10	3	4
1	0.1	0.5	0	15	11.3	0	2	2	1	65	15.8	17.6	1	1	31	1	0	0.9	90	300	2	676	40	3	0	0.5	0	1	8	4
1	0.4	0.6	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	32	1	0	0.9	90	300	4	679	40	3	0	0.5	0	10	2	4
1	0.3	0.7	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	32	1	0	0.9	90	300	3	678	275	3	0	0.5	0	3	8	4
1	0.2	0.7	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	32	1	0	0.9	90	300	1	680	75	3	0	0.5	0	11	8	4
1	0	0.9	0	15	11.3	0	2	2	0	65	15.8	17.6	0	1	33	1	0	0.9	90	300	2	676	40	3	0	0.5	0	11	3	4
0	0.4	0	0	15	10.3	0	2	2	1	65	15.9	17.7	1	1	28	1	-1	0.8	90	300	-9	-9	-9	3	0	0.5	0	9	3	4
0	0.4	0	0	15	10.3	0	2	2	1	65	15.9	17.7	1	1	28	1	-1	0.8	90	300	-9	-9	-9	3	0	0.5	0	9	3	4
0	0.4	0	0	15	10.3	0	2	2	1	65	15.9	17.7	1	1	28	1	-1	0.8	90	300	-9	-9	-9	3	0	0.5	0	9	3	4
0	0.3	0.1	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	29	1	1	0.8	90	300	-9	-9	-9	3	0	0.5	0	9	8	4
0	0.6	0.1	0	15	10.3	0	2	2	0	65	15.9	17.7	0	1	29	1	-1	0.8	90	300	-9	-9	-9	3	0	0.5	0	3	8	4
0	0.3	0.2	0	15	10.3	0	2	2	0	65	15.9	17.7	-1	1	30	1	1	0.9	90	300	-9	-9	-9	3	0	0.5	0	9	8	4
0	0.3	0.2	0	15	10.3	0	2	2	0	65	15.9	17.7	-1	1	30	1	1	0.9	90	300	-9	-9	-9	3	0	0.5	0	9	8	4
0	0.6	0.3	0	15	10.3	0	2	2	1	65	15.9	17.7	1	1	30	1	-1	0.9	90	300	-9	-9	-9	3	0	0.5	0	9	3	4
0	0.7	0.3	0	15	10.3	0	2	2	-1	65	15.9	17.7	-1	1	30	1	1	0.9	90	300	-9	-9	-9	3	0	0.5	0	3	3	4
0	0.6	0.3	0	15	10.3	0	2	2	-1	65	15.9	17.7	-1	1	30	1	1	0.9	90	300	-9	-9	-9	3	0	0.5	0	3	3	4
0	0.6	0.4	0	15	10.3	0	2	2	-1	65	15.9	17.7	0	1	30	1	1	0.9	90	300	-9	-9	-9	3	0	0.5	0	3	3	4
0	0.5	0.4	0	15	10.3	0	2	2	-1	65	15.9	17.7	0	1	31	1	1	0.9	90	300	-9	-9	-9	3	0	0.5	0	9	8	4
0	0.3	0.7	0	15	11.3	0	2	2	0	65	15.8	17.6	-1	1	31	1	1	0.9	90	300	-9	-9	-9	3	0	0.5	0	3	2	4
0	0.5	0.9	0	15	11.3	0	2	2	-1	65	15.8	17.6	-1	1	33	1	1	0.9	90	300	-9	-9	-9	3	0	0.5	0	3	3	4
1	0.4	1	0	15	11.3	0	2	1	0	65	15.8	17.6	0	1	34	1	-1	0.92	90	300	4	679	40	3	0	2	0	3	8	4
1	0.4	1	0	15	9.5	0	2	1	1	65	15.6	17.6	0	1	34	1	0	0.92	90	300	2	676	40	3	0	2	0	1	8	4
1	0.4	1.1	0	15	9.5	0	2	1	1	65	15.6	17.6	0	1	34	1	0	0.92	90	300	2	676	40	3	0	2	0	1	8	4
1	0.1	1.1	0	15	9.5	0	2	1	0	65	15.6	17.6	0	1	35	1	0	0.92	90	300	1	680	75	3	0	2	0	11	2	4
1	0.3	1.1	0	15	9.5	0	2	1	0	65	15.6	17.6	0	1	35	1	0	0.92	90	300	2	676	40	3	0	2	0	10	2	4
1	0	1.2	0	15	9.5	0	2	1	0	65	15.6	17.6	0	1	35	1	0	0.92	90	300	2	676	40	3	0	2	0	12	2	4
1	0.1	1.2	0	15	9.5	0	2	1	0	65	15.6	17.6	1	1	35	1	0	0.92	90	300	1	680	75	3	0	2	0	0.5	8	4
1	0.3	1.2	0	15	9.5	0	2	1	0	65	15.6	17.6	0	1	35	1	0	0.92	90	300	1	680	75	3	0	2	0	11	8	4
1	0.6	1.3	0	15	9.5	0	2	1	0	65	15.6	17.6	0	1	35	1	0	0.92	90	300	1	680	75	3	0	2	0	10	8	4
1	0.2	1.3	0	15	9.5	0	2	1	0	65	15.6	17.6	0	1	35	1	0	0.92	90	300	1	680	75	3	0	2	0	11	9	4
1	0.2	1.4	0	15	9.5	0	2	1	0	65	15.6	17.6	1	1	36	1	0	0.92	90	300	1	680	75	3	0	2	0	11	3	4
1	0.2	1.4	0	15	9.5	0	2	1	0	65	15.6	17.6	0	1	36	1	0	0.92	90	300	2	676	40	3	0	2	0	1	2	4
1	0.5	1.5	0	15	9.7	0	2	1	0	65	15.5	17.6	1	1	36	1	0	0.92	90	300	2	676	40	3	0	2	0	3	8	4
1	0.3	1.6	0	15	9.7	0	2	1	0	65	15.5	17.6	0	1	36	1	0	0.92	90	300	1	680	75	3	0	2	0	10	8	4
1	0.1	1.6	0	15	9.7	0	2	1	0	65	15.5	17.6	0	1	37	1	0	0.92	90	300	1	680	75	3	0	2	0	12	2	4
1	0.6	1.7	0	15	9.7	0	2	1	0	65	15.5	17.6	0	1	37	1	0	0.92	90	300	1	680	75	3	0	2	0	11	2	4
1	0.5	1.8	0	15	9.7	0	2	1	0	65	15.5	17.6	0	1	37	1	0	0.92	90	300	1	680	75	3	0	2	0	10	8	4

0	0.7	1.2	0	15	9.5	0	2	1	0	65	15.6	17.6	0	1	35	1	1	0.92	90	300	-9	-9	-9	3	0	2	0	9	8	4
0	0.7	1.3	0	15	9.5	0	2	1	0	65	15.6	17.6	-1	1	35	1	1	0.92	90	300	-9	-9	-9	3	0	2	0	9	8	4
0	0.7	1.3	0	15	9.5	0	2	1	0	65	15.6	17.6	1	1	35	1	-1	0.92	90	300	-9	-9	-9	3	0	2	0	3	8	4
0	0.6	1.4	0	15	9.5	0	2	1	-1	65	15.6	17.6	-1	1	36	1	1	0.92	90	300	-9	-9	-9	3	0	2	0	3	2	4

CG-6501 **5 OCT 98 SEARCHES 1-4**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	1.4	0	0	15	5.4	0.1	1	0	0	44	17.1	16.6	1	1	11	1	0	1	90	300	1	681	30	2	-1	1	1	9	1	4
1	0.6	0.1	0	15	5.4	0.1	1	0	1	44	17.1	16.6	0	1	11	1	0	1	90	300	4	683	15	2	-1	1	1	10	1	4
1	1.4	0.1	0	15	5.4	0.1	1	0	0	44	17.1	16.6	0	1	11	1	-1	1	90	300	1	681	30	2	-1	1	1	10	5	4
1	0.1	0.1	0	15	5.4	0.1	1	0	-1	44	17.1	16.6	0	1	11	1	0	1	90	300	4	683	15	2	-1	1	1	10	7	4
1	0.9	0.2	0	15	5.4	0.1	1	0	0	44	17.1	16.6	1	1	12	1	-1	1	90	300	2	674	10	2	-1	1	1	1	7	4
1	0.4	0.3	0	15	5.1	0.1	1	0	1	44	16.7	16.5	0	1	13	1	0	1	90	300	4	683	15	2	-1	1	1	10	1	4
1	0.6	0.3	0	15	5.1	0.1	1	0	-1	44	16.7	16.5	0	1	13	1	0	1	90	300	1	681	30	2	-1	1	1	11	7	4
1	0.4	0.4	0	15	5.1	0.1	1	0	0	44	16.7	16.5	1	1	14	1	-1	1	90	300	1	681	30	2	-1	1	1	1	7	4
1	1.1	0.5	0	15	5.1	0.1	1	0	1	44	16.7	16.5	-1	1	15	1	0	0.9	90	300	4	683	15	2	-1	1	1	10	1	4
1	0.7	0.5	0	15	5.1	0.1	1	0	1	44	16.7	16.5	0	1	15	1	0	0.9	90	300	4	683	15	2	-1	1	1	0.5	1	4
1	0.1	0.6	0	15	5.1	0.1	1	0	1	44	16.7	16.5	0	1	16	1	0	0.9	90	300	1	681	30	2	-1	1	1	10	1	4
1	0.2	0.7	0	15	5.1	0.1	1	0	-1	44	16.7	16.5	0	1	17	1	0	0.9	90	300	1	681	30	2	-1	1	1	11	7	4
1	1	0.8	0	15	5.4	0.1	1	0	-1	44	16.4	16.2	-1	1	18	1	0	0.9	90	300	3	682	0	2	-1	1	1	4	1	4
1	1.2	0.8	0	15	5.4	0.1	1	0	1	44	16.4	16.2	0	1	19	1	0	0.9	90	300	4	683	15	2	-1	1	1	10	1	4
1	0	0.9	0	15	5.4	0.1	1	0	0	44	16.4	16.2	1	1	19	1	0	0.9	90	300	3	682	0	2	-1	1	1	2	7	4
1	0.5	0.9	0	15	5.4	0.1	1	0	0	44	16.4	16.2	1	1	20	1	-1	0.9	90	300	1	681	30	2	-1	1	1	1	7	4
1	0.6	0.9	0	15	5.4	0.1	1	0	-1	44	16.4	16.2	0	1	20	1	0	0.9	90	300	1	681	30	2	-1	1	1	10	7	4
0	0.4	0.3	0	15	5.1	0.1	1	0	0	44	16.7	16.5	-1	1	14	1	0	1	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	1.9	0.5	0	15	5.1	0.1	1	0	0	44	16.7	16.5	-1	1	15	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	9	4
0	1.5	0.7	0	15	5.1	0.1	1	0	0	44	16.7	16.5	-1	1	18	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	7	4
0	1.5	0.7	0	15	5.4	0.1	1	0	0	44	16.4	16.2	1	1	18	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	7	4
0	0.4	0.8	0	15	5.4	0.1	1	0	0	44	16.4	16.2	1	1	19	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	1	4
0	1.6	0.8	0	15	5.4	0.1	1	0	0	44	16.4	16.2	1	1	19	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	1	4
0	1.5	1	0	15	5.4	0.1	1	0	0	44	16.4	16.2	-1	1	21	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	0.5	1	0	15	5.4	0.1	1	0	0	44	16.4	16.2	-1	1	21	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	0.9	1.1	0	15	5.4	0.1	1	0	0	44	16.4	16.2	-1	1	22	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	1	4
1	1.3	1.2	0	15	6.4	0.1	1	0	0	44	15.8	15.9	1	1	23	1	-1	0.99	90	300	3	682	1	2	-1	1	1	2	5	4
1	0.4	1.3	0	15	6.4	0.1	1	0	1	44	15.8	15.9	0	1	24	1	0	0.99	90	300	1	681	30	2	-1	1	1	10	1	4
1	0.4	1.4	0	15	6.4	0.1	1	0	0	44	15.8	15.9	0	1	25	1	1	0.99	90	300	3	682	1	2	-1	1	1	2	1	4
1	0.7	1.5	0	15	6.4	0.1	1	0	-1	44	15.8	15.9	0	1	26	1	0	0.99	90	300	4	683	15	2	-1	1	1	11	5	4
1	0.8	1.5	0	15	6.4	0.1	1	0	0	44	15.8	15.9	0	1	26	1	-1	0.99	90	300	3	682	1	2	-1	1	1	1	5	4
1	1.4	1.6	0	15	6.4	0.1	1	0	0	44	15.8	15.9	1	1	27	1	0	0.99	90	300	1	681	30	2	-1	1	1	9	1	4
1	0.9	1.7	0	15	6.4	0.1	1	0	0	44	15.8	15.9	1	1	28	1	-1	0.99	90	300	4	683	15	2	-1	1	1	1.5	5	4
1	1.4	1.7	0	15	7.4	0.1	1	0	0	44	15.6	16.2	1	1	29	1	-1	0.99	90	300	3	682	1	2	-1	1	1	1.5	5	4
1	0.3	1.7	0	15	7.4	0.1	1	0	0	44	15.6	16.2	0	1	29	1	-1	0.99	90	300	1	681	30	2	-1	1	1	0.5	5	4
1	0.5	1.9	0	15	7.4	0.1	1	0	1	44	15.6	16.2	0	1	30	1	0	0.99	90	300	2	674	10	2	-1	1	1	10	1	4
1	0.1	1.9	0	15	7.4	0.1	1	0	0	44	15.6	16.2	0	1	30	1	0	0.99	90	300	2	674	10	2	-1	1	1	12	1	4
1	0.6	2	0	15	7.4	0.1	1	0	-1	44	15.6	16.2	-1	1	31	1	0	0.99	90	300	4	683	15	2	-1	1	1	9	5	4
0	0.5	1.2	0	15	6.4	0.1	1	0	0	44	15.8	15.9	1	1	23	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	5	4
0	1.9	1.3	0	15	6.4	0.1	1	0	0	44	15.8	15.9	1	1	24	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	1	4
0	1.6	1.3	0	15	6.4	0.1	1	0	0	44	15.8	15.9	-1	1	25	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	5	4
0	1.6	1.6	0	15	6.4	0.1	1	0	0	44	15.8	15.9	-1	1	28	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	1.2	1.8	0	15	7.4	0.1	1	0	0	44	15.6	16.2	-1	1	29	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	5	4

0	2	1.8	0	15	7.4	0.1	1	0	0	44	15.6	16.2	-1	1	30	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	0.6	1.8	0	15	7.4	0.1	1	0	0	44	15.6	16.2	-1	1	30	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	1.1	2	0	15	7.4	0.1	1	0	0	44	15.6	16.2	-1	1	31	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	5	4
0	1.7	2	0	15	7.4	0.1	1	0	0	44	15.6	16.2	-1	1	31	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	5	4
0	0.1	1.8	0	15	6.4	0.1	1	0	0	44	15.8	15.9	-1	1	27	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	1	4
1	1.3	3.1	0	15	13	0.1	1.3	0	0	44	14.6	16.5	0	1	42	1	0	0.9	90	300	3	683	17	2	-1	1	1	3	4	4
1	0.7	3.3	0	15	13.8	0.1	2	0	0	44	14	16.3	1	1	42	1	-1	0.9	90	300	4	682	2	2	-1	1	1	10.5	4	4
1	1.5	3.4	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	43	1	0	0.9	90	300	3	683	17	2	-1	1	1	3	1	4
1	0.1	3.5	0	15	13.8	0.1	2	0	0	44	14	16.3	1	1	44	1	0	0.9	90	300	2	681	32	2	-1	1	1	12	4	4
1	0.3	3.6	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	46	1	0	0.9	90	300	4	682	2	2	-1	1	1	9	1	4
1	0.8	3.8	0	15	15	0.1	2.3	0	0	44	13.8	16.2	1	1	46	1	-1	0.9	90	300	4	682	2	2	-1	1	1	10.5	4	4
1	0.6	3.9	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	47	1	0	0.9	90	300	4	682	2	2	-1	1	1	9	1	4
1	0.1	3.9	0	15	15	0.1	2.3	0	0	44	13.8	16.2	1	1	47	1	-1	0.9	90	300	2	681	32	2	-1	1	1	11	4	4
0	0.5	3.2	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	42	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	1	4
0	1.3	3.4	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	43	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	1	4
0	1	3.4	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	44	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	4	4
0	0.8	3.5	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	44	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	0.2	3.5	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	44	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	1	4
0	1	3.6	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	45	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	4	4
0	1.9	3.6	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	45	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	4	4
0	1.2	3.6	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	46	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	4	4
0	1.8	3.7	0	15	13.8	0.1	2	0	0	44	14	16.3	0	1	46	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	1.4	3.7	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	46	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	4	4
0	1.8	3.8	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	46	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	4	4
0	1.6	3.8	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	47	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	1	3.8	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	47	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	1	4
0	0.6	3.8	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	47	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	9	1	4
0	1	3.9	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	48	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	1	4
0	1.4	3.9	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	48	1	0	0.9	90	300	-9	-9	-9	2	-1	1	1	3	1	4
1	0.8	4.2	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	1	1	49	1	-1	0.99	90	300	4	682	2	2	-1	1	1	10	5	4
1	0.9	4.3	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	1	1	49	1	0	0.99	90	300	4	682	2	2	-1	1	1	9	5	4
1	0.1	4.5	0	15	16.3	0.1	2.6	0	1	44	13.4	16.2	1	1	50	1	-1	0.99	90	300	1	674	12	2	-1	1	1	12	5	4
1	0.7	4.6	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	1	1	51	1	0	0.99	90	300	4	682	2	2	-1	1	1	10	5	4
0	1.6	4	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	48	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	5	4
0	1.1	4.1	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	48	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	5	4
0	1	4.1	0	15	15	0.1	2.3	0	1	44	13.8	16.2	0	1	48	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	12	4
0	0.7	4.1	0	15	15	0.1	2.3	0	1	44	13.8	16.2	0	1	48	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	12	4
0	1.7	4.2	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	48	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	5	4
0	1.9	4.2	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	0	1	48	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	5	4
0	1.8	4.3	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	0	1	48	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	12	4
0	1.8	4.3	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	0	1	49	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	5	4
0	1.3	4.4	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	0	1	49	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	5	4
0	0.6	4.4	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	0	1	49	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	12	4
0	0.2	4.4	0	15	16.3	0.1	2.6	0	1	44	13.4	16.2	0	1	49	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	12	4
0	1.1	4.5	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	0	1	50	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	5	4
0	1.4	4.5	0	15	16.3	0.1	2.6	0	1	44	13.4	16.2	0	1	50	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	12	4
0	1.4	4.5	0	15	16.3	0.1	2.6	0	0	44	13.4	16.2	0	1	51	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	12	4
0	0.6	4.5	0	15	16.3	0.1	2.6	0	1	44	13.4	16.2	0	1	51	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	12	4
0	1.4	4.6	0	15	16.7	0.1	3	0	0	44	12.9	16.1	0	1	51	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	5	4
0	1.6	4.1	0	15	15	0.1	2.3	0	0	44	13.8	16.2	0	1	48	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	3	12	4
0	0.5	4.2	0	15	16.3	0.1	2.6	0	1	44	13.4	16.2	0	1	49	1	0	0.99	90	300	-9	-9	-9	2	-1	1	1	9	12	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	1.4	0	0	15	5.4	0.1	1	0	0	44	17.1	16.6	1	1	8	1	0	1	90	300	1	686	700	2	-1	0	0	9	1	3
1	0.7	0.1	0	15	5.4	0.1	1	0	0	44	17.1	16.6	0	1	8	1	0	1	90	300	1	686	700	2	-1	0	0	9	1	3
1	0.5	0.2	0	15	5.4	0.1	1	0	-1	44	17.1	16.6	0	1	8	1	0	1	90	300	1	686	700	2	-1	0	0	11	7	3
1	0.3	0.2	0	15	5.4	0.1	1	0	0	44	17.1	16.6	0	1	10	1	-1	1	90	300	2	684	20	2	-1	0	0	1	7	3
1	0.9	0.3	0	15	5.4	0.1	1	0	0	44	17.1	16.6	1	1	10	1	0	1	90	300	1	686	700	2	-1	0	0	9	1	3
1	0.6	0.3	0	15	5.4	0.1	1	0	-1	44	17.1	16.6	0	1	11	1	0	1	90	300	3	685	0	2	-1	0	0	5	1	3
1	1.3	0.5	0	15	5.1	0.1	1	0	0	44	16.7	16.5	1	1	12	1	0	1	90	300	2	684	20	2	-1	0	0	2	7	3
1	0.2	0.5	0	15	5.1	0.1	1	0	0	44	16.7	16.5	0	1	12	1	-1	1	90	300	1	686	700	2	-1	0	0	12	7	3
1	1.1	0.6	0	15	5.1	0.1	1	0	-1	44	16.7	16.5	-1	1	13	1	0	1	90	300	3	685	0	2	-1	0	0	4	1	3
1	0.4	0.6	0	15	5.1	0.1	1	0	1	44	16.7	16.5	0	1	13	1	0	1	90	300	1	686	700	2	-1	0	0	10	1	3
1	1.1	0.6	0	15	5.1	0.1	1	0	1	44	16.7	16.5	0	1	13	1	0	1	90	300	1	686	700	2	-1	0	0	10	1	3
1	0.9	0.7	0	15	5.1	0.1	1	0	0	44	16.7	16.5	0	1	14	1	-1	1	90	300	1	686	700	2	-1	0	0	12	6	3
1	0.6	0.7	0	15	5.1	0.1	1	0	0	44	16.7	16.5	1	1	15	1	0	1	90	300	2	684	20	2	-1	0	0	2	7	3
1	0.6	0.8	0	15	5.1	0.1	1	0	-1	44	16.7	16.5	0	1	15	1	0	0.9	90	300	1	686	700	2	-1	0	0	11	7	3
1	0.5	0.9	0	15	5.1	0.1	1	0	0	44	16.7	16.5	-1	1	17	1	0	0.9	90	300	3	685	0	2	-1	0	0	3	1	3
1	0.9	0.9	0	15	5.1	0.1	1	0	0	44	16.7	16.5	0	1	17	1	0	0.9	90	300	3	685	0	2	-1	0	0	3	1	3
0	1.8	0.3	0	15	5.4	0.1	1	0	0	44	17.1	16.6	1	1	10	1	0	1	90	300	-9	-9	-9	2	-1	0	0	3	7	3
0	1.4	0.4	0	15	5.4	0.1	1	0	0	44	17.1	16.6	0	1	11	1	0	1	90	300	-9	-9	-9	2	-1	0	0	3	1	3
0	1.7	0.5	0	15	5.1	0.1	1	0	0	44	16.7	16.5	-1	1	12	1	0	1	90	300	-9	-9	-9	2	-1	0	0	3	7	3
0	1.5	0.6	0	15	5.1	0.1	1	0	0	44	16.7	16.5	1	1	13	1	0	1	90	300	-9	-9	-9	2	-1	0	0	9	7	3
0	1.6	0.8	0	15	5.1	0.1	1	0	0	44	16.7	16.5	0	1	16	1	0	0.9	90	300	-9	-9	-9	2	-1	0	0	9	1	3
1	0.5	1.1	0	15	5.4	0.1	1	0	0	44	16.4	16.2	0	1	19	1	-1	0.99	90	300	3	685	2	2	-1	0	0	3	1	3
1	1.3	1.1	0	15	5.4	0.1	1	0	0	44	16.4	16.2	1	1	20	1	0	0.99	90	300	3	685	2	2	-1	0	0	1	7	4
1	0.4	1.3	0	15	5.4	0.1	1	0	1	44	16.4	16.2	0	1	21	1	0	0.99	90	300	1	686	700	2	-1	0	0	2	7	4
1	0.4	1.3	0	15	5.4	0.1	1	0	0	44	16.4	16.2	0	1	22	1	0	0.99	90	300	2	684	20	2	-1	0	0	11	1	4
1	1.5	1.4	0	15	5.4	0.1	1	0	-1	44	16.4	16.2	0	1	22	1	0	0.99	90	300	1	686	700	2	-1	0	0	3	1	4
1	0.7	1.4	0	15	5.4	0.1	1	0	-1	44	16.4	16.2	0	1	23	1	0	0.99	90	300	1	686	700	2	-1	0	0	9	7	4
1	0.8	1.4	0	15	5.4	0.1	1	0	0	44	16.4	16.2	0	1	23	1	-1	0.99	90	300	3	685	2	2	-1	0	0	11	7	4
1	0.1	1.5	0	15	6.4	0.1	1	0	0	44	15.8	15.9	0	1	23	1	0	0.99	90	300	1	686	700	2	-1	0	0	1	7	4
1	1.4	1.5	0	15	6.4	0.1	1	0	0	44	15.8	15.9	1	1	23	1	0	0.99	90	300	4	687	10	2	-1	0	0	12	1	4
1	0.9	1.6	0	15	6.4	0.1	1	0	0	44	15.8	15.9	1	1	24	1	0	0.99	90	300	3	685	2	2	-1	0	0	9	1	4
1	1.4	1.7	0	15	6.4	0.1	1	0	0	44	15.8	15.9	1	1	24	1	0	0.99	90	300	1	686	700	2	-1	0	0	2	7	4
1	0.3	1.7	0	15	6.4	0.1	1	0	0	44	15.8	15.9	0	1	25	1	-1	0.99	90	300	2	684	20	2	-1	0	0	2	7	4
1	1.2	1.7	0	15	6.4	0.1	1	0	-1	44	15.8	15.9	-1	1	26	1	0	0.99	90	300	1	686	700	2	-1	0	0	0.5	7	4
1	0.6	1.8	0	15	6.4	0.1	1	0	0	44	15.8	15.9	-1	1	26	1	0	0.99	90	300	3	685	2	2	-1	0	0	10	7	4
1	0.5	1.8	0	15	6.4	0.1	1	0	1	44	15.8	15.9	0	1	27	1	0	0.99	90	300	4	687	10	2	-1	0	0	3	1	4
1	0.1	1.9	0	15	6.4	0.1	1	0	0	44	15.8	15.9	0	1	28	1	0	0.99	90	300	1	686	700	2	-1	0	0	10	1	4
1	1.3	1.9	0	15	6.4	0.1	1	0	-1	44	15.8	15.9	0	1	28	1	0	0.99	90	300	4	687	10	2	-1	0	0	12	1	4
1	0.7	1.9	0	15	6.4	0.1	1	0	-1	44	15.8	15.9	0	1	28	1	0	0.99	90	300	4	687	10	2	-1	0	0	9	7	4
0	2	1.2	0	15	5.4	0.1	1	0	0	44	16.4	16.2	1	1	21	1	0	0.99	90	300	-9	-9	-9	2	-1	0	0	10	7	4
0	1.7	1.6	0	15	6.4	0.1	1	0	0	44	15.8	15.9	-1	1	23	1	0	0.99	90	300	-9	-9	-9	2	-1	0	0	9	1	4
0	1.7	2	0	15	6.4	0.1	1	0	0	44	15.8	15.9	-1	1	28	1	0	0.99	90	300	-9	-9	-9	2	-1	0	0	3	1	4
																												9	7	4

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DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0.3	0	0	10	9.3	1	2.3	1	0	81	14.6	15.8	0	1	3	0	0	0.8	90	300	1	674	20	2	-1	1	1	10	12	4
1	0.5	0.4	0	10	9.3	1	2.3	1	0	81	14.6	15.8	-1	1	7	0	0	0.8	90	300	4	683	20	2	-1	1	1	10	6	4

1	0.6	0.6	0	10	11.9	1	2.3	1	1	81	14.7	15.8	-1	1	9	0	0	0.8	90	300	4	683	20	2	-1	1	1	9	6	4
1	0.2	0.7	0	10	11.9	1	2.3	1	1	81	14.7	15.8	-1	1	11	0	0	0.8	90	300	2	681	20	2	-1	1	1	2	12	4
0	0.5	0.1	0	10	9.3	1	2.3	1	0	81	14.6	15.8	0	1	4	0	0	0.8	90	300	-9	-9	-9	2	-1	1	1	9	12	4
0	0.7	0.1	0	10	9.3	1	2.3	1	0	81	14.6	15.8	0	1	4	0	0	0.8	90	300	-9	-9	-9	2	-1	1	1	9	6	4
0	0	0.1	0	10	9.3	1	2.3	1	1	81	14.6	15.8	-1	1	5	0	0	0.8	90	300	-9	-9	-9	2	-1	1	1	9	6	4
0	0.8	0.2	0	10	9.3	1	2.3	1	0	81	14.6	15.8	1	1	5	0	0	0.8	90	300	-9	-9	-9	2	-1	1	1	9	6	4
0	0.6	0.3	0	10	9.3	1	2.3	1	0	81	14.6	15.8	1	1	6	0	0	0.8	90	300	-9	-9	-9	2	-1	1	1	9	12	4
0	0.5	0.5	0	10	11.9	1	2.3	1	0	81	14.7	15.8	1	1	8	0	0	0.8	90	300	-9	-9	-9	2	-1	1	1	9	12	4
0	0.8	0.8	0	10	11.9	1	2.3	1	-1	81	14.7	15.8	1	1	9	0	0	0.8	90	300	-9	-9	-9	2	-1	1	1	3	6	4
1	0.3	1	0	10	9.1	1	2.3	1	-1	81	16.8	16.1	1	1	13	0	0	0.89	90	300	3	682	4	2	-1	1	1	2.5	7	4
1	0.1	1.1	0	10	12.4	1	2.3	1	1	81	14.7	15.8	-1	1	14	0	0	0.89	90	300	2	681	20	2	-1	1	1	2	12	4
1	0.4	1.2	0	10	12.4	1	2.3	1	1	81	14.7	15.8	-1	1	16	0	0	0.89	90	300	3	682	4	2	-1	1	1	2	12	4
1	0.5	1.5	0	10	12.4	1	2.3	1	0	81	14.8	15.7	-1	1	19	0	0	0.89	90	300	2	681	20	2	-1	1	1	3	12	4
0	0.4	0.9	0	10	9.1	1	2.3	1	-1	81	16.8	16.1	0	1	12	0	0	0.89	90	300	-9	-9	-9	2	-1	1	1	3	7	4
0	0.5	1.1	0	10	12.4	1	2.3	1	0	81	14.7	15.8	0	1	14	0	0	0.89	90	300	-9	-9	-9	2	-1	1	1	3	12	4
0	0.5	1.2	0	10	12.4	1	2.3	1	-1	81	14.7	15.8	1	1	16	0	0	0.89	90	300	-9	-9	-9	2	-1	1	1	3	7	4
0	0.4	1.3	0	10	12.4	1	2.3	1	-1	81	14.7	15.8	1	1	18	0	0	0.89	90	300	-9	-9	-9	2	-1	1	1	3	7	4
0	0.8	1.5	0	10	12.4	1	2.3	1	0	81	14.7	15.8	1	1	19	0	0	0.89	90	300	-9	-9	-9	2	-1	1	1	9	12	4
0	0.8	1.6	0	10	12.4	1	2.3	1	0	81	14.7	15.7	-1	1	20	0	0	0.89	90	300	-9	-9	-9	2	-1	1	1	9	7	4
1	0	2.8	0	10	11.3	1	2.3	1	1	83	15.1	15.6	0	1	33	0	0	0.8	90	300	1	681	20	2	-1	1	1	12	2	4
1	0.2	2.9	0	10	11.3	1	2.3	1	1	83	15.1	15.6	-1	1	34	0	1	0.8	90	300	1	681	20	2	-1	1	1	10	2	4
1	0.2	3	0	10	11.3	1	2.3	1	1	87	15.1	15.6	-1	1	35	0	1	0.8	90	300	1	681	20	2	-1	1	1	1	1	4
1	0.3	3.1	0	10	6.8	1	2	1	1	87	15.3	15.6	-1	1	36	0	1	0.8	90	300	4	683	20	2	-1	1	1	10	2	4
1	0	3.2	0	10	6.8	1	2	1	1	87	15.3	15.6	-1	1	37	0	0	0.8	90	300	1	681	20	2	-1	1	1	12	2	4
1	0.1	3.3	0	10	6.8	1	2	1	-1	87	15.3	15.6	0	1	39	0	0	0.8	90	300	2	674	20	2	-1	1	1	10	3	4
0	0.5	2.6	0	10	11.3	1	2.3	1	0	83	15.1	15.6	0	1	32	0	0	0.8	90	300	-9	-9	-9	2	-1	1	1	3	4	4
0	0.9	3.1	0	10	6.8	1	2	1	0	87	15.3	15.6	0	1	36	0	0	0.8	90	300	-9	-9	-9	2	-1	1	1	9	4	4
0	0.9	3.2	0	10	6.8	1	2	1	0	87	15.3	15.6	0	1	38	0	-1	0.8	90	300	-9	-9	-9	2	-1	1	1	9	4	4
0	0.9	3.5	0	10	6.8	1	2	1	0	87	15.3	15.6	0	1	41	0	-1	0.8	90	300	-9	-9	-9	2	-1	1	1	3	2	4
1	0.1	3.6	0	10	5.4	1	2	1	0	87	15.7	15.7	0	1	42	0	0	0.89	90	300	3	682	4	2	-1	1	1	1	5	4
1	0.3	3.9	0	10	5.4	1	2	1	1	87	15.7	15.7	-1	1	44	0	1	0.89	90	300	4	683	20	2	-1	1	1	10	10	4
1	0.2	4.1	0	10	5.8	1	1.6	1	1	87	16	15.7	-1	1	47	0	1	0.89	90	300	1	681	20	2	-1	1	1	10	10	4
1	0.1	4.3	0	10	5.8	1	1.6	1	1	85	16	15.7	1	1	48	0	0	0.89	90	300	2	674	20	2	-1	1	1	12	10	4
0	0.8	3.6	0	10	5.4	1	2	1	0	87	15.7	15.7	0	1	42	0	0	0.89	90	300	-9	-9	-9	2	-1	1	1	3	10	4
0	0.9	3.8	0	10	5.4	1	2	1	0	87	15.7	15.7	0	1	44	0	0	0.89	90	300	-9	-9	-9	2	-1	1	1	9	4	4
0	0	3.9	0	10	5.4	1	2	1	1	87	15.7	15.7	0	1	44	0	0	0.89	90	300	-9	-9	-9	2	-1	1	1	12	10	4
1	0.5	4	0	10	5.4	1	2	1	0	87	15.7	15.7	0	1	45	0	0	0.89	90	300	3	682	4	2	-1	1	1	10	7	4

CG-6580 **7 OCT 98 SEARCHES 1-2**

DET	LATRNG	TOT	PRECIP	VIS	WDSP	CLDC	HS	WHCAPS	SWDIR	REHM	AIRTP	WTTP	RELAZ	LEV	ELEV	MOONVIS	MOONRA	PHS	SPD	ALTTYPE	POS	LO	EXP	TYNO	SUBTYPE	LASER	ACLASER	RELBRG	MRB	#CREW
1	0	0.2	0	10	12.4	1	2.3	1	0	81	14.7	15.8	0	1	16	0	1	0.8	90	300	2	684	24	2	-1	0	0	12	12	4
1	0.5	0.3	0	10	12.4	1	2.3	1	0	81	14.7	15.8	0	1	16	0	0	0.8	90	300	2	684	24	2	-1	0	0	3	12	4
1	0.5	0.8	0	10	12.4	1	2.3	1	0	81	14.8	15.7	-1	1	21	0	0	0.8	90	300	3	685	4	2	-1	0	0	3	12	4
1	0.3	0.9	0	10	12.4	1	2.3	1	1	81	14.8	15.7	-1	1	22	0	0	0.8	90	300	1	686	700	2	-1	0	0	9	7	4
0	0.4	0	0	10	9.1	1	2.3	1	-1	81	16.8	16.1	1	1	13	0	0	0.8	90	300	-9	-9	-9	2	-1	0	0	3	7	4
0	0.3	0.1	0	10	9.1	1	2.3	1	-1	81	16.8	16.1	0	1	14	0	0	0.8	90	300	-9	-9	-9	2	-1	0	0	3	7	4
0	0.6	0.2	0	10	12.4	1	2.3	1	0	81	14.7	15.8	1	1	14	0	0	0.8	90	300	-9	-9	-9	2	-1	0	0	3	12	4
0	0.5	0.4	0	10	12.4	1	2.3	1	-1	81	14.7	15.8	1	1	17	0	0	0.8	90	300	-9	-9	-9	2	-1	0	0	3	7	4
0	0.4	0.5	0	10	12.4	1	2.3	1	0	81	14.7	15.8	-1	1	18	0	0	0.8	90	300	-9	-9	-9	2	-1	0	0	3	12	4
0	0.4	0.6	0	10	12.4	1	2.3	1	-1	81	14.7	15.8	1	1	19	0	0	0.8	90	300	-9	-9	-9	2	-1	0	0	3	7	4

1	0.3	1	0	10	12.4	1	2.3	1	0	83	14.8	15.7	-1	1	24	0	0	0.89	90	300	1	686	700	2	-1	0	0	9	1	4
1	0	1.2	0	10	10.3	1	2.3	1	0	83	14.9	15.6	0	1	26	0	-1	0.89	90	300	1	686	700	2	-1	0	0	12	7	4
1	0.5	1.5	0	10	10.3	1	2.3	1	1	83	14.9	15.6	-1	1	29	0	0	0.89	90	300	1	686	700	2	-1	0	0	9	7	4
0	0.5	1.1	0	10	10.3	1	2.3	1	0	83	14.9	15.6	0	1	26	0	0	0.89	90	300	-9	-9	-9	2	-1	0	0	9	1	4
0	0.6	1.2	0	10	10.3	1	2.3	1	1	83	14.9	15.6	-1	1	26	0	0	0.89	90	300	-9	-9	-9	2	-1	0	0	9	7	4
0	0.7	1.3	0	10	10.3	1	2.3	1	0	83	14.9	15.6	1	1	27	0	0	0.89	90	300	-9	-9	-9	2	-1	0	0	9	1	4
0	0.5	1.6	0	10	10.3	1	2.3	1	0	83	14.9	15.6	1	1	30	0	0	0.89	90	300	-9	-9	-9	2	-1	0	0	9	1	4
0	0.5	1.7	0	10	10.3	1	2.3	1	1	83	14.9	15.6	-1	1	32	0	0	0.89	90	300	-9	-9	-9	2	-1	0	0	9	7	4

APPENDIX B

RECOMMENDED METHOD OF COMPUTING SWEEP WIDTHS FOR HELICOPTER NVG SEARCH

The sweep widths listed in this appendix are based on over 2450 measured field-test detection opportunities conducted over several years using HH-60 and HH-65 SRUs employing 3-and 4-person search teams wearing NVGs. The base targets were 18- and 21-foot Carolina™ skiffs, 6-person Switlik™ life rafts, and PIW mannequins wearing PFDs. **The life raft and PIW targets employed retro-reflective tape.**

The skiffs were unlighted and had no special reflective materials. The 21-ft skiff differed from the 18-ft skiff in more than just length. Specifically, the 21-ft skiff was a taller target because of fore and aft Bimini-like tops. This configuration difference provided more reflective surface area for natural light and produced a larger measured sweep width. In the tables below, the base sweep widths for the 12- to 20-ft boat target is based on the 18-ft skiff values. The 20- to 25-ft boat target sweep widths are based on the 21 ft skiff values.

The 6-person life-raft target had a full canopy. This has proven in daylight sweep width experiments to cause a larger sweep width than life rafts without a canopy. The assumed reason is larger apparent visual size due to the canopy height.

The PIW w/ PFD targets benefit enormously from the presence of a few square inches of retro-reflective material on the PFDs. Without retro-reflective material the PIW sweep width will probably not exceed 0.1 nmi except in extremely calm conditions with high natural lighting. It is estimated that PIWs without PFDs and without artificial lights have sweep width values between 0.01 and 0.09 nmi under good to excellent search conditions.

The solid angle subtended at the eye and/or NVG of any target is related to both target range and the apparent target area as seen from a random viewing angle. The extrapolations in the base sweep width table are scaled up and down from measured values based on smoothed ratios of sweep widths taken from the daylight visual sweep width model in the National Search and Rescue Manual. Anecdotal evidence from data collected in the mid 1990s suggests that unlighted targets are seldom detected at lateral ranges in excess of 2 nmi regardless of size. This puts an apparent upper bound on NVG sweep width at 4 nmi for unlighted targets.

Measured base sweep width values are calculated using a lateral range curve mathematical model with environmental factors set at the following values:

MV*PHS	0.5 (50 percent of moon face showing and moon is visible)
CLDC	0.5 (50 percent of sky covered)
VIS	15 nmi
Hs	3 ft
WHCAPS	1 (few)
FATIGUE	1 hour into the NVG search

The correction factors were based on ratios of sweep widths produced by changing one variable at a time away from the central values listed above. The changes used to produce the sweep width ratios used the following settings.

	High	Low
MV*PHS	0.9	0.1
CLDC	0.9	0.1
VIS	n/a	1 and 0.4 nmi
Hs	5 feet	1 ft
WHCAPS	2 (many)	0 (none)
FATIGUE	5 hours and 3 hours	n/a

Measured Base Sweep Widths (nmi) from Field Test Data

	Illuminated	Non-Illuminated
18-ft skiff	**0.8**	**0.8**
21-ft skiff	**1.2**	**1.1**
6-Person raft w/ retro-reflective material	**1.0**	**0.9**
PIW w/ PFD w/ retro-reflective material	**0.6**	**0.1**

Base Sweep Widths

	Search Type	
	Illuminated (W nmi)	**Non-Illuminated** (W nmi)
Boats		
(no lights or retro-reflective material)		
Target Length		
8 to 12 ft	0.4	0.4
13-19 ft (based on 18-ft skiff data)	0.8	0.8
20 to 25 ft (based on 21-ft skiff data)	1.2	1.1
26 to 35 ft	1.8	1.6
36 to 45 ft	2.2	2.1
46 to 55 ft	2.5	2.3
Rafts		
(Canopies with retro-reflective material)		
1 or 2-person	0.7	0.6
4-person	0.9	0.8
6-person (based on measured data)	1.0	0.9
8-person	1.1	1.0
10-person	1.2	1.1
15-person	1.4	1.3
20-person	1.6	1.4
25-person	1.7	1.5
PIW w/ PFD	0.6	0.1
PIW w/o PFD or retro-reflective material (W values are estimates)	0.05	0.01

NVG SEARCH
Sweep Width Worksheet
(Correction Factors Times a Base Sweep Width)

Select the <u>Base Sweep Width</u> for Boat, Raft, or PIW target and fill in the lines below. Some correction factors depend on Illuminated vs. Non-Illuminated Search. PIW correction factors are different from Boat/Raft correction factors. Illuminated search is an NVG search using one or two helicopter landing lights, or where available, an IR source of illumination, during search. PIW search with illumination always improves sweep width. Base sweep widths always assume a 4-person NVG search. If a situation arises where only 3 people are searching with NVGs, the Boat/Raft correction factor is 0.8 and the PIW correction factor is 0.9. This correction factor should be multiplied by the sweep width computed below to obtain the corrected sweep width for 3-person NVG search.

Target Type _______________ **Illuminated Base Sweep Width** _______

Non-Illuminated Base Sweep Width _______

Select the six correction factors for the appropriate search type from the <u>Environmental Situation Correction Factor Table</u> and fill in the lines below. If a factor is unknown and/or cannot be estimated, assume it is 1. All correction factors, with the exception of Hs and WHCAPS, are multiplicative and should be treated as parts of a product (five factors times a base sweep width). Hs and WHCAPS are combined into one factor that is the average of the two.

Illuminated Correction Factor Calculation:

MV*PHS	CLDC	VIS	Hs	WHCAPS	FATIGUE		**Total Product**
____*	_____*	___*	((___+	_____)/2)*	____	=	_______

Non-Illuminated Correction Factor Calculation:

MV*PHS	CLDC	VIS	Hs	WHCAPS	FATIGUE		**Total Product**
____*	_____*	___*	((___+	_____)/2)*	____	=	_______

Multiply appropriate correction factor times the base sweep width to obtain sweep width.

Illuminated Sweep Width _______

Non-Illuminated Sweep Width _______

ENVIRONMENTAL SITUATION CORRECTION FACTORS

Boat/Raft	Illuminated	Non-Illuminated
Moon Visible * Phase (MV*PHS)*		
>75%	1.15	1.32
25% to 75%	1	1
Moon not Visible or <25%	0.88	0.76
Cloud Cover: (CLDC)		
<25%	1.27	1.27
25% to 75%	1	1
>75%	0.82	0.82
Visibility (Vis)		
2 to 15 nmi	1	1
>0.5 to <2 nmi	0.83	0.83
<=0.5 nmi	0.57	0.57
Significant Waveheight (Hs)		
0 to <3 ft.	1.28	1.28
3 ft.	1	1
>3 to 6 ft.	0.74	0.74
Whitecaps (WHCAPS)		
None	1.13	1.13
Few	1	1
Many	0.87	0.87
Fatigue Factor (FATIGUE)		
Rested (0 to 3 hr NVG search)	1	1
Fatigued (> 3 to 4 hrs on NVGs)	0.9	0.9
Very Fatigued (>4 to 6 hrs)	0.8	0.8

*Moon Visible is zero when the moon is below the horizon or is not visible wearing NVGs. MV (MOONVIS) = 1 when the moon is visible through NVGs. Phase (PHS) is the decimal fraction (0.0 to 1.0) of the moon face showing. The daily pages of the Nautical Almanac are a good source of this information. The product of these two terms is a proxy for the available natural lighting condition. The product must be a number between 0.0 and 1.0.

ENVIRONMENTAL SITUATION CORRECTION FACTORS

PIWs w/ PFD	Illuminated	Non-Illuminated
Moon Visible * Phase (MV*PHS)*		
>75%	1.1	1.4
25% to 75%	1	1
Moon not Visible or <25%	0.9	0.7
Cloud Cover: (CLDC)		
<25%	1.1	1.1
25% to 75%	1	1
>75%	0.9	0.9
Visibility (Vis)		
2 to 15 nmi	1	1
>0.5 to <2 nmi	0.8	0.7
<=0.5 nmi	0.6	0.3
Significant Waveheight (Hs)		
0 to <3 ft.	1.2	1.7
3 ft.	1	1
>3 to 6 ft.	0.8	0.5
Whitecaps (WHCAPS)		
None	1.1	1.3
Few	1	1
Many	0.9	0.8
Fatigue Factor (FATIGUE)		
Rested (0 to 3 hr NVG search)	1	1
Fatigued/Very Fatigued (> 3 to 6 hrs)	0.9	0.9

*Moon Visible is zero when the moon is below the horizon or is not visible wearing NVGs. MV (MOONVIS) = 1 when the moon is visible through NVGs. Phase (PHS) is the decimal fraction (0.0 to 1.0) of the moon face showing. The daily pages of the Nautical Almanac are a good source of this information. The product of these two terms is a proxy for the available natural lighting condition. The product must be a number between 0.0 and 1.0.