Team 2
Angel Bermudez, Dustin Lawton, Han Zhang

Test 1: Airplane Straight-and-Level Flight
Fly an airplane on a constant course at a constant altitude.

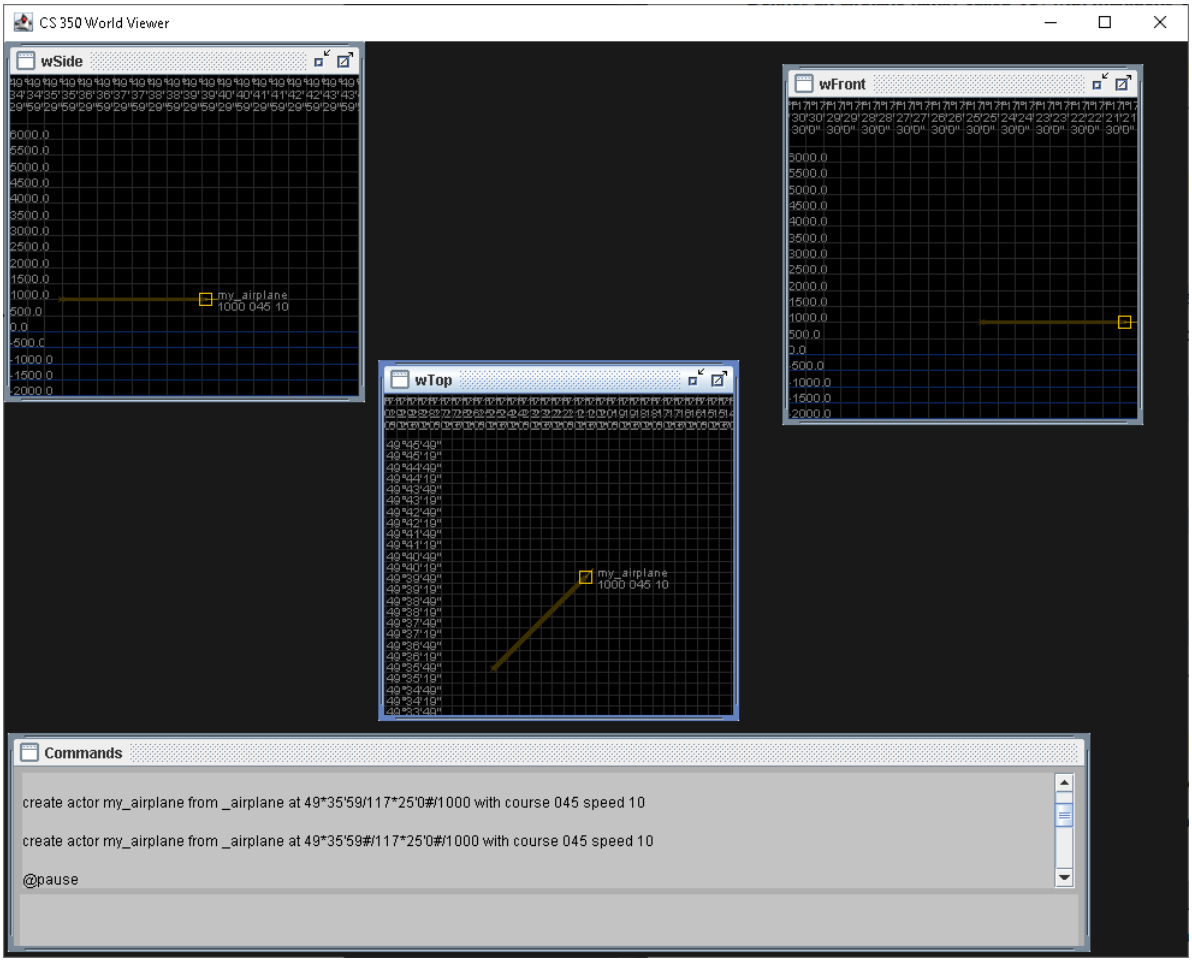
1. This test will verify that the airplane is able to maintain its course at a specified altitude and that it does not change overtime.

2. `my_airplane` will be facing 045 at altitude 1000 and speed 10 and continue its path until the test is closed

3.
```
define munition bomb my_bomb;
define airplane _airplane with munition (my_bomb);
create actor my_airplane from _airplane at
49*35'59#/117*25'0#/1000 with course 045 speed 10;
@pause
```

4. The expected results for the test should include the altitude, course, and speed remaining the same for the duration of the test.

5.



6.

event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizo	speed_vertic
1	7558	264.53	airplane	my_airplane	49.59972222	117.4166667	1000	45	10	0
2	7559	264.565	airplane	my_airplane	49.59982043	117.4165685	1000	45	10	0
3	7560	264.6	airplane	my_airplane	49.59991864	117.4164702	1000	45	10	0
4	7561	264.635	airplane	my_airplane	49.60001685	117.416372	1000	45	10	0
5	7562	264.67	airplane	my_airplane	49.60011506	117.4162738	1000	45	10	0
246	7803	273.105	airplane	my_airplane	49.62378349	117.3926054	1000	45	10	0
247	7804	273.14	airplane	my_airplane	49.6238817	117.3925072	1000	45	10	0
248	7805	273.175	airplane	my_airplane	49.62397991	117.392409	1000	45	10	0
249	7806	273.21	airplane	my_airplane	49.62407812	117.3923108	1000	45	10	0
250	7807	273.245	airplane	my_airplane	49.62417633	117.3922126	1000	45	10	0
251	7808	273.28	airplane	my_airplane	49.62427454	117.3921143	1000	45	10	0
252	7809	273.315	airplane	my_airplane	49.62437275	117.3920161	1000	45	10	0
253	7810	273.35	airplane	my_airplane	49.62447096	117.3919179	1000	45	10	0
698	8255	288.925	airplane	my_airplane	49.66817409	117.3482148	1000	45	10	0
699	8256	288.96	airplane	my_airplane	49.6682723	117.3481166	1000	45	10	0
700	8257	288.995	airplane	my_airplane	49.66837051	117.3480184	1000	45	10	0
701	8258	289.03	airplane	my_airplane	49.66846871	117.3479202	1000	45	10	0
702	8259	289.065	airplane	my_airplane	49.66856692	117.347822	1000	45	10	0

7.

The test results are what was expected.

8.

This test could be extended to ship and submarines if altitude is modified.

Test 3: Airplane 360-Degree Turn

1.
This test will test the turning of an aircraft turning clockwise and verify it can perform a complete 360-degree turn.

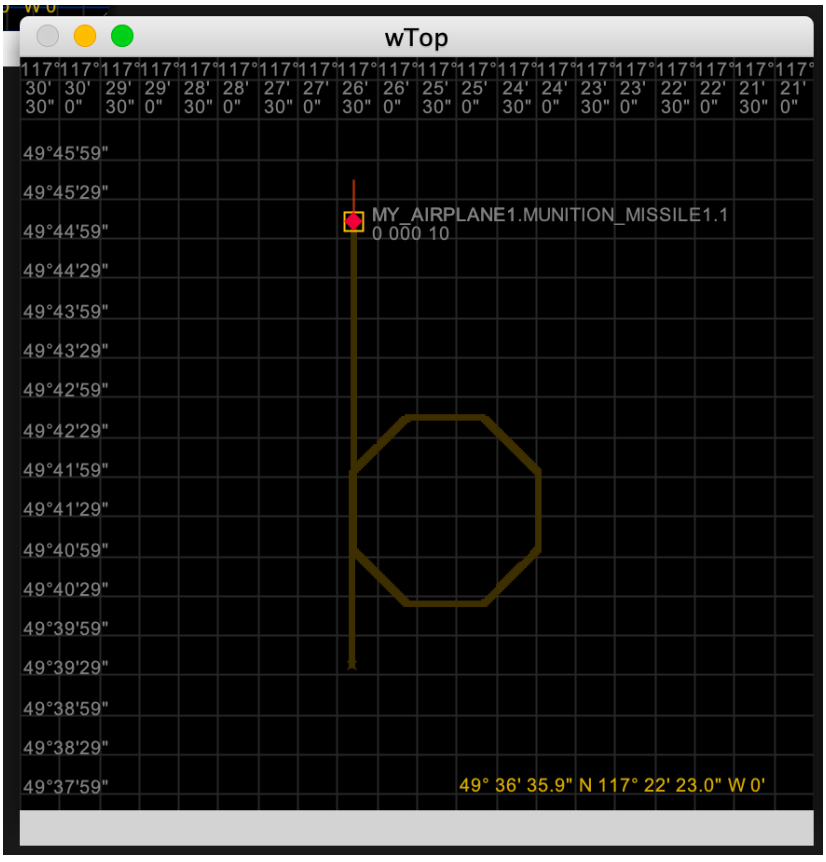
2.
MY_AIRPLANE1 starts facing north with an initial speed of 10.

3.
```
define sensor radar FUZE_RADAR1 with field of view 30 power 50
sensitivity 10
define sensor thermal FUZE_THERMAL1 with field of view 45
sensitivity 0.1

define munition missile MUNITION_MISSILE1 with sensor FUZE_RADAR1
fuze FUZE_THERMAL1 arming distance 1.0

define airplane ACTOR_AIRPLANE1 with munition (MUNITION_MISSILE1)

create actor MY_AIRPLANE1 from ACTOR_AIRPLANE1 at
49*39'37.9#/117*26'19.0#/0 with course 0 speed 10

set MY_AIRPLANE1 load munition MUNITION_MISSILE1

@wait 10

set MY_AIRPLANE1 course 45

@wait 4

set MY_AIRPLANE1 course 90

@wait 4

set MY_AIRPLANE1 course 135

@wait 4

set MY_AIRPLANE1 course 180

@wait 4
```

```
set MY_AIRPLANE1 course 225

@wait 4

set MY_AIRPLANE1 course 270

@wait 4

set MY_AIRPLANE1 course 315

@wait 4

set MY_AIRPLANE1 course 0
```

4.
`MY_AIRPLANE1` will travel north for 10 seconds and then turn clockwise 45 degrees. Every 4 seconds 45 degrees will be added to the previous heading until `MY_AIRPLANE1` is facing north again.

5.



6.

event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deployed	armed
1	238	8.33	airplane	MY_AIRPLANE1	49.66052778	117.4386111	0	0	10	0		
2	238	8.33	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66052778	117.4386111	0	0	10	0		
3	239	8.365	airplane	MY_AIRPLANE1	49.66066667	117.4386111	0	0	10	0		
4	239	8.365	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66066667	117.4386111	0	0	10	0	FALSE	FALSE
5	239	8.365	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66066667	117.4386111	0	0	10	0		
6	239	8.365	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66066667	117.4386111	0	0	10	0		
7	240	8.4	airplane	MY_AIRPLANE1	49.66080556	117.4386111	0	0	10	0		
8	240	8.4	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66080556	117.4386111	0	0	10	0	FALSE	FALSE
9	240	8.4	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66080556	117.4386111	0	0	10	0		
10	240	8.4	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66080556	117.4386111	0	0	10	0		
11	241	8.435	airplane	MY_AIRPLANE1	49.66094444	117.4386111	0	0	10	0		

At time 8.33 MY_AIRPLANE1 starts traveling north in event 1.

command	event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deployed	armed
course MY_AIRPLANE1 45.0													
	1147	525	18.375	airplane	MY_AIRPLANE1	49.70038889	117.4386111	0	0	10	0		
	1148	525	18.375	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.70038889	117.4386111	0	0	10	0	FALSE	FALSE
	1149	525	18.375	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.70038889	117.4386111	0	0	10	0		
	1150	525	18.375	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.70038889	117.4386111	0	0	10	0		
	1151	526	18.41	airplane	MY_AIRPLANE1	49.70052778	117.4386111	0	10	10	0		
	1152	526	18.41	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.70052778	117.4386111	0	10	10	0	FALSE	FALSE
	1153	526	18.41	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.70052778	117.4386111	0	10	10	0		
	1154	526	18.41	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.70052778	117.4386111	0	10	10	0		
	1155	527	18.445	airplane	MY_AIRPLANE1	49.70066456	117.438587	0	20	10	0		
	1156	527	18.445	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.70066456	117.438587	0	20	10	0	FALSE	FALSE
	1157	527	18.445	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.70066456	117.438587	0	20	10	0		
	1158	527	18.445	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.70066456	117.438587	0	20	10	0		
	1159	528	18.48	airplane	MY_AIRPLANE1	49.70079507	117.4385395	0	30	10	0		
	1160	528	18.48	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.70079507	117.4385395	0	30	10	0	FALSE	FALSE

At time 18.375 MY_AIRPLANE1 starts changing its heading to 45 degrees in event 1147, 10 seconds after MY_AIRPLANE1 started traveling.

course MY_AIRPLANE1 90.0												
1611	641	22.435	airplane	MY_AIRPLANE1	49.71200929	117.427575	0	45	10	0		
1612	641	22.435	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.71200929	117.427575	0	45	10	0	FALSE	FALSE
1613	641	22.435	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.71200929	117.427575	0	45	10	0		
1614	641	22.435	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.71200929	117.427575	0	45	10	0		
1615	642	22.47	airplane	MY_AIRPLANE1	49.7121075	117.4274768	0	55	10	0		
1616	642	22.47	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.7121075	117.4274768	0	55	10	0	FALSE	FALSE
1617	642	22.47	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.7121075	117.4274768	0	55	10	0		
1618	642	22.47	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.7121075	117.4274768	0	55	10	0		
1619	643	22.505	airplane	MY_AIRPLANE1	49.71218716	117.427363	0	65	10	0		
1620	643	22.505	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.71218716	117.427363	0	65	10	0	FALSE	FALSE
1621	643	22.505	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.71218716	117.427363	0	65	10	0		
1622	643	22.505	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.71218716	117.427363	0	65	10	0		
1623	644	22.54	airplane	MY_AIRPLANE1	49.71224586	117.4272371	0	75	10	0		
1624	644	22.54	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.71224586	117.4272371	0	75	10	0	FALSE	FALSE

At time 22.435 MY_AIRPLANE1 starts changing its heading to 90 degrees in event 1611, 4 seconds after MY_AIRPLANE1's last turn.

event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deployed	armed	target_id	power_raw	power_atten
4412	1341	46.935	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.68484031	117.4384705	0	355	10	0	FALSE	FALSE		1.5	1.5
4413	1341	46.935	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.68484031	117.4384705	0	355	10	0				25	25
4414	1341	46.935	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.68484031	117.4384705	0	355	10	0					
4415	1342	46.97	airplane	MY_AIRPLANE1	49.68497867	117.4384826	0	0	10	0					
4416	1342	46.97	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.68497867	117.4384826	0	0	10	0	FALSE	FALSE		1.5	1.5
4417	1342	46.97	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.68497867	117.4384826	0	0	10	0				25	25
4418	1342	46.97	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.68497867	117.4384826	0	0	10	0					
4419	1343	47.005	airplane	MY_AIRPLANE1	49.68511756	117.4384826	0	0	10	0					
4420	1343	47.005	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.68511756	117.4384826	0	0	10	0	FALSE	FALSE		1.5	1.5
4421	1343	47.005	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.68511756	117.4384826	0	0	10	0				25	25
4422	1343	47.005	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.68511756	117.4384826	0	0	10	0					
4423	1344	47.04	airplane	MY_AIRPLANE1	49.68525645	117.4384826	0	0	10	0					
4424	1344	47.04	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.68525645	117.4384826	0	0	10	0	FALSE	FALSE		1.5	1.5

After turning every 4 seconds multiple times, at time 46.935 MY_AIRPLANE1 is has now completed a 360-degree clockwise turn.

7. The actual results are in accordance with the expected results, MY_AIRPLANE1 turned 45 degrees clockwise 10 seconds after it started traveling and every other 4 seconds, MY_AIRPLANE1 changed its course by an additional 45 degrees until it was facing northing again completing a 360 degree clockwise turn in an octagon shaped path.

8. MY_AIRPLANE1 should vary its speed and turn degree interval as it progresses to complete a 360-degree clockwise turn.

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Test 4: Airplane Climbing 360-Degree Turn, Maximum-Performance

1.
This test will test the performance capabilities of an aircraft by performing a 360-degree turn clockwise in an octagon shape while climbing in altitude at every other leg of the octagon shape.

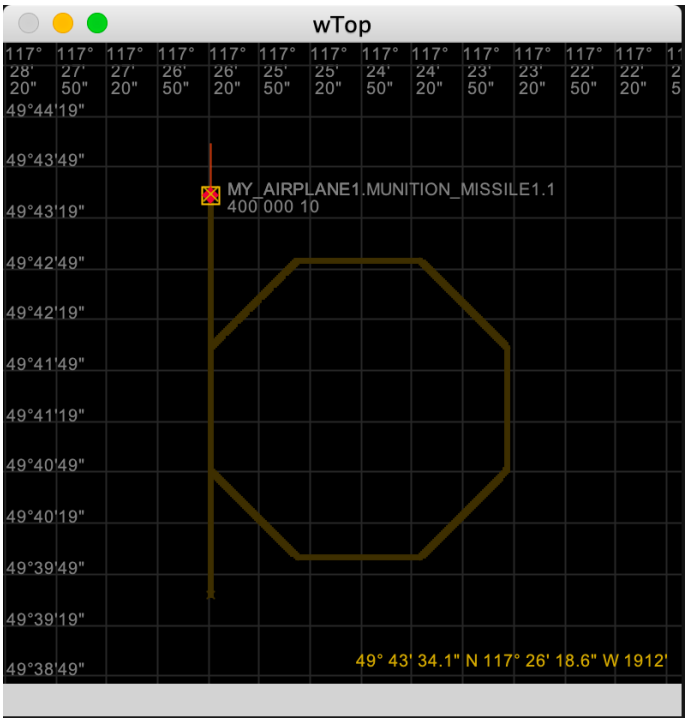
2.
MY_AIRPLANE1 starts facing north with an initial speed of 10 at an altitude of 0 feet.

3.
```
define sensor radar FUZE_RADAR1 with field of view 30 power 50
sensitivity 10
define sensor thermal FUZE_THERMAL1 with field of view 45
sensitivity 0.1

define munition missile MUNITION_MISSILE1 with sensor FUZE_RADAR1
fuze FUZE_THERMAL1 arming distance 1.0

define airplane ACTOR_AIRPLANE1 with munition (MUNITION_MISSILE1)

create actor MY_AIRPLANE1 from ACTOR_AIRPLANE1 at
49*39'37.9#/117*26'19.0#/0 with course 0 speed 10

set MY_AIRPLANE1 load munition MUNITION_MISSILE1

@wait 10

set MY_AIRPLANE1 course 45
set MY_AIRPLANE1 altitude 100
@wait 5

set MY_AIRPLANE1 course 90

@wait 5

set MY_AIRPLANE1 course 135
set MY_AIRPLANE1 altitude 200


@wait 5

set MY_AIRPLANE1 course 180
```

```
@wait 5

set MY_AIRPLANE1 course 225
set MY_AIRPLANE1 altitude 300

@wait 5

set MY_AIRPLANE1 course 270

@wait 5

set MY_AIRPLANE1 course 315
set MY_AIRPLANE1 altitude 400

@wait 5

set MY_AIRPLANE1 course 0
```

4. `MY_AIRPLANE1` will travel north for 10 seconds and then turn clockwise 45 degrees. Every 5 seconds 45 degrees will be added to the previous heading until `MY_AIRPLANE1` is facing north again. At every other interval of adding 45 degrees to the course of `MY_AIRPLANE1`, `MY_AIRPLANE1` will change increase its altitude by 100 degrees.

5.



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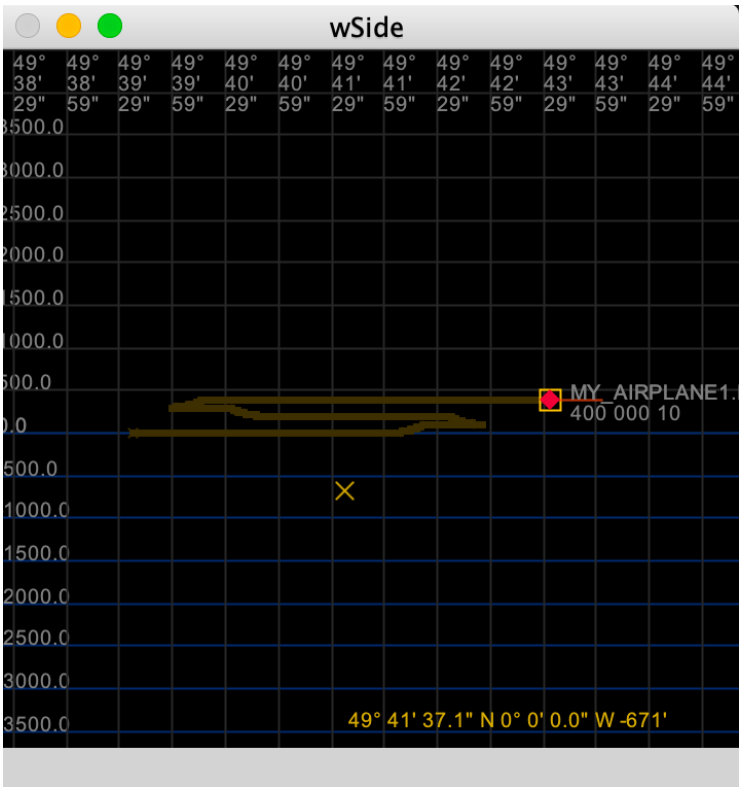
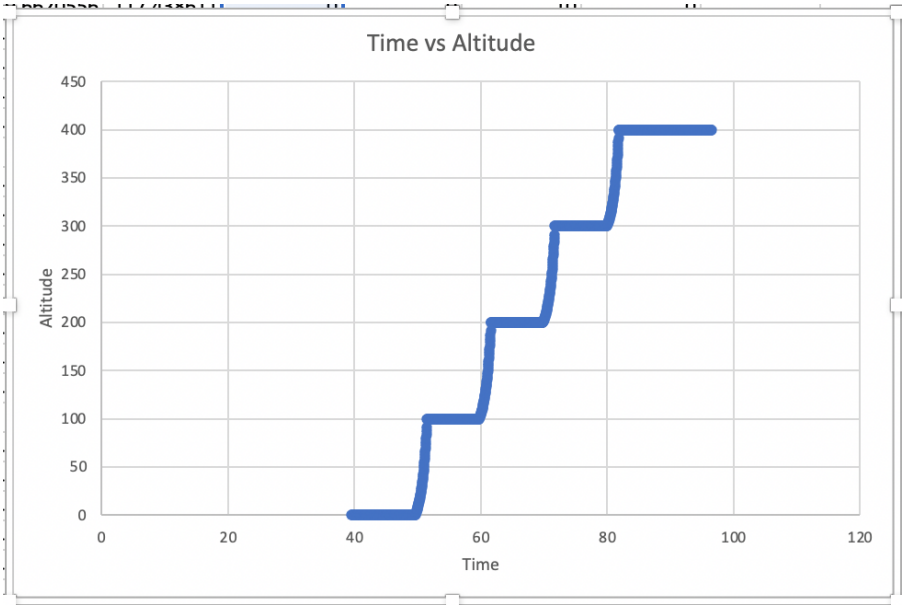
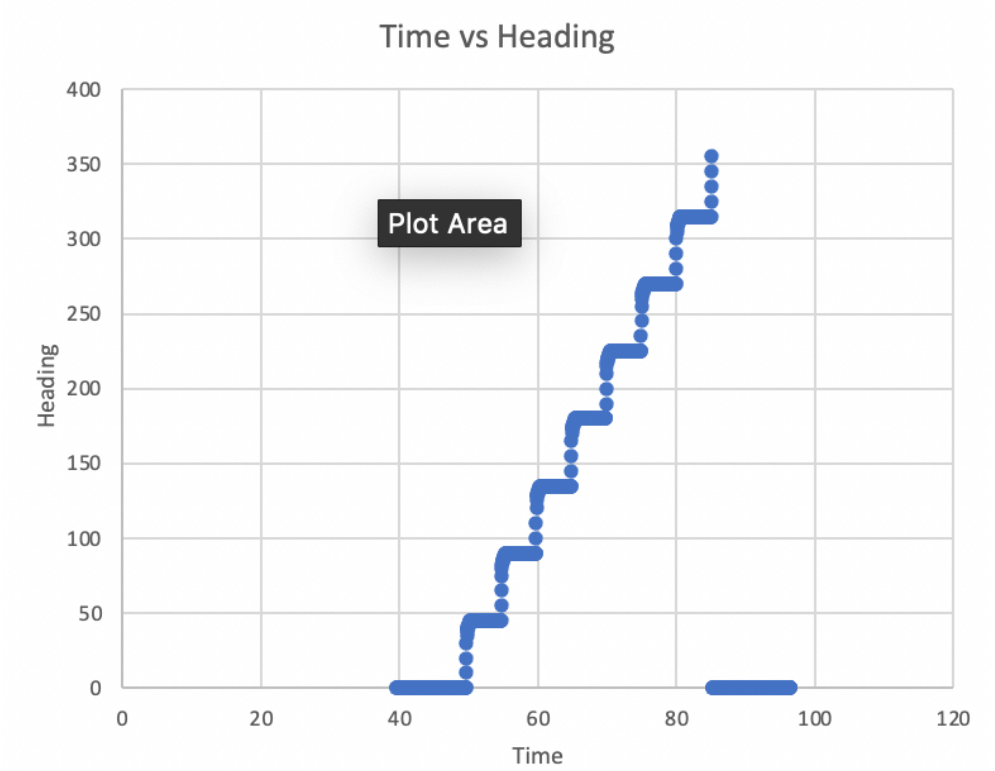






6.

command	event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical
	1149	1417	49.595	airplane	MY_AIRPLANE1	49.70052778	117.4386111	0	10	10	0
	1153	1418	49.63	airplane	MY_AIRPLANE1	49.70066456	117.438587	0.52	20	10	0
	1157	1419	49.665	airplane	MY_AIRPLANE1	49.70079507	117.4385395	1.0608	30	10	0
	1161	1420	49.7	airplane	MY_AIRPLANE1	49.70091535	117.43847	1.623232	35	10	0
	1165	1421	49.735	airplane	MY_AIRPLANE1	49.70102912	117.4383904	2.20816128	37.5	10	0
	1169	1422	49.77	airplane	MY_AIRPLANE1	49.70113931	117.4383058	2.816487731	38.75	10	0
	1173	1423	49.805	airplane	MY_AIRPLANE1	49.70124763	117.4382189	3.44914724	39.375	10	0
	1177	1424	49.84	airplane	MY_AIRPLANE1	49.70135499	117.4381308	4.10711313	39.875	10	0
	1181	1425	49.875	airplane	MY_AIRPLANE1	49.70146158	117.4380417	4.791397655	40.375	10	0
	1185	1426	49.91	airplane	MY_AIRPLANE1	49.70156739	117.4379518	5.503053561	40.875	10	0
	1189	1427	49.945	airplane	MY_AIRPLANE1	49.70167241	117.4378609	6.243175704	41.375	10	0
	1193	1428	49.98	airplane	MY_AIRPLANE1	49.70177663	117.4377691	7.012902732	41.875	10	0
	1197	1429	50.015	airplane	MY_AIRPLANE1	49.70188005	117.4376764	7.813418841	42.375	10	0
	1201	1430	50.05	airplane	MY_AIRPLANE1	49.70198265	117.4375828	8.645955595	42.875	10	0
	1205	1431	50.085	airplane	MY_AIRPLANE1	49.70208443	117.4374883	9.511793819	43.375	10	0
	1209	1432	50.12	airplane	MY_AIRPLANE1	49.70218539	117.4373929	10.41226557	43.875	10	0
	1213	1433	50.155	airplane	MY_AIRPLANE1	49.70228551	117.4372966	11.34875619	44.375	10	0
	1217	1434	50.19	airplane	MY_AIRPLANE1	49.70238478	117.4371995	12.32270644	45	10	0
	1221	1435	50.225	airplane	MY_AIRPLANE1	49.70248299	117.4371013	13.3356147	45	10	0
	1225	1436	50.26	airplane	MY_AIRPLANE1	49.7025812	117.4370031	14.38903929	45	10	0

At event 1153 `MY_AIRPLANE1` started changing its course by 45 degrees and started increasing its altitude.

1721	1560	54.6	airplane	MY_AIRPLANE1	49.71475915	117.4248251	100	45	10	0
1725	1561	54.635	airplane	MY_AIRPLANE1	49.71485736	117.4247269	100	45	10	0
1729	1562	54.67	airplane	MY_AIRPLANE1	49.71495557	117.4246287	100	55	10	0
1733	1563	54.705	airplane	MY_AIRPLANE1	49.71503523	117.4245149	100	65	10	0
1737	1564	54.74	airplane	MY_AIRPLANE1	49.71509393	117.424389	100	75	10	0
1741	1565	54.775	airplane	MY_AIRPLANE1	49.71512988	117.4242549	100	80	10	0
1745	1566	54.81	airplane	MY_AIRPLANE1	49.71515399	117.4241181	100	82.5	10	0
1749	1567	54.845	airplane	MY_AIRPLANE1	49.71517212	117.4239804	100	83.75	10	0
1753	1568	54.88	airplane	MY_AIRPLANE1	49.71518724	117.4238423	100	84.375	10	0
1757	1569	54.915	airplane	MY_AIRPLANE1	49.71520086	117.4237041	100	84.875	10	0
1761	1570	54.95	airplane	MY_AIRPLANE1	49.71521326	117.4235658	100	85.375	10	0
1765	1571	54.985	airplane	MY_AIRPLANE1	49.71522446	117.4234274	100	85.875	10	0
1769	1572	55.02	airplane	MY_AIRPLANE1	49.71523445	117.4232888	100	86.375	10	0
1773	1573	55.055	airplane	MY_AIRPLANE1	49.71524323	117.4231502	100	86.875	10	0

At event 1729 MY_AIRPLANE1 started changing its course to 90 degrees while its altitude remained the same.

event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical
2301	1705	59.675	airplane	MY_AIRPLANE1	49.7152705	117.4048174	100	90	10	0
2305	1706	59.71	airplane	MY_AIRPLANE1	49.7152705	117.4046785	100	100	10	0
2309	1707	59.745	airplane	MY_AIRPLANE1	49.71524638	117.4045418	100.52	110	10	0
2313	1708	59.78	airplane	MY_AIRPLANE1	49.71519888	117.4044112	101.0608	120	10	0
2317	1709	59.815	airplane	MY_AIRPLANE1	49.71512943	117.404291	101.623232	125	10	0
2321	1710	59.85	airplane	MY_AIRPLANE1	49.71504977	117.4041772	102.2081613	127.5	10	0
2325	1711	59.885	airplane	MY_AIRPLANE1	49.71496522	117.404067	102.8164877	128.75	10	0
2329	1712	59.92	airplane	MY_AIRPLANE1	49.71487829	117.4039587	103.4491472	129.375	10	0
2333	1713	59.955	airplane	MY_AIRPLANE1	49.71479018	117.4038513	104.1071131	129.875	10	0
2337	1714	59.99	airplane	MY_AIRPLANE1	49.71470113	117.4037447	104.7913977	130.375	10	0
2341	1715	60.025	airplane	MY_AIRPLANE1	49.71461116	117.4036389	105.5030536	130.875	10	0
2345	1716	60.06	airplane	MY_AIRPLANE1	49.71452027	117.4035339	106.2431757	131.375	10	0
2349	1717	60.095	airplane	MY_AIRPLANE1	49.71442847	117.4034297	107.0129027	131.875	10	0
2353	1718	60.13	airplane	MY_AIRPLANE1	49.71433576	117.4033263	107.8134188	132.375	10	0
2357	1719	60.165	airplane	MY_AIRPLANE1	49.71424215	117.4032237	108.6459556	132.875	10	0
2361	1720	60.2	airplane	MY_AIRPLANE1	49.71414765	117.4031219	109.5117938	133.375	10	0
2365	1721	60.235	airplane	MY_AIRPLANE1	49.71405226	117.4030209	110.4122656	133.875	10	0
2369	1722	60.27	airplane	MY_AIRPLANE1	49.713956	117.4029208	111.3487562	134.375	10	0

At event 2301 MY_AIRPLANE1 started changing its course to 135 degrees and also started increasing its altitude.

7.
The actual results are in accordance with the expected results, MY_AIRPLANE1 turned 45 degrees clockwise 10 seconds after it started traveling and every other 5 seconds, MY_AIRPLANE1 changed its course by an additional 45 degrees until it was facing northing again completing a 360 degree clockwise turn in an octagon shaped path. The altitude of MY_AIRPLANE1 increased every other change in course as expected.

8.
To further test the capabilities of an aircraft, the speed should increase on the intervals when an aircraft is not increasing its altitude

Test 8: Bomb Drop, High Speed
Drop a bomb from a high-speed airplane at 8,000 feet onto a ship.

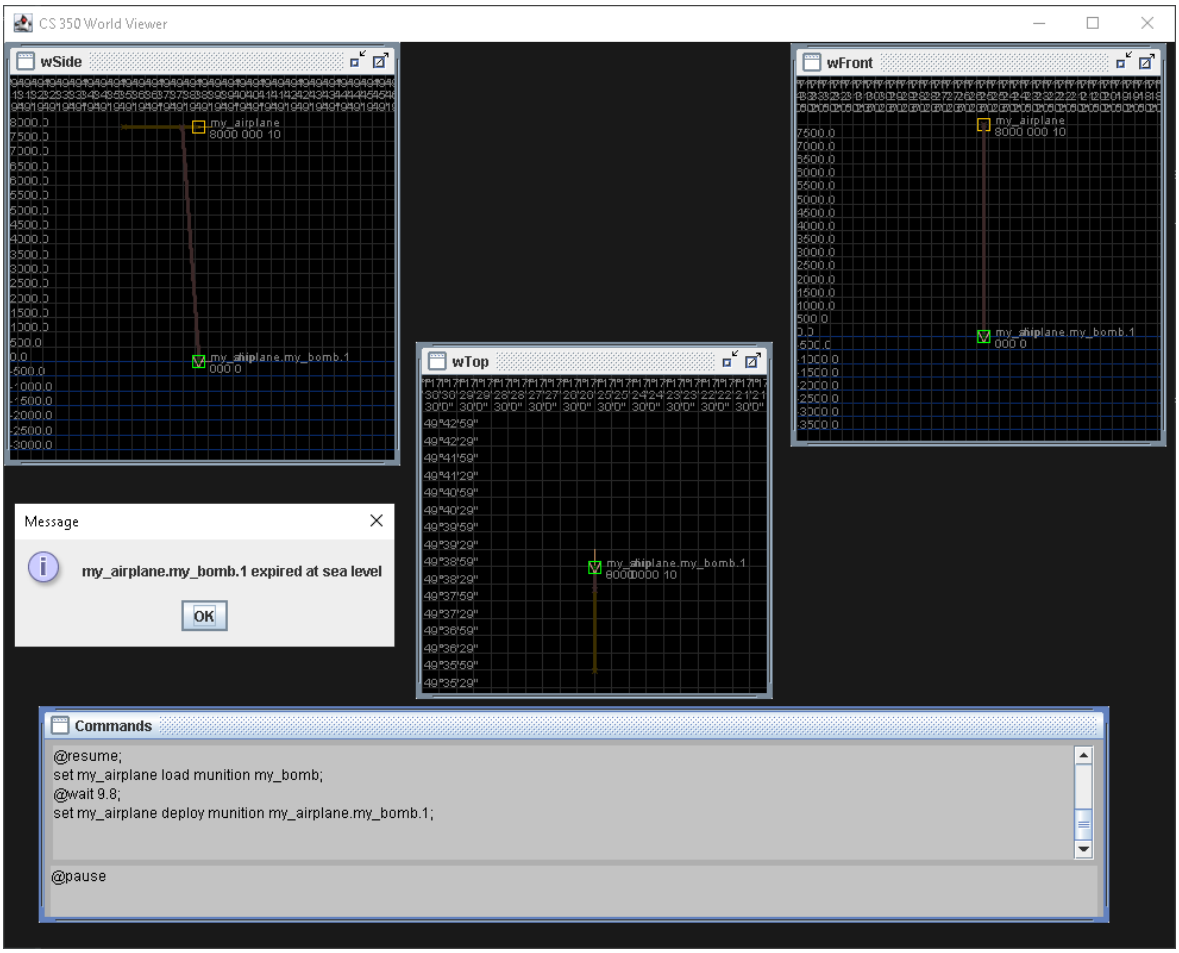
1.
Testing the function and use of a bomb as well as loading and deploying a munition from a plane with the bomb hitting a target at high speeds.

2.
Define and create a bomb, fuze, depth charge, ship, and airplane. The ship will be a stationary target and as the plane flies over the ship, at high speed, it will drop its payload onto the ship.

3.
```
@pause;
define munition bomb my_bomb;
define airplane _airplane with munition (my_bomb);
define sensor depth _depth with trigger depth -500;
define munition depth_charge _depthcharge with fuze _depth;
define ship _ship with munitions ( _depthcharge);
create actor my_ship from _ship at 49*38'59#/117*25'30#/0 with
course 0 speed 0;
create actor my_airplane from _airplane at
49*35'59#/117*25'30#/8000  with course 000 speed 10;
@resume;
set my_airplane load munition my_bomb;
@wait 9.8;
set my_airplane deploy munition my_airplane.my_bomb.1;
```

4.
The expected results will be of the airplane to fly over the ship, drop its bomb, and the bomb to hit the ship.

5.



6.

deploy my_airplane.my_bomb.1

	841	975	34.125	airplane	my_airpla	49.63861	117.425	8000	0	10	0	
	842	975	34.125	ship	my_ship	49.64972	117.425	0	0	0	0	
	843	975	34.125	bomb	my_airpla	49.63861	117.425	8000	0	10	0	TRUE
	844	976	34.16	airplane	my_airpla	49.63875	117.425	8000	0	10	0	
	845	976	34.16	ship	my_ship	49.64972	117.425	0	0	0	0	
	846	976	34.16	bomb	my_airpla	49.63875	117.425	7900	0	10	0	TRUE

Here is when the bomb is occupying the same space as the ship after being deployed.

1081	1055	36.925	airplane	my_airpla	49.64972	117.425	8000	0	10	0	
1082	1055	36.925	ship	my_ship	49.64972	117.425	0	0	0	0	
1083	1055	36.925	bomb	my_airpla	49.64972	117.425	0	0	10	0	TRUE

7.

The results were expected. I was expecting a different message then expired at sea level

8.

You could also deploy different munitions from the plane to the ship. You could extend the test to include smart bombs in the future if your bomb's gained sensor functions and guidance hardware.

Test 9: Bomb Drop, Low Speed, Hit
Drop a bomb from a low-speed airplane at 8,000 feet onto a ship.

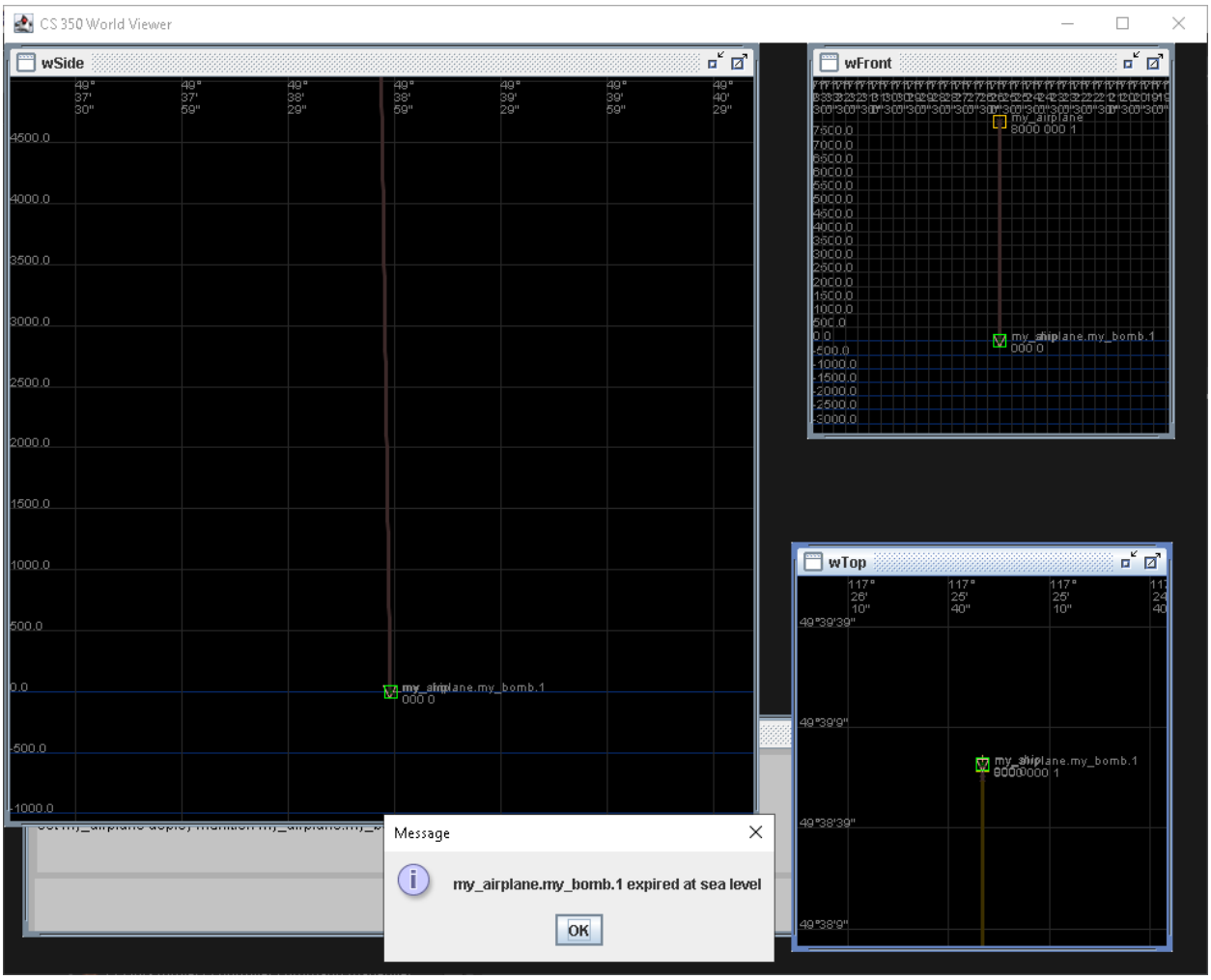
1.
Testing the function and use of a bomb as well as loading and deploying a munition from a plane with the bomb hitting a target at low speeds.

2.
Define and create a bomb, fuze, depth charge, ship, and airplane. The ship will be a stationary target and as the plane flies over the ship, at low speed, it will drop its payload onto the ship.

3.
```
@pause;
define munition bomb my_bomb;
define airplane _airplane with munition (my_bomb);
define sensor depth _depth with trigger depth -500;
define munition depth_charge _depthcharge with fuze _depth;
define ship _ship with munitions ( _depthcharge);
create actor my_ship from _ship at 49*38'59#/117*25'30#/0 with
course 0 speed 0;
create actor my_airplane from _airplane at
49*37'59#/117*25'30#/8000  with course 000 speed 1;
@resume;
set my_airplane load munition my_bomb;
@wait 39.175;
set my_airplane deploy munition my_airplane.my_bomb.1;
```

4. The expected results are for the bomb to be dopped from the plane at a low speed onto a ship.

5.



6.

deploy my_airplane.my_bomb.1

	3361	1760	61.6	airplane	my_airpla	49.64861	117.425	8000	0	1	0	
	3362	1760	61.6	ship	my_ship	49.64972	117.425	0	0	0	0	
	3363	1760	61.6	bomb	my_airpla	49.64861	117.425	8000	0	1	0	TRUE
	3364	1761	61.635	airplane	my_airpla	49.64862	117.425	8000	0	1	0	
	3365	1761	61.635	ship	my_ship	49.64972	117.425	0	0	0	0	
	3366	1761	61.635	bomb	my_airpla	49.64862	117.425	7900	0	1	0	TRUE
	3367	1762	61.67	airplane	my_airpla	49.64864	117.425	8000	0	1	0	
	3368	1762	61.67	ship	my_ship	49.64972	117.425	0	0	0	0	
	3369	1762	61.67	bomb	my_airpla	49.64864	117.425	7800	0	1	0	TRUE
	3370	1763	61.705	airplane	my_airpla	49.64865	117.425	8000	0	1	0	
	3371	1763	61.705	ship	my_ship	49.64972	117.425	0	0	0	0	
	3372	1763	61.705	bomb	my_airpla	49.64865	117.425	7700	0	1	0	TRUE

point of impact

	3601	1840	64.4	airplane	my_airpla	49.64972	117.425	8000	0	1	0	
	3602	1840	64.4	ship	my_ship	49.64972	117.425	0	0	0	0	
	3603	1840	64.4	bomb	my_airpla	49.64972	117.425	0	0	1	0	TRUE

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7.
The results were expected. I was expecting a different message then expired at sea level.

8.
This test could be extended that could be used to deploy other objects from a plane

Test 10: Bomb Drop, Low Speed, Miss
Drop a bomb from a low-speed airplane at 8,000 feet into the water.

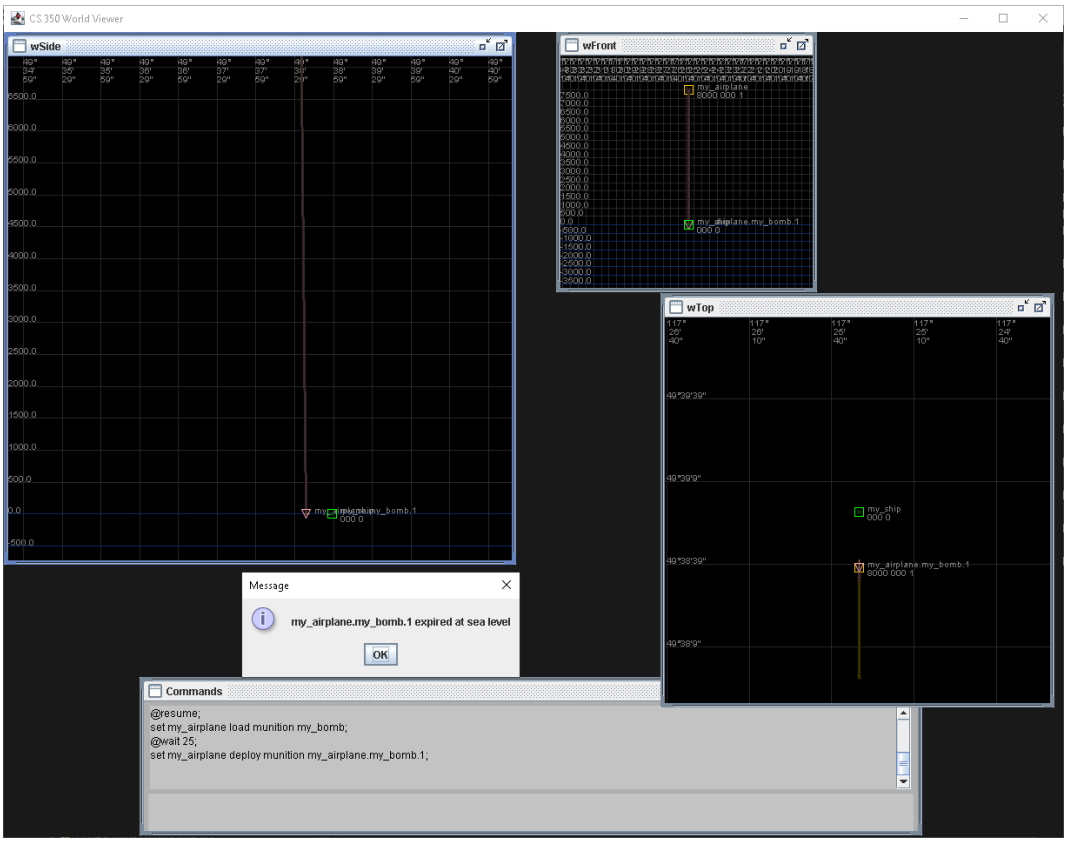
1.
Test the dropping of a munition from a plane at low speed into the water.

2.
Define and create a bomb, fuze, depth charge, ship, and airplane. The ship will be a stationary target and as the plane flies over the ship, at low speed, it will drop its payload and miss the ship.

3.
```
@pause;
define munition bomb my_bomb;
define airplane _airplane with munition (my_bomb);
define sensor depth _depth with trigger depth -500;
define munition depth_charge _depthcharge with fuze _depth;
define ship _ship with munitions ( _depthcharge);
create actor my_ship from _ship at 49*38'59#/117*25'30#/0 with
course 0 speed 0;
create actor my_airplane from _airplane at
49*37'59#/117*25'30#/8000  with course 000 speed 1;
@resume;
set my_airplane load munition my_bomb;
@wait 25;
set my_airplane deploy munition my_airplane.my_bomb.1;
```

4.
Expected result is a plane dropping a bomb at a low speed into the water.

5.



6.

deploy my_airplane.my_bomb.1

2146	852	29.82	airplane	my_airpla	49.64299	117.425	8000	0	1	0	
2147	852	29.82	ship	my_ship	49.64972	117.425	0	0	0	0	
2148	852	29.82	bomb	my_airpla	49.64299	117.425	8000	0	1	0	TRUE
2149	853	29.855	airplane	my_airpla	49.643	117.425	8000	0	1	0	
2150	853	29.855	ship	my_ship	49.64972	117.425	0	0	0	0	
2151	853	29.855	bomb	my_airpla	49.643	117.425	7900	0	1	0	TRUE
2152	854	29.89	airplane	my_airpla	49.64301	117.425	8000	0	1	0	
2153	854	29.89	ship	my_ship	49.64972	117.425	0	0	0	0	
2154	854	29.89	bomb	my_airpla	49.64301	117.425	7800	0	1	0	TRUE

Point of impact bomb misses the ship.

2381	930	32.55	ship	my_ship	49.64972	117.425	0	0	0	0	
2382	930	32.55	bomb	my_airpla	49.64407	117.425	200	0	1	0	TRUE
2383	931	32.585	airplane	my_airpla	49.64408	117.425	8000	0	1	0	
2384	931	32.585	ship	my_ship	49.64972	117.425	0	0	0	0	
2385	931	32.585	bomb	my_airpla	49.64408	117.425	100	0	1	0	TRUE
2386	932	32.62	airplane	my_airpla	49.6441	117.425	8000	0	1	0	
2387	932	32.62	ship	my_ship	49.64972	117.425	0	0	0	0	
2388	932	32.62	bomb	my_airpla	49.6441	117.425	0	0	1	0	TRUE

7.

Results are what was expected.

8.

This test could be used to deploy a torpedo from an airplane.

Test 13: Depth Charge, Depth Fuze
Drop a depth charge with a depth fuze.

1.
Test deploying a depth charge with a depth fuze from a ship and it exploding at a specific depth.

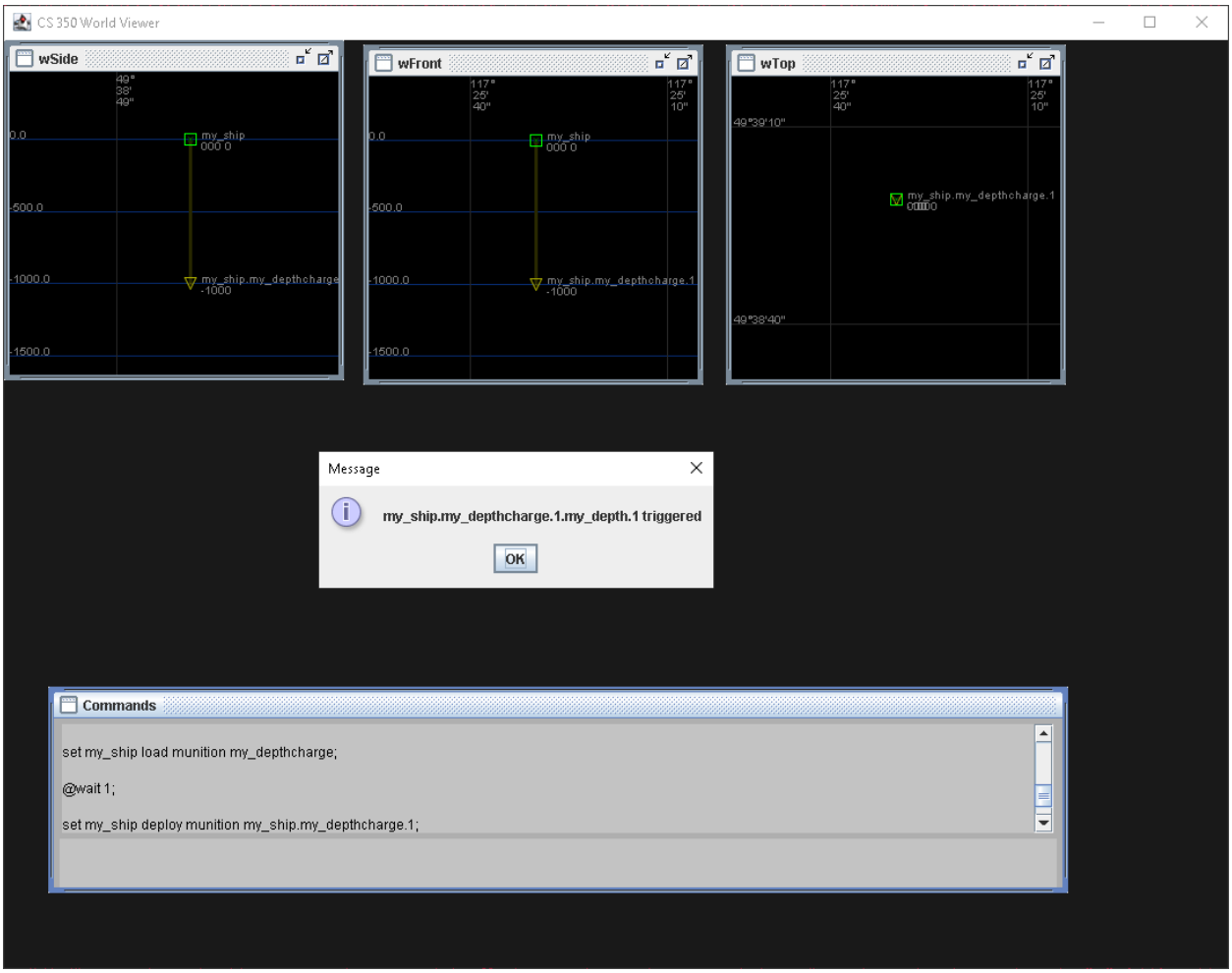
2.
Define a depth sensor at -1000 units, define a depth charge with the depth fuze, define a ship that has a munition that is a depth charge, load and deploy the depth charge from the ship.

3.
```
define sensor depth my_depth with trigger depth -1000;
define munition depth_charge my_depthcharge with fuze my_depth;
define ship actor_ship with munition (my_depthcharge);

create actor my_ship from actor_ship at 49*38'59#/117*25'30#/0
with course 0 speed 0;
set my_ship load munition my_depthcharge;
@wait 1;
set my_ship deploy munition my_ship.my_depthcharge.1;
```

4.
The expected result is for the ship to drop the depth charge and the depth charge to expire at -1000

5.



6.

6865	4188	146.58	depth-cha	my_ship.r	49.64972	117.425	-950	0	0	0	TRUE
6866	4188	146.58	depth	my_ship.r	49.64972	117.425	-950	0	0	0	
6867	4189	146.615	ship	my_ship	49.64972	117.425	0	0	0	0	
6868	4189	146.615	depth-cha	my_ship.r	49.64972	117.425	-960	0	0	0	TRUE
6869	4189	146.615	depth	my_ship.r	49.64972	117.425	-960	0	0	0	
6870	4190	146.65	ship	my_ship	49.64972	117.425	0	0	0	0	
6871	4190	146.65	depth-cha	my_ship.r	49.64972	117.425	-970	0	0	0	TRUE
6872	4190	146.65	depth	my_ship.r	49.64972	117.425	-970	0	0	0	
6873	4191	146.685	ship	my_ship	49.64972	117.425	0	0	0	0	
6874	4191	146.685	depth-cha	my_ship.r	49.64972	117.425	-980	0	0	0	TRUE
6875	4191	146.685	depth	my_ship.r	49.64972	117.425	-980	0	0	0	
6876	4192	146.72	ship	my_ship	49.64972	117.425	0	0	0	0	
6877	4192	146.72	depth-cha	my_ship.r	49.64972	117.425	-990	0	0	0	TRUE
6878	4192	146.72	depth	my_ship.r	49.64972	117.425	-990	0	0	0	
6879	4193	146.755	ship	my_ship	49.64972	117.425	0	0	0	0	
6880	4193	146.755	depth-cha	my_ship.r	49.64972	117.425	-1000	0	0	0	TRUE
6881	4194	146.79	ship	my_ship	49.64972	117.425	0	0	0	0	
6882	4195	146.825	ship	my_ship	49.64972	117.425	0	0	0	0	
6883	4196	146.86	ship	my_ship	49.64972	117.425	0	0	0	0	

7.
Results were expected.

8.
The test could be further used to test different fuzes for depth charges.

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Test 17: Missile, Radar Sensor, Distance Fuze

1.
This test will verify that a missile can be fired from a ship towards an aircraft and guide itself using a radar sensor and a distance fuze to detonate after the missile has covered a certain distance.

2.

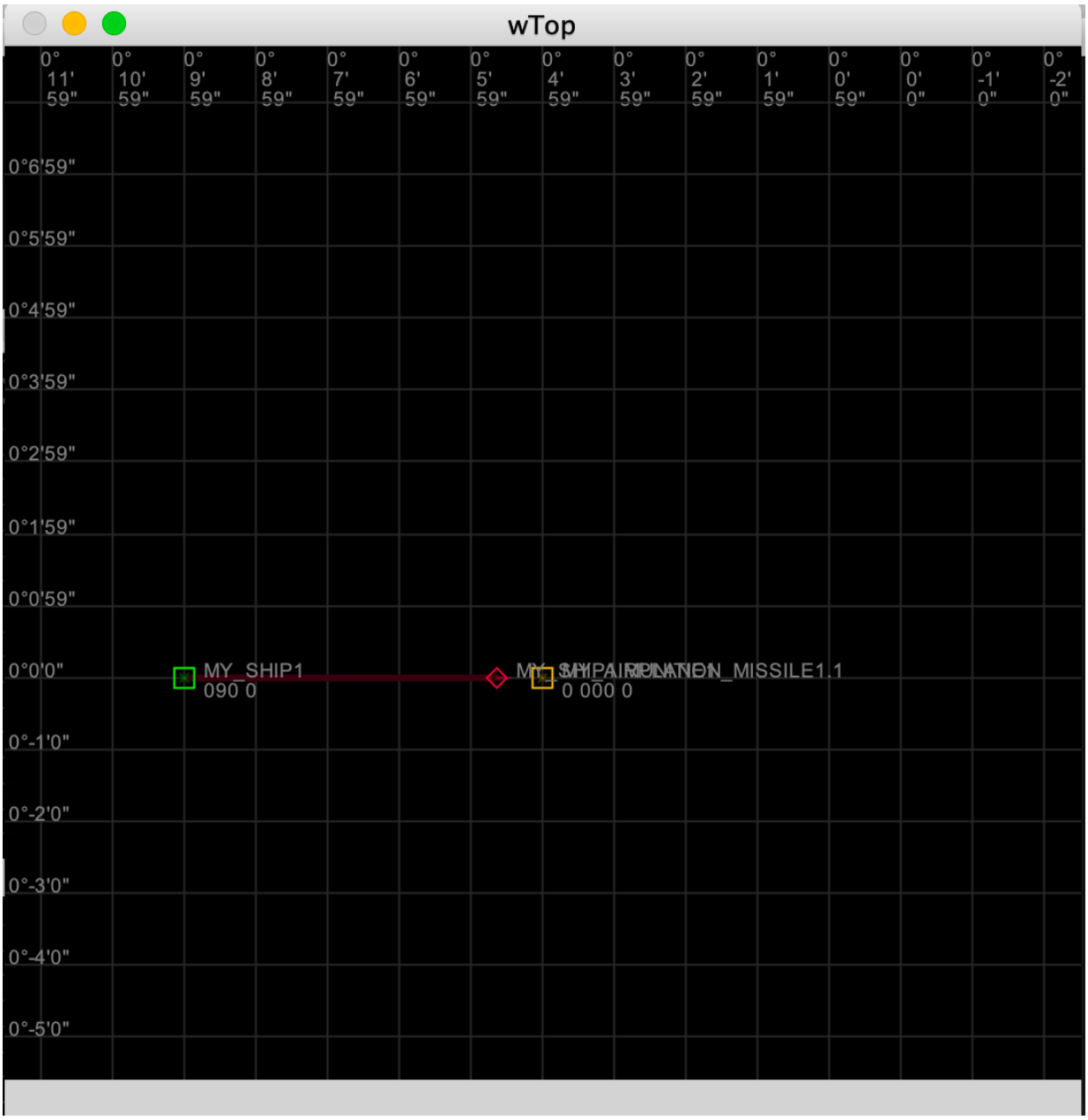
A ship MY_SHIP1 starts off at a stationary location facing east, with no speed. MY_SHIP1 is equipped with a missile that has a radar sensor and a distance fuze. An aircraft MY_AIRPLANE1 starts off with a speed of 0 with a longitude of 5 minutes away from MY_SHIP1 facing north.

3.

```
delete window wTop
create window wTop top view with 350 (0*0'0# 0*15'0# 0*1'0.0#)
(0*5'0# 0*15'0# 0*1'0.0#)

define sensor radar SENSOR_RADAR1 with field of view 30 power 50
sensitivity 10
define sensor distance FUZE_DISTANCE1 with trigger distance 5.0

define munition missile MUNITION_MISSILE1 with sensor
SENSOR_RADAR1 fuze FUZE_DISTANCE1 arming distance 1

define ship ACTOR_SHIP1 with munition (MUNITION_MISSILE1)

define airplane ACTOR_AIRPLANE1 with munition (MUNITION_MISSILE1)

create actor MY_SHIP1 from ACTOR_SHIP1 at 0*0'0.0#/0*10'0.0#/0
with course 90 speed 0

create actor MY_AIRPLANE1 from ACTOR_AIRPLANE1 at
0*0'0.0#/0*5'0.0#/0 with course 0 speed 0

set MY_SHIP1 load munition MUNITION_MISSILE1

@wait 10

set MY_SHIP1 deploy munition MY_SHIP1.MUNITION_MISSILE1.1
```

4. After 10 seconds, `MY_SHIP1` will fire `MY_SHIP1.MUNITION_MISSILE1.1` and will travel directly east towards the direction of `MY_AIRPLANE1`. Once the missile has covered 5 nautical miles, the missile will detonate.

5.



6.

event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deployed	armed	target_id	power_raw	power_attenuated	distance_elapsed	time_elapse	target_beari
1	218	7.63	airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0								
2	218	7.63	ship	MY_SHIP1	0	0.166666667	0	90	0	0								
3	218	7.63	missile	MY_SHIP1.MUNITION_MISSILE1.1	0	0.166666667	0	90	0	0	FALSE	FALSE						
4	218	7.63	distance	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_DISTANCE1.2	0	0.166666667	0	90	0	0								0
5	218	7.63	radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0	0.166666667	0	90	0	0				0	0			
6	219	7.665	airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0								

MY_SHIP1.MUNITION_MISSILE1.1 starts of at longitude 0.166667 in event 3

event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deployed	armed	target_id	power_raw	power_attenuated	distance_elapsed	time_elapse	target_
3611	940	32.9	airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0								
3612	940	32.9	ship	MY_SHIP1	0	0.166666667	0	90	0	0								
3613	940	32.9	missile	MY_SHIP1.MUNITION_MISSILE1.1	0	0.094166667	0	90	4	0	TRUE	TRUE						
3614	940	32.9	distance	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_DISTANCE1.2	0	0.094166667	0	90	4	0						5.005893		
3615	940	32.9	radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0	0.094166667	0	90	4	0			MY_AIRPLANE1	50	60.15986481			
3616	941	32.935	airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0								
3617	941	32.935	ship	MY_SHIP1	0	0.166666667	0	90	0	0								
3618	941	32.935	missile	MY_SHIP1.MUNITION_MISSILE1.1	0	0.094	0	90	4	0	TRUE	TRUE						
3619	942	32.97	airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0								
3620	942	32.97	ship	MY_SHIP1	0	0.166666667	0	90	0	0								
3621	943	33.005	airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0								
3622	943	33.005	ship	MY_SHIP1	0	0.166666667	0	90	0	0								
3623	944	33.04	airplane	MY_AIRPLANE1	0	0.083333333	0	0	0	0								

MY_SHIP.MUNITION_MISSILE1.1 detonates at a longitude of 0.094 in event 3618

It can be observed that the missile did travel east as expected and then detonated after it covered about 0.072667 (0.166667 - 0.94) in longitude.

7. The actual results are inconsistent with the expected results, MY_SHIP.MUNITION_MISSILE1 detonated after about 4.36 nautical miles, the expected distance was 5 nautical. However, MY_SHIP.MUNITION_MISSILE1 did travel about 5.02 regular miles.

8. Altitude should vary between 2 different actors during a test.

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Test 20: Missile, Radar Sensor, Time Fuze

1.
This test will verify that a missile can be fired from a ship towards an aircraft and guide itself using a radar sensor and a time fuze to detonate after the missile has been deployed for a certain amount of time.

2.

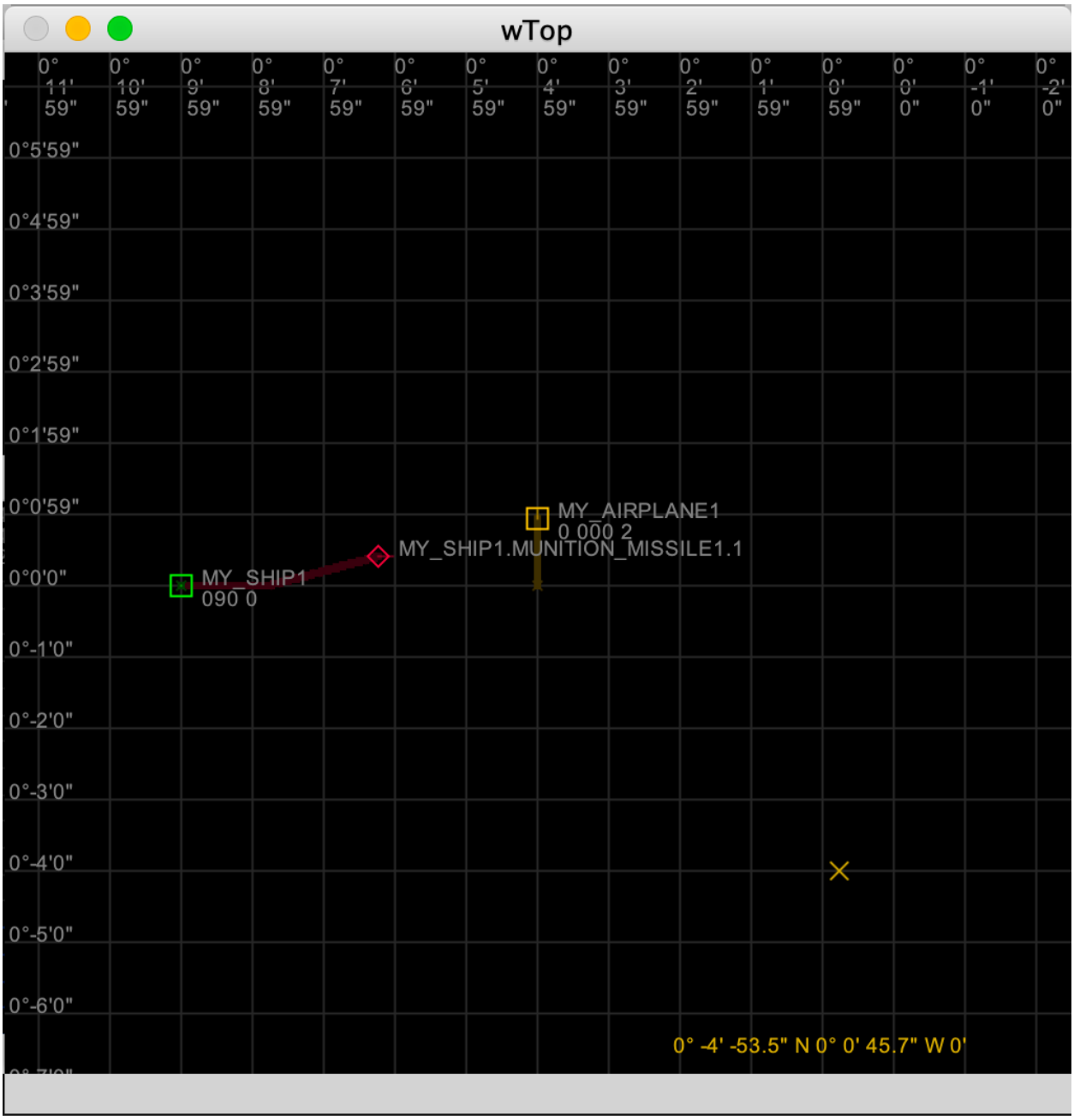
A ship `MY_SHIP1` starts off at a stationary location facing east, with no speed. `MY_SHIP1` is equipped with a missile that has a radar sensor and a distance fuze. An aircraft `MY_AIRPLANE1` starts off with a speed of 0 with a longitude of 5 minutes away from `MY_SHIP1` facing north.

3.

```
delete window wTop
create window wTop top view with 350 (0*0'0# 0*15'0# 0*1'0.0#)
(0*5'0# 0*15'0# 0*1'0.0#)

define sensor radar SENSOR_RADAR1 with field of view 30 power 50
sensitivity 10
define sensor time FUZE_TIME1 with trigger time 10.0

define munition missile MUNITION_MISSILE1 with sensor
SENSOR_RADAR1 fuze FUZE_TIME1 arming distance 1

define ship ACTOR_SHIP1 with munition (MUNITION_MISSILE1)

define airplane ACTOR_AIRPLANE1 with munition (MUNITION_MISSILE1)

create actor MY_SHIP1 from ACTOR_SHIP1 at 0*0'0.0#/0*10'0.0#/0
with course 90 speed 0

create actor MY_AIRPLANE1 from ACTOR_AIRPLANE1 at
0*0'0.0#/0*5'0.0#/0 with course 0 speed 2

set MY_SHIP1 load munition MUNITION_MISSILE1

@wait 10
set MY_SHIP1 deploy munition MY_SHIP1.MUNITION_MISSILE1.1
```

4. After 10 seconds, MY_SHIP1 will fire `MY_SHIP1.MUNITION_MISSILE1.1` and will travel towards the direction of `MY_AIRPLANE1`. Once the missile has been deployed for 10 seconds it will detonate.

5.



6.

command	event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deployed	armed	target_id	power_raw	power_attenuated	distance_elapsed	time_elapsed
deploy MY_SHIP1.MUNITION_MISSILE1.1																		
	1434	697	24.395	airplane	MY_AIRPLANE1	0.007972222	0.083333333	0	0	2	0							
	1435	697	24.395	ship	MY_SHIP1	0	0.166666667	0	90	0	0							
	1436	697	24.395	missile	MY_SHIP1.MUNITION_MISSILE1.1	0	0.166666667	0	90	0	0	TRUE	FALSE					
	1437	697	24.395	time	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_TIME1.2	0	0.166666667	0	90	0	0							0
	1438	697	24.395	radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0	0.166666667	0	90	0	0				0	0		
	1439	698	24.43	airplane	MY_AIRPLANE1	0.008	0.083333333	0	0	2	0							
	1440	698	24.43	ship	MY_SHIP1	0	0.166666667	0	90	0	0							
	1441	698	24.43	missile	MY_SHIP1.MUNITION_MISSILE1.1	0	0.166611111	0	90	4	0	TRUE	FALSE					
	1442	698	24.43	time	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_TIME1.2	0	0.166611111	0	90	4	0							0.035
	1443	698	24.43	radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0	0.166611111	0	90	4	0				49.77087709	7.754439463		

MY_SHIP1.MUNITION_MISSILE1.1 is deployed at time 24.395 at event number 1436

event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deployed	armed	target_id	power_raw	power_attenuated	distance_elapsed	time_elapsed	target_bearing
2861	982	34.37	missile	MY_SHIP1.MUNITION_MISSILE1.1	0.00675	0.121086435	0	90	4	0	TRUE	TRUE						
2862	982	34.37	time	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_TIME1.2	0.00675	0.121086435	0	90	4	0							9.975	
2863	982	34.37	radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0.00675	0.121086435	0	90	4	0			MY_AIRPLANE1	48.59644552	16.30742251			
2864	983	34.405	airplane	MY_AIRPLANE1	0.015916667	0.083333333	0	0	2	0								
2865	983	34.405	ship	MY_SHIP1	0	0.166666667	0	90	0	0								
2866	983	34.405	missile	MY_SHIP1.MUNITION_MISSILE1.1	0.00675	0.120919768	0	60	4	0	TRUE	TRUE						
2867	983	34.405	time	MY_SHIP1.MUNITION_MISSILE1.1.FUZE_TIME1.2	0.00675	0.120919768	0	60	4	0							10.01	
2868	983	34.405	radar	MY_SHIP1.MUNITION_MISSILE1.1.SENSOR_RADAR1.1	0.00675	0.120919768	0	60	4	0			MY_AIRPLANE1	48.57624199	16.36611665			
2869	984	34.44	airplane	MY_AIRPLANE1	0.015944444	0.083333333	0	0	2	0								
2870	984	34.44	ship	MY_SHIP1	0	0.166666667	0	90	0	0								
2871	984	34.44	missile	MY_SHIP1.MUNITION_MISSILE1.1	0.006833333	0.120775431	0	90	4	0	TRUE	TRUE						
2872	985	34.475	airplane	MY_AIRPLANE1	0.015972222	0.083333333	0	0	2	0								
2873	985	34.475	ship	MY_SHIP1	0	0.166666667	0	90	0	0								
2874	986	34.51	airplane	MY_AIRPLANE1	0.016	0.083333333	0	0	2	0								

MY_SHIP1.MUNITION_MISSILE1.1 detonates at time 34.44 at event number 2871 towards the direction of MY_AIRPLANE1.

7. The results are as expected, 10 seconds after the missile was deployed, it detonated.

8. Multiple missiles should be launched at different times with different fuze timers and verify that the desired time for each missile is consistent with the time it takes to detonate.

Team 2
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Test 21: Missile, Thermal Sensor, Radar Fuze

1.
This test verifies that a missile equipped with a thermal sensor and radar fuze can be fired from an airplane towards a ship.

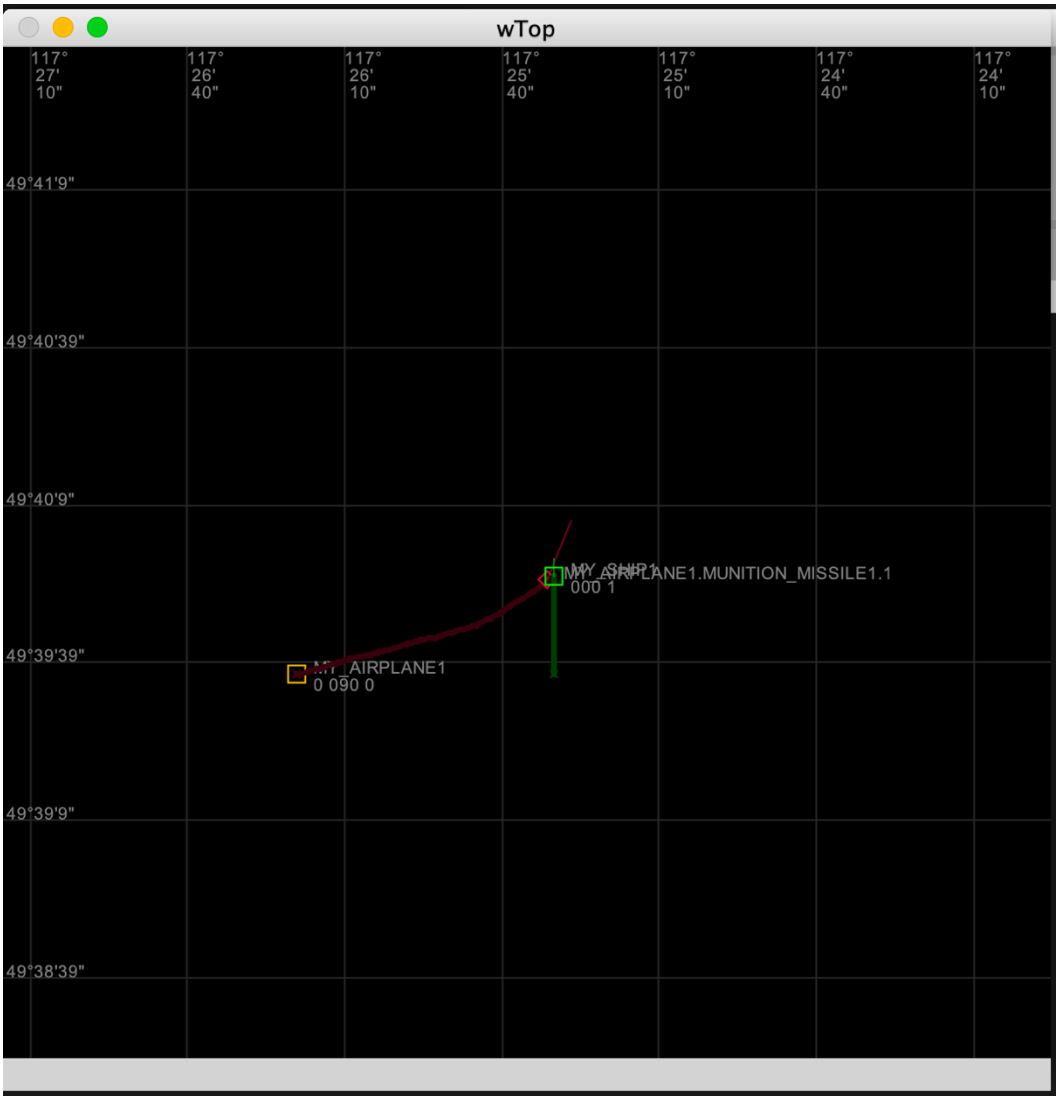
2.
An airplane MY_AIRPLANE1 starts off at a stationary location facing east, with no speed. MY_AIRPLANE1 is equipped with a missile that has a thermal sensor and a radar fuze sensor. A ship MY_SHIP1 starts off with a speed of 1 with a longitude of 30 seconds away from MY_AIRPLANE1 facing north.

3.
```
define sensor radar FUZE_RADAR1 with field of view 30 power 50
sensitivity 10
define sensor thermal FUZE_THERMAL1 with field of view 45
sensitivity 0.1

define munition missile MUNITION_MISSILE1 with sensor FUZE_RADAR1
fuze FUZE_THERMAL1 arming distance 1.0

define airplane ACTOR_AIRPLANE1 with munition (MUNITION_MISSILE1)

define ship ACTOR_SHIP1 with munition (MUNITION_MISSILE1)

create actor MY_AIRPLANE1 from ACTOR_AIRPLANE1 at
49*39'37.9#/117*26'19.0#/0 with course 90 speed 0

create actor MY_SHIP1 from ACTOR_SHIP1 at
49*39'37.9#/117*25'30.0#/0 with course 0 speed 1

set MY_AIRPLANE1 load munition MUNITION_MISSILE1

@wait 10

set MY_AIRPLANE1 deploy munition MY_AIRPLANE1.MUNITION_MISSILE1.1
```

4. After 10 seconds, `MY_AIRPLANE1` will launch missile `MY_AIRPLANE1.MUNITION_MISSILE1.1`

The missile should chase after `MY_SHIP1` and eventually strike `MY_SHIP1`.

5.



6.

event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deployed	armed	target_id	power_raw	power_attenuated	distance_ela	time_elapse	target_beari
1428	360	12.6	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66052778	117.438611	0	90	0	0	FALSE	FALSE						
1429	360	12.6	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66052778	117.438611	0	90	0	0			MY_SHIP1	0.15	0.137932628			
1430	360	12.6	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66052778	117.438611	0	90	0	0			MY_SHIP1	48.01095919	44.14851858			
1431	361	12.635	airplane	MY_AIRPLANE1	49.66052778	117.438611	0	90	0	0								90
1432	361	12.635	ship	MY_SHIP1	49.6645	117.425	0	0	1	0								
1433	361	12.635	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66052778	117.438611	0	90	0	0	TRUE	FALSE						
1434	361	12.635	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66052778	117.438611	0	90	0	0			MY_SHIP1	0.15	0.137894838			
1435	361	12.635	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66052778	117.438611	0	90	0	0			MY_SHIP1	47.99780523	44.12433042			
1436	362	12.67	airplane	MY_AIRPLANE1	49.66052778	117.438611	0	90	0	0								89.9415349
1437	362	12.67	ship	MY_SHIP1	49.66451389	117.425	0	0	1	0								
1438	362	12.67	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66052778	117.438444	0	90	4	0	TRUE	FALSE						
1439	362	12.67	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66052778	117.438444	0	90	4	0			MY_SHIP1	0.15	0.139428606			
1440	362	12.67	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66052778	117.438444	0	90	4	0			MY_SHIP1	47.93740693	44.55897218			
1441	363	12.705	airplane	MY_AIRPLANE1	49.66052778	117.438611	0	90	0	0								89.88307

event_num	event_group	time	agent_type	agent_id	latitude	longitude	altitude	course	speed_horizontal	speed_vertical	deployed	armed	target_id	power_raw	power_attenuated	distance_ela	time_elapse	target_beari
1863	447	15.645	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66524271	117.425588	0	53.33922593	4	0	TRUE	FALSE						
1864	447	15.645	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66524271	117.425588	0	53.33922593	4	0			MY_SHIP1	0.15	2.636136596			
1865	447	15.645	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66524271	117.425588	0	53.33922593	4	0			MY_SHIP1	39.6562492	696.9285986			
1866	448	15.68	airplane	MY_AIRPLANE1	49.66052778	117.438611	0	90	0	0								
1867	448	15.68	ship	MY_SHIP1	49.66570833	117.425	0	0	1	0								90
1868	448	15.68	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66534422	117.425456	0	52.47851267	4	0	TRUE	FALSE						
1869	448	15.68	thermal	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_THERMAL1.2	49.66534422	117.425456	0	52.47851267	4	0			MY_SHIP1	0.15	3.350311291			
1870	448	15.68	radar	MY_AIRPLANE1.MUNITION_MISSILE1.1.FUZE_RADAR1.1	49.66534422	117.425456	0	52.47851267	4	0			MY_SHIP1	39.07436192	872.7418395			
1871	449	15.715	airplane	MY_AIRPLANE1	49.66052778	117.438611	0	90	0	0								
1872	449	15.715	ship	MY_SHIP1	49.66572222	117.425	0	0	1	0								89.9415349
1873	449	15.715	missile	MY_AIRPLANE1.MUNITION_MISSILE1.1	49.66549823	117.425392	0	22.47851267	4	0	TRUE	TRUE						
1874	450	15.75	airplane	MY_AIRPLANE1	49.66052778	117.438611	0	90	0	0								
1875	450	15.75	ship	MY_SHIP1	49.66573611	117.425	0	0	1	0								
1876	451	15.785	airplane	MY_AIRPLANE1	49.66052778	117.438611	0	90	0	0								
1877	451	15.785	ship	MY_SHIP1	49.66575	117.425	0	0	1	0								89.88307

Log entry 1433 shows that `MY_AIRPLANE1.MUNITION_MISSILE1.1` has been deployed after 10 seconds towards `MY_SHIP1`. Entry 1873 shows `MY_AIRPLANE1.MUNITION_MISSILE1.1` striking `MY_SHIP1`.

7.

The actual results are constituent with the expected results.

8.

A different ship should target `MY_SHIP1` instead of an aircraft, this would verify that a missile can be deployed from different types of actors.